

REVISION TEST PAPERS

PROFESSIONAL COMPETENCE COURSE

GROUP – II

NOVEMBER 2007



BOARD OF STUDIES
THE INSTITUTE OF CHARTERED ACCOUNTANTS OF INDIA

Contents

Paper 4.	Cost Accounting and Financial Management.....	1 – 51
Paper 5.	Taxation	52 – 90
Paper 6A.	Information Technology.....	91 – 118
Paper 6B.	Strategic Management	119 – 127

Published by Dr. T.P. Ghosh, The Institute of Chartered Accountants of India, C-1, Sector-1, NOIDA-201301, India.

Typeset and designed at Board of Studies, The Institute of Chartered Accountants of India.

Printed at _____ Copies _____

PAPER – 4 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

Part I : Cost Accounting

QUESTIONS

1. Identify the correct answer from the given alternatives of the following questions:
 - (i) One of the most important tools in cost planning is:
 - (a) Direct cost;
 - (b) Budget;
 - (c) Marginal costing;
 - (d) None of above.
 - (ii) The main purpose of cost accounting is to :
 - (a) Maximise profits;
 - (b) Help in inventory valuation;
 - (c) Provide information to management for decision making;
 - (d) Aid in the fixation of selling price.
 - (iii) The variable cost per unit is,
 - (a) Variable in nature;
 - (b) Fixed in nature;
 - (c) Semivariable in nature;
 - (d) None of the above.
 - (iv) A company presently does not utilise its available capacity. In case of full capacity utilisation, the cost per unit shall
 - (a) Increase;
 - (b) Decrease;
 - (c) Remain constant;
 - (d) None of the above.
 - (v) Selling and distribution overheads are
 - (a) Product costs in a manufacturing environment;
 - (b) Period costs in a manufacturing environment;
 - (c) Neither period, nor product costs;
 - (d) None of the above.
 - (vi) Separate books of accounts are maintained for costing and financial accounting purposes under,
 - (a) The inter locking system of accounting;
 - (b) The integrated system of accounting;
 - (c) Both a and b;
 - (d) None of the above.
 - (vii) What would be the most appropriate basis for apportioning machinery insurance costs to cost centres within a factory?
 - (a) The number of machines in each cost centre;
 - (b) The floor area occupied by the machinery in each cost centre;

- (c) The value of the machinery in each cost centre;
 - (d) The operating hours of the machinery in each cost centre.
- (viii) Under integrated system of accounting, purchase of raw material is debited to which account,
- (a) Purchase Account;
 - (b) Work in progress control account;
 - (c) Raw material control account.
- (ix) Labour turnover is measured by
- (a) Replacement method;
 - (b) Separation method;
 - (c) Flux method;
 - (d) All of the above.
- (x) What do you understand by over absorbed overheads?
- (a) When overheads absorbed are more than overheads incurred;
 - (b) When overheads absorbed are less than overheads incurred;
 - (c) When overheads absorbed are equal to overheads incurred;
 - (d) None of the above.
2. (a) Explain the relationship between Financial Accounting, Cost Accounting, Management Accounting and Financial Management.
- (b) How Cost Accounting helps to overcome the limitations of Financial Accounting.
3. (a) 'Cost Accounting has become an essential tool of Management of a business concern'. Explain the statement.
- (b) Discuss the factors which should be considered before installing a Costing system in a manufacturing firm.
- (c) What are the characteristics of a good Costing System.
4. (a) What is 'Defective Work'? How it is accounted for in cost accounts?
- (b) Distinguish between 'Committed Fixed Costs' and 'Discretionary Fixed Costs'.
- (c) How will you treat the research and development costs in connection with
- (i) job undertaken on behalf of a customer; and
 - (ii) improvement in existing products ?
5. The following information is provided by ATLANTA Industries with regard to the operations of raw material stores for the fortnight of April, 2007:

Material ASH:

Stock on 1-4-2007 100 units at Rs. 5 per unit.

Purchases

5-4-07	300	units	at Rs. 6
8-4-07	500	units	at Rs. 7
12-4-07	600	units	at Rs. 8

Issues

6-4-07	250	units
10-4-07	400	units
14-4-07	500	units

Required :

- (a) Calculate using FIFO and LIFO methods of pricing issues (you may assume a nil opening and closing balance of stock on the production floor):
- the value of raw materials consumed during the period
 - the value of stock of raw materials on 15-4-07.
- (b) Explain why the figures in (a) and (b) in part A of this question are different under the two methods of pricing of raw material issues used. You need not draw up the Stores Ledgers.
6. (a) Explain the concept of "ABC Analysis" as a technique of Inventory Control.
- (b) Himalaya Ltd. distributes wide range of Water purifier systems. One of its best selling items is a standard water purifier. The management of Himalaya Ltd. uses the EOQ decision model to determine optimal number of standard water purifiers to order. Management now wants to determine how much safety stock to hold.

Himalaya Ltd. estimates annual demand (360 working days) to be 36,000 standard water purifiers. Using the EOQ decision model, the company orders 3,600 standard water purifiers at a time. The lead-time for an order is 6 days. The annual carrying cost of one standard purifier is Rs. 450. Management has also estimated the additional stock out costs would be Rs. 900 for shortage of each standard water purifier.

Himalaya Ltd. has analysed the demand during 200 past re-order periods. The records indicate the following patterns:

Demand during lead time	Number of times quantity was demanded
540	6
560	12
580	16
600	130
620	20
640	10
660	<u>6</u>
	<u>200</u>

- Determine the level of safety stock for standard water purifier that the Himalaya Ltd. should maintain in order to minimize expected stock out costs and carrying 'costs. Carrying costs should be computed on safety stock, which shall remain in hand at all times during the year. (Consider safety stock levels of 0, 20, 40 and 60 units).
 - What would be the Himalaya Ltd.'s new re-order point?
 - What factors Himalaya Ltd. should have considered in estimating stock out costs?
7. (a) Describe the factors which should be taken into consideration before introducing an incentive system.
- (b) Using the details given below, you are required to calculate the earnings of workers Rio and Rayan and subsequently allocate these earnings to the three Jobs A, B and C.

	Rio	Rayan
(a) Basic Wages	Rs. 100	Rs. 100
(b) Dearness Allowance	50%	55%

(c) Provident Fund (on basic wages)	8%	8%
(d) Employee's State Insurance (on basic wages)	2%	2%
(e) Overtime	10 hrs.	—
(f) Idle time and leave	—	16 hrs.

For your calculations, you may assume the following:

- Normal working hours for a month are 200 hours.
- Overtime is paid at double the normal wages plus dearness allowance.
- Employer's contributions to State Insurance and Provident Fund are at equal rate with the employee's contributions.
- The month contains 25 working days and one paid holiday.

The two workers were employed on jobs A, B and C in the following proportions:

Job	A	B	C
Worker A	80	60	60
Worker B	100	40	60
Overtime was done on job Y.			

8. (a) Define overtime. What will the treatment of overtime premium in Cost Accounting?
 (b) In a factory, the basic wage rate is Rs. 10 per hour and overtime rates are as follows:

Before and after normal working hours	:	175% of basic wage rate
Sundays and holidays	:	225% of basic wage rate
During the previous year, the following hours were worked :		
Normal time	:	1,00,000 hours
Overtime before and after working hours	:	20,000 hours
Overtime on Sundays and holidays	:	<u>5,000 hours</u>
Total	:	<u>1,25,000 hours</u>

The following hours have been worked on job 'Z' :

Normal	:	1000 hours
Overtime before and after working hrs.	:	100 hours
Sundays and holidays	:	25 hours
Total	:	<u>1125 hours</u>

You are required to calculate the labour cost chargeable to jobs 'Z' and overhead in each of the following instances:

- (a) Where overtime is worked regularly throughout the year as a policy due to the labour shortage.
 (b) Where overtime is worked irregularly to meet the requirements of production.
 (c) Where overtime is worked at the request of the customer to expedite the job.
9. (a) Discuss briefly the Step method and Reciprocal Service method of secondary distribution of overheads.
 (b) Differentiate between Job costing and Batch costing.

10. As on 31st March, 2007, the following balances existed in a firm's Cost Ledger:

	Dr. Rs.	Cr. Rs.
Stores Ledger Control A/c	3,01,435	
Work-in-Progress Control A/c	1,22,365	
Finished Stock Ledger Control A/c	2,51,945	
Manufacturing Overhead Control A/c		10,525
Cost Ledger Control A/c	<u> </u>	<u>6,65,220</u>
	<u>6,75,745</u>	<u>6,75,745</u>

Following data relates to the next three months:

	Rs.
Finished product (at cost)	2,10,835
Manufacturing overhead incurred	91,510
Raw materials purchased	1,23,000
	Rs.
Factory Wages	50,530
Indirect Labour	21,665
Cost of Sales	1,85,890
Material issued to production	1,27,315
Sales returned at Cost	5,380
Material returned to suppliers	2,900
Manufacturing overhead charged to production	77,200

You are required to pass the Journal Entries (narrations are not required); write up the accounts and schedule the balances, stating what each balance represents.

11. Write short notes on:

- Cost of work uncertified
- Retention money
- Profit /loss on incomplete contracts
- Cost plus contract
- Escalation clause.

12. Following information is available regarding process A for the month of February, 2007:

Production Record	Rs.
Units in process as on 1.2.2007	4,000
(All materials used, 25% complete for labour and overhead)	
New units introduced	16,000
Units completed	14,000
Units in process as on 28.2.2007	6,000
(All materials used, 33-1/3% complete for labour and overhead)	
Cost Records	
Work-in-process as on 1.2.2007	Rs.
Materials	6,000
Labour	1,000
Overhead	<u>1,000</u>

	8,000
Cost during the month	
Materials	25,600
Labour	15,000
Overhead	15,000
	55,600

Presuming that average method of inventory is used, prepare :

- (i) Statement of equipment production.
- (ii) Statement showing cost for each element.
- (iii) Statement of apportionment of cost.
- (iv) Process cost account for process A.

13. A factory is currently running at 50% capacity and produces 5,000 units at a cost of Rs. 900 per unit as per details below:

	Rs.
Material	500
Labour	150
Factory overheads	150 (Rs. 60 fixed)
Administrative overheads	100 (Rs. 50 fixed)

The current selling price is Rs. 1,000 per unit. At 70% working, material cost per unit increases by 2% and selling price per unit falls by 2%.

Estimate profits of the factory at 70% working by preparing a flexible budget.

14. The budgeted cost of a factory specialising in the production of a single product at the optimum capacity of 6,400 units per annum amounts to Rs. 17,60,480 as detailed below:

		Rs.
Fixed costs		2,06,880
Variable costs:		
Power	14,400	
Repairs, etc.	17,000	
Other variable cost	5,400	
Direct material	4,92,800	
Direct labour	<u>10,24,000</u>	<u>15,53,600</u>
		<u>17,60,480</u>

Considering the possible impact on sales turnover by market trends, the company decides to prepare flexible budget with a production target of 3,200 and 4,800 units. On behalf of the company you are required to prepare a flexible budget for production levels at 50% and 75%.

Assuming the selling price per unit is maintained at Rs. 400 as at present, indicate the effect on net profit. Administration, selling and distribution overheads continue at Rs. 36,000.

15. DECCAN Airways owns a single jet aircraft and operates between Bangalore and New Delhi. Flights leave Bangalore on Mondays and Thursdays and depart from New Delhi on Wednesdays and Saturdays. DECCAN Airways cannot afford any more flights between Bangalore and New Delhi. Only tourist class seats are available on its flights. An analyst has collected the following information:

Seating capacity per plane	360
Average Passengers per flight	100
Flights per week	4
Flights per year	208
Average one-way fare	Rs. 10,000
Variable fuel costs	Rs. 1,40,000 per flight
Food service to passengers (not charged to passengers)	Rs. 400 per passenger
Commission paid to travel agents paid by DECCAN Airways on each ticket booked on DECCAN Airways (Assume that all DECCAN tickets are booked by travel agents)	8% of fare
Fixed annual lease costs allocated to each flight	Rs. 5,30,000 per flight
Fixed ground services (maintenance, check-in baggage handling) costs allocated to each flight	Rs. 70,000 per flight
Fixed salaries of flights crew allocated to each flight	Rs. 40,000 per flight

For the sake of simplicity, assume that fuel costs are unaffected by the actual number of passengers on a flight.

Required:

- (a) What is the operating income that DECCAN Airways makes on each one-way flight between Bangalore and New Delhi?
- (b) The market research department of DECCAN Airways indicates that lowering the average one-way fare to Rs. 9,600 will increase the average number of passengers per flight to 106. Should DECCAN Airways lower its fare?
- (c) Travel India, a tour operator, approaches DECCAN Airways to charter its jet aircraft twice each month, first to take Travel India International tourists from Bangalore to New Delhi and then bring the tourists back from New Delhi to Bangalore. If DECCAN Airways accepts the offer, it will be able to offer only 184 (208 minus 24) of its own flights each year. The terms of the charter are:
 - (i) For each one-way flight Travel India will pay DECCAN Rs. 7,50,000 to charter the plane and to use its flight crew and ground service staff.
 - (ii) Travel India will pay for fuel costs.
 - (iii) Travel India will pay for all food costs.

On purely financial considerations, should DECCAN Airways accept the offer from Travel India Tours and Travel?

16. You are given the following data for the year 2007 of Rio Co. Ltd:

Variable cost	60,000	60%
Fixed cost	30,000	30%
Net profit	<u>10,000</u>	<u>10%</u>
Sales	<u>1,00,000</u>	100%

Find out (a) Break-even point, (b) P/V ratio, and (c) Margin of safety. Also draw a break-even chart showing contribution and profit.

17. (a) You are given the following data for the coming year for a factory.

Budgeted output	8,00,000 units
Fixed expenses	40,00,000
Variable expenses per unit	Rs. 10
Selling price per unit	Rs. 20

Draw a break-even chart showing the break-even point.

- (b) If price is reduced to Rs. 180, what will be the new break-even point?
18. (a) Differentiate between absorption costing and marginal costing.
- (b) TAJ Ltd. manufactures a single product, MAHAL. The following figures relate to MAHAL for a one-year period:

Activity Level	50%	100%
Sales and production (units)	400	800
	Rs. lakhs	Rs. lakhs
Sales	8.00	16.00
Production costs:		
Variable	3.20	6.40
Fixed	1.60	1.60
Selling and administration costs:		
Variable	1.60	3.20
Fixed	2.40	2.40

The normal level of activity for the year is 800 units. Fixed costs are incurred evenly throughout the year, and actual fixed costs are the same as budgeted. There were no stocks of MAHAL at the beginning of the year.

In the first quarter, 220 units were produced and 160 units were sold.

Required:

- (a) What would be the fixed production costs absorbed by MAHAL, if absorption costing is used?
- (b) What would be the under/over-recovery of overheads during the period?
- (c) What would be the profit using absorption costing?
- (d) What would be the profit using marginal costing?
- (e) Why is there a difference between the answers to (c) and (d)?
19. The following standards have been set to manufacture a product:

Direct materials:	Rs.
2.5 units of X at Rs. 4 per unit	8.00
3 units of Y at Rs. 3 per unit	9.00
15 units of Z at Re. 1 per unit	<u>15.00</u>
	<u>32.00</u>
Direct labour 3 hours @ Rs. 8 per hour	<u>24.00</u>
Total standard prime cost	<u>56.00</u>

The company manufactured and sold 6,000 units of the product during the year 2006.

Direct material costs were as follows:

12,500 units of X at Rs. 4.40 per unit.

18,000 units of Y at Rs. 2.80 per unit.

88,500 units of Z at Rs. 1.20 per unit.

The company worked 17,500 direct labour hours during the year 2006. For 2,500 of these hours the company paid at Rs. 12 per hour while for the remaining hours the wages were paid at the standard rate.

Compute material price, usage variances, labour rate, and efficiency variances.

20. The standard and actual figures of a firm are as under:

Standard time for the job	1,000 hours
Standard rate per hour	Re. 0.50
Actual time taken	900 hours
Actual wages paid	Rs. 360

Compute

- (i) Rate variance
- (ii) Efficiency variance
- (iii) Total labour cost variance

SUGGESTED ANSWERS/HINTS

1. (i) (b) (ii) (c) (iii) (b) (iv) (b) (v) (b) (vi) (a) (vii) (c) (viii) (c) (ix) (d)
(x) (a)
2. (a) Relationship between Cost Accounting, Financial Accounting, Management Accounting and Financial Management

Cost Accounting is a branch of accounting, which has been developed because of the limitations of Financial Accounting from the point of view of management control and internal reporting. Financial accounting performs admirably, the function of portraying a true and fair overall picture of the results or activities carried on by an enterprise during a period and its financial position at the end of the year. Also, on the basis of financial accounting, effective control can be exercised on the property and assets of the enterprise to ensure that they are not misused. To that extent financial accounting helps to assess the overall progress of a concern, its strength and weaknesses by providing the figures relating to several previous years. Data provided by Cost and Financial Accounting is further used for the management of all processes associated with the efficient acquisition and deployment of short, medium and long term financial resources. Such a process of management is known as Financial Management. The objective of Financial Management is to maximise the wealth of shareholders by taking effective Investment, Financing and Dividend decisions. Investment decisions relate to the effective deployment of scarce resources in terms of funds while the Financing decisions are concerned with acquiring optimum finance for attaining financial objectives. The last and very important 'Dividend decision' relates to the determination of the amount and frequency of cash which can be paid out of profits to shareholders. On the other hand, Management Accounting refers to managerial processes and technologies that are focused on adding value to organisations by attaining the effective use of resources, in dynamic and competitive contexts. Hence, Management Accounting is a distinctive form of resource management which facilitates management's 'decision making' by producing information for managers within an organisation.

- (b) Limitations of Financial Accounting: There are various limitations of financial accounting from the point of view of management. These stem from the fact that management must have information properly analysed and continuously flowing to it. Management cannot be

satisfied with a broad picture, and that too available at the end of a period. The limitations of financial accounts together with procedures that overcome the limitations are given below :

Limitations	Procedures that overcome limitations
A. Forecasting and Planning	
Management requires information so that it can make effective plans for the coming year and the period after that. In other words, information about the future is required. Financial Accounts provide this information.	The technique of budgeting has been evolved. Starting with the assessment of the limiting factors that may be operating, careful estimates can be prepared of all the activities that will be undertaken and then, these can be translated in terms of money. (An analysis of cost into fixed and variable is most useful in this respect). These "estimates", properly coordinated, become budgets and plans of action.
B. Decision making	
Management requires information daily for making decision of any type. Financial Accounts normally are not able to provide information for this purpose. Information is required to answer the under mentioned questions amongst others :	It is the complete analysis of cost incurred that can help management in making the type of decisions mentioned. The analysis has to be two-fold :
(i) What should be the product under normal circumstances and under special circumstances?	(i) The total cost of each job, product, process etc. is to be ascertained; and
(ii) Should a part be produced in the factory itself or bought from the market ?	(ii) The cost must be further analysed as fixed and variable.
(iii) Should the production of a product be given up?	(iii) In other words, management should have information to see what the effect on the revenues and cost (both) will be, if a proposed course of action is taken. This is the marginal costing technique and most problems can be handled with the aid of this technique.
(iv) What should be the priority accorded to a product ?	
(v) Should investment be made in a new project ?	
(vi) How much should be produced to earn a certain profit, given the selling price?	
C. Control and assessment	
Management requires information to assess the performance of various persons and departments and to see that costs do not exceed a reasonable limit for a given quantum of work of the requisite quality. Financial accounts cannot provide information for this purpose. Apart from the general information mentioned above, management requires to know :	The techniques of budgeting and standard costing enable management to perform this function which is one of most important one. In this case also the main activity is analysis and comparison. If standard costing is not adopted, simple comparison of figures over the periods for each element of cost in terms of quantity if possible is of great help.

(i) the profitability of each product ; and (ii) the extent of unnecessary material, labour, facilities etc.	Profitability of each of the product can be easily established by comparing its selling price with the contribution it makes i.e., the difference between the selling price and its variable cost.
---	--

It can be seen from the above that the chief limitation of financial accounting is lack of analysis of information and absence of measuring rods. Cost accounting with the aid of budgeting, standard costing and marginal costing has filled the need in this respect.

3. (a) Importance of Cost Accounting to the management of a business concerns

Management of business concerns expects from Cost Accounting a detailed cost information in respect of its operations to equip their executives with relevant information required for planning, scheduling, controlling and decision making. To be more specific, management expects from cost accounting - information and reports to help them in the discharge of the following functions :

- (a) Control of material cost: Cost of material usually constitute a substantial portion of the total cost of a product. Therefore, it is necessary to control it as far as possible. Such a control may be exercised by (i) Ensuring un-interrupted supply of material and spares for production. (ii) By avoiding excessive locking up of funds/capital in stocks of materials and stores. (iii) Also by the use of techniques like value analysis, standardisation etc. to control material cost.
- (b) Control of labour cost : It can be controlled if workers complete their work within the standard time limit. Reduction of labour turnover and idle time too help us, to control labour cost.
- (c) Control of overheads : Overheads consists of indirect expenses which are incurred in the factory, office and sales department ; they are part of production and sales cost. Such expenses may be controlled by keeping a strict check over them.
- (d) Measuring efficiency : For measuring efficiency, Cost Accounting department should provide information about standards and actual performance of the concerned activity.
- (e) Budgeting : Now-a-days detailed estimates in terms of quantities and amounts are drawn up before the start of each activity. This is done to ensure that a practicable course of action can be chalked out and the actual performance corresponds with the estimated or budgeted performance. The preparation of the budget is the function of Costing Department.
- (f) Price determination: Cost accounts should provide information, which enables the management to fix remunerative selling prices for various items of products and services in different circumstances.
- (g) Curtailment of loss during the off-season: Cost Accounting can also provide information, which may enable reduction of overhead, by utilising idle capacity during the off-season or by lengthening the season.
- (h) Expansion: Cost Accounts may provide estimates of production of various levels on the basis of which the management may be able to formulate its approach to expansion.
- (i) Arriving at decisions: Most of the decisions in a business undertaking involve correct statements of the likely effect on profits. Cost Accounts are of vital help in this respect. In fact, without proper cost accounting, decision would be like taking a jump in the dark, such as when production of a product is stopped.

(b) Essential factors for installing a cost accounting system

As in the case of every other form of activity, it should be considered whether it would be profitable to have a cost accounting system. The benefits from such a system must exceed

the amount to be spent on it. This would depend upon many factors including the nature of the business and the quality of the management. Management, which is prone to making decisions on the basis of pre-conceived notions without taking into account the information and data placed before it, cannot derive much benefit from a costing system. On the other hand management, which is in the habit of studying information thoroughly before making decisions, would require cost accounting system. Before setting up a system of cost accounting the under mentioned factors should be studied:

- (i) The objective of costing system, for example whether it is being introduced for fixing prices or for insisting a system of cost control.
 - (ii) The areas of operation of business wherein the managements' action will be most beneficial. For instance, in a concern, which is anxious to expand its operations, increase in production would require maximum attention. On the other hand for a concern, which is not able, to sell the whole of its production the selling effort would require greater attention. The system of costing in each case should be designed to highlight, in significant areas, factors considered important for improving the efficiency of operations in that area.
 - (iii) The general organisation of the business, with a view of finding out the manner in which the system of cost control could be introduced without altering or extending the organisation appreciably.
 - (iv) The technical aspects of the concern and the attitude and behaviour that will be successful in winning sympathetic assistance or support of the supervisory staff and workmen.
 - (v) The manner in which different variable expenses would be affected with expansion or cessation of different operations.
 - (vi) The manner in which Cost and Financial accounts could be inter-locked into a single integral accounting system and in which results of separate sets of accounts, cost and financial, could be reconciled by means of control accounts.
 - (vii) The maximum amount of information that would be sufficient and how the same should be secured without too much clerical labour, especially the possibility of collection of data on a separate printed form designed for each process; also the possibility of instruction as regards filling up of the forms in writing to ensure that these would be faithfully carried out.
 - (viii) How the accuracy of the data collected can be verified? Who should be made responsible for making such verification in regard to each operation and the form of certificate that he should give to indicate the verification that he has carried out ?
 - (ix) The manner in which the benefits of introducing Cost Accounting could be explained to various persons in the concern, specially those in charge of production department and awareness created for the necessity of promptitude, frequency and regularity in collection of costing data.
- (c) Essentials of a good Cost Accounting System: The essential features, which a good Cost Accounting System should possess, are as follows:
- (i) Cost Accounting System should be tailor-made, practical, simple and capable of meeting the requirements of a business concern.
 - (ii) The data to be used by the Cost Accounting System should be accurate; otherwise it may distort the output of the system.
 - (iii) Necessary cooperation and participation of executives from various departments of the concern is essential for developing a good system of Cost Accounting.
 - (iv) The Cost of installing and operating the system should justify the results.
 - (v) The system of costing should not sacrifice the utility by introducing meticulous and

unnecessary details.

- (vi) A carefully phased programme should be prepared by using network analysis for the introduction of the system.
- (vii) Management should have a faith in the Costing System and should also provide a helping hand for its development and success.

4. (a) 'Defective Work' is the work output which does not meet out the prescribed laid down standard specifications. Such a situation may arise due to various causes, such as use of sub-standard materials, bad workmanship, carelessness in planning, laxity in inspection, etc. Defectives can be reworked or reconditioned by the application of additional material, labour and/or processing and may be brought to the point of either standard work/products or sub-standard products. Reworked units of defectives may be sold through regular channels as first or seconds as the case may be.

Cost Accounting treatment: It intact is concerned with the accounting for costs of their rectification and their nature as - normal or abnormal. The possible ways of treatment are as below:

1. When defectives are normal and it is not beneficial to try to identify them job wise, the following methods are generally used:
 - (a) Charged to good products: The cost of rectification of normal defectives is charged to good units. This method is used when defectives rectified are normal.
 - (b) Charged to general overheads: Where the department responsible for defective cannot be correctly identified, because defectives caused in one department are reflected only on further processing, the rework costs are charged to general overheads.
 - (c) Charged to departmental overheads: If the department responsible for defectives can be correctly identified, the rectification costs should be charged to that department.
 2. Where normal defectives are easily identifiable with specific jobs, the rework costs are debited to the jobs.
 3. When defectives are abnormal and are due to causes within the control of the organisation, the rework cost should be charged to the costing profit and loss account.
- (b) Committed fixed costs, are those fixed costs that arise from the possession of: (i) a plant, building and equipment (e.g. depreciation, rent, taxes, insurance premium etc.) or (ii) a functioning organisation (i.e. salaries of staff). These costs remain unaffected by any short-run actions. These costs are affected primarily by long-run sales forecasts that, in turn indicates the long-run capacity targets. Hence careful long range planning, rather than day-to-day monitoring, is the key to managing committed costs.

Discretionary fixed costs, (sometimes called managed costs or programmed costs). These costs have two important features:

- (i) they arise from periodic (usually yearly) decisions regarding the maximum outlay to be incurred, and
 - (ii) they are not tied to a clear cause-and-effect relationship between inputs and outputs. Examples of discretionary fixed costs includes - advertising, public relations, executive training, teaching, research, health care etc. These costs are controllable.
- (c) (i) Cost of R & D project undertaken on behalf of a specific customer should not be treated as manufacturing overhead. It should be regarded as a separate profit centre. All expenses to meet such costs should be debited to "Outside R & D Project Account". Receipts against such requests are to be credited against this account.
- (ii) Where research and development of products are undertaken on continuous basis the expenditure is treated as product costs. The cost of incomplete research project should

be carried out continuously in order to retain company's place in the industry, the expenditure should be treated as general overhead. Some companies prefer to charge such costs of continuous research, to the Profit & Loss Account.

5. (a) Value of Material ASH consumed during the period

(i) 1-4-06 to 15-4-07 by using FIFO method

Date	Description	Units	Qty. Rs.	Rate Rs.	Amount
1-4-07	Opening balance		100	5	500
5-4-07	Purchased		300	6	1,800
6-4-07	Issued		100	5 } 6 }	1,400
			150		
8-4-07	Purchased		500	7	3,500
10-4-07	Issued		150	6 } 7 }	2,650
			250		
12-4-07	Purchased		600	8	4,800
14-4-07	Issued		250	7 } 8 }	3,750
			250		
15-4-07	Balance		350	8	2,800

Total value of material ASH consumed during the period under FIFO method comes to (Rs. 1,400 + Rs. 2,650 + Rs. 3,750) Rs. 7,800 and balance on 15-4-07 is of Rs. 2,800.

Value of Material ASH consumed during the period
1-4-06 to 15-4-06 by using LIFO method

Date	Description	Qty. Units	Rate Rs.	Amount Rs.
1-4-07	Opening balance	100	5	500
5-4-07	Purchased	300	6	1,800
6-4-07	Issued	250	6	1,500
8-4-07	Purchased	500	7	3,500
10-4-07	Issued	400	7	2,800
12-4-07	Purchased	600	8	4,800
14-4-07	Issued	500	8	4,000
15-4-07	Balance	350	—	2,300*

Total value of material ASH issued under LIFO method comes to (Rs. 1,500 + Rs. 2,800 + Rs. 4,000) Rs. 8,300.

*The balance 350 units on 15-4-07 of Rs. 2,300, relates to opening balance on 1-4-07 and purchases made on 5-4-07, 8-4-07 and 12-4-07. (100 units @ Rs. 5, 50 units @ Rs. 6, 100 units @ Rs. 7 and 100 units @ Rs. 8).

(ii) As shown in (a) above, the value of stock of materials on 15-4-07:

Under FIFO method Rs. 2,800

Under LIFO method Rs. 2,300

- (b) Total value of material ASH issued to production under FIFO and LIFO methods comes to Rs. 7,800 and Rs. 8,300 respectively. The value of closing stock of material ASH on 15-4-07 under FIFO and LIFO methods comes to Rs. 2,800 and Rs. 2,300 respectively.

The reasons for the difference of Rs. 500 (Rs. 8,300 – Rs. 7,800) as shown by the following table in the value of material ASH, issued to production under FIFO and LIFO are as follows:

Date	Quantity Issued (Units)	Value FIFO Rs.	Total Rs.	Value LIFO Rs.	Total Rs.
6-4-07	250	1,400		1,500	
10-4-07	400	2,650		2,800	
14-4-07	500	3,750	7,800	4,000	8,300

- On 6-4-07, 250 units were issued to production. Under FIFO their value comes to Rs. 1,400 (100 units × Rs. 5 + 150 units × Rs. 6) and under LIFO Rs. 1,500 (250 × Rs. 6). Hence, Rs. 100 was more charged to production under LIFO.
- On 10-4-07, 400 units were issued to production. Under FIFO their value comes to Rs. 2,650 (150 × Rs. 6 + 250 × Rs. 7) and under LIFO Rs. 2,800 (400 × Rs. 7). Hence, Rs. 150 was more charged to production under LIFO.
- On 14-4-07, 500 units were issued to production. Under FIFO their value comes to Rs. 3,750 (250 × Rs. 7 + 250 × Rs. 8) and under LIFO Rs. 4,000 (500 × Rs. 8). Hence, Rs. 250 was more charged to production under LIFO.

Thus the total excess amount charged to production under LIFO comes to Rs. 500.

The reasons for the difference of Rs. 500 (Rs. 2,800 – Rs. 2,300) in the value of 350 units of Closing Stock of material ASH under FIFO and LIFO are as follows :

- In the case of FIFO, all the 350 units of the closing stock belongs to the purchase of material made on 12-4-07, whereas under LIFO these units were from opening balance and purchases made on 5-4-07, 8-4-07 and 12-4-07.
- Due to different purchase price paid by the concern on different days of purchase, the value of closing stock differed under FIFO and LIFO. Under FIFO 350 units of closing stock were valued @ Rs. 8 p.u. Whereas under LIFO first 100 units were valued @ Rs. 5 p.u., next 50 units @ Rs. 6 p.u., next 100 units @ Rs. 7 p.u. and last 100 units @ Rs. 8 p.u.

Thus under FIFO, the value of closing stock increased by Rs. 500.

6. (a) ABC Analysis : It is a system of selective inventory control whereby the measure of control over an item of inventory varies with its usage value. It exercises discriminatory control over different items of stores grouped on the basis of the investment involved. Usually the items of material are grouped into three categories viz; A, B and C according to their use value during a period. In other words, the high use value items are controlled more closely than the items of low use value.
- 'A' Category of items consists of only a small percentage i.e., about 10% of the total items of material handled by the stores but require heavy investment i.e., about 70% of inventory value, because of either their high prices or heavy requirement.
 - 'B' Category of items comprises of about 20% of the total items of material handled by stores. The percentage of investment required is about 20% of the total investment in inventories.
 - 'C' Category of items does not require much investment. It may be about 10% of total

inventory value but they are nearly 70% of the total items handled by stores.

'A' category of items can be controlled effectively by using a regular system, which ensures neither over – stocking nor shortage of materials for production. Such a system plans its total material requirements by making budgets. The stocks of materials are controlled by fixing certain levels like maximum level, minimum level and re-order level etc. A reduction in inventory management costs is achieved by determining economic order quantities after taking into account ordering cost and carrying cost. To avoid shortages and to minimize heavy investment of funds in inventories, the techniques of value analysis, variety reduction, standardization etc. are used along with aforesaid techniques.

In the case of 'B' category of items, as the sum involved is moderate, therefore, the same degree of control as applied in 'A' category of items is not warranted. The order for the items, belonging to this category may be placed after reviewing their situation periodically. This category of items can be controlled by routine control measures.

For 'C' category of items, there is no need of exercising constant control. Orders for items in this group may be placed either after six months or once in a year, after ascertaining consumption requirements.

- (b) (i) Determination of the level of safety stock to minimize expected stock out costs and carrying costs

Average daily usage

$$= \frac{\text{Annual demand}}{\text{No. of working days}}$$

$$= \frac{36,000 \text{ units}}{360 \text{ days}} = 100 \text{ units per day}$$

Re-order point = Average daily usage $\times$ Lead time

$$= 100 \text{ units per day} \times 6 \text{ days} = 600 \text{ units}$$

Possible safety stock level = Possible demand – Reorder point

Probability of demand during lead-time is

Demand during lead time	No. of time quantity was demanded	Probability
540	6	0.03
560	12	0.06
580	16	0.08
600	130	0.65
620	20	0.10
640	10	0.05
660	6	0.03
	200	1.00

Safety	Demand	Stock-out	Prob. of	Relevant	No. of	Expected	Relevant	Total
Stock	realizations	in units	stock-out	stock-out	orders	stock-out	carrying	Relevant
level	resulting	(3)=(2) –		(5)=(3)× 900	per year	(7)= (4)×(5) × (6)	(8) = (1) × Rs.450	costs
(units)	in Stock-outs	600 – (1)		(Rs.)				(9)=(7)+(8)
(1)	(2)	(3)	(4)	(5)	(6)	(Rs.)	(Rs.)	(Rs.)
0	620	20	0.10	18,000	10	18,000		
	640	40	0.05	36,000	10	18,000		
	660	60	0.03	54,000	10	16,200		
		–	–	–	–	52,200	0	52,200
20	640	20	0.05	18,000	10	9,000		
	660	40	0.03	36,000	10	10,800		
						19,800	9,000	28,800
40	660	20	0.03	18,000	10	5,400	18,000	23,400
60	Nil	Nil	–	–	–	0	27,000	27,000

Decision:

Safety stock of 40 units would minimize Himalaya Ltd.'s total expected stock-out and carrying cost.

$$\begin{aligned}
 \text{(ii) New Re-order Point} &= \text{ROL} + \text{Safety Stock} \\
 &= 600 \text{ units} + 40 \text{ units} \\
 &= 640 \text{ units}
 \end{aligned}$$

(iii) Factors to consider in estimating stock-out cost

- expediting an order from supplier (additional. ordering cost plus any associated transportation cost).

loss of sales due to stock out (opportunity cost in terms of lost contribution margin on the sales not made due to item not being in stock plus any contribution margin lost on future sales due to customer will be caused by the stock out.)

7. (a) An incentive system should encourage workers to give there best. It should increase productivity and be simple to understand. Following are the important factors, which may be considered before introducing an incentive system:

- Nature of product
- Quantitative measurement
- Should cover all categories of workers.
- The incentive system should be acceptable by all the labour trade unions
- Easy computation
- No restriction on earnings
- Minimum wages should be guaranteed.

(b) Computation of wages payable

	Worker Rio	Worker Rayan
Rs.	Rs.	Rs.
Basic Wages	100	100
Dearness Allowance	50	55
(1) Overtime 10 hours @ Rs. 1.50	15	
Gross Wages	<u>165</u>	<u>155</u>

Less: Deductions

Employees' contribution to provident Fund (8% on basic wages)	(8)		
Employees' contribution to E.S.I. (2% on basic wages)	(2)	(10)	(10)
Net wages Payable		<u>155</u>	<u>145</u>

Allocation of Labour Cost to Jobs

	Worker Rio	Worker Rayan
	Rs.	Rs.
Gross Wages (excluding overtime wages)	150	155
Employer's contribution to P.F. and E.S.I.	<u>10</u>	<u>10</u>
	160	165
Normal working hours per month	200 hrs	200 hrs
Labour cost per hour	$\frac{160}{200} = \text{Re. } 0.80$	$\frac{165}{200} = 0.825$

	Total	Job A	Job B	Job C
	Rs.	Rs.	Rs.	Rs.
Worker Rio Ordinary wages	160.00	64.00	48.00	48.00
Overtime wages	15.00		15.00	
Worker Rayan Ordinary wages	165.00	82.50	33.00	49.50
	340.00	146.50	96.00	97.50

Working Notes:

Calculation of overtime wages

	Rs.
Basic wages per month	100
Dearness allowance	50
	150
Normal working hours per month	200 hours

$$\text{Normal rate per hour} = \frac{\text{Rs. } 150}{200} = \text{Re. } 0.75$$

Therefore, overtime rate is Rs 1.50 because overtime is paid at double the normal rate. Overtime wages for 10 hours @ Rs 1.50 = Rs 15.

8. (a) Overtime: Work done beyond normal working hours is known as 'overtime work'. Overtime has to be paid in India at double the rate of wages including dearness allowance and the value of food concession, according to the Factories Act, 1948. This Act as stated earlier also lays down that a worker is entitled to overtime when he works for more than 9 hours on any day or more than 48 hours in a week.

Treatment of overtime premium in Cost Accounting : Under Cost Accounting the overtime premium is treated as follows :

- (1) If overtime is resorted to at the desire of the customer, then overtime premium may be charged to the job directly.
- (2) If overtime is required to cope with general production programmes or for meeting

urgent orders, the overtime premium should be treated as overhead cost of the particular department or cost centre which works overtime.

- (3) If overtime is worked in a department due to the fault of another department, the overtime premium should be charged to the latter department.
- (4) Overtime worked on account of abnormal conditions such as flood, earthquake etc., should not be charged to cost, but to Costing Profit and Loss Account.

(b) Workings

Computation of average inflated wage rate (including overtime premium) :

Basic wage rate	: Rs. 10 per hour	
Overtime wage rate before and after working hours	: Rs. 10 × 175%	= Rs. 17.50 per hour
Overtime wage rate for Sundays and holidays	: Rs. 10 × 225%	= Rs. 22.50 per hour
Annual wages for the previous year for normal time wages	: 1,00,000 hrs. × Rs. 10	= Rs. 10,00,000
For overtime before and after working hours	: 20,000 hrs. × Rs. 17.50	= Rs. 3,50,000
Wages for overtime on Sundays and holidays	: 5,000 hrs. × Rs. 22.50	= <u>Rs. 1,12,500</u>
Total wages for 1,25,000 hrs.		= Rs. 14,62,500
Average inflated wage rate	$\frac{\text{Rs. 14,62,500}}{1,25,000 \text{ hours}}$	= Rs. 11.70 per hour.

- (a) Where overtime is worked regularly as a policy due to labour shortage, the overtime premium is treated as a part of labour cost and job is charged at an inflated wage rate.

Hence,

$$\begin{aligned} \text{Labour cost chargeable to job Z} &= \text{Total hours} \times \text{Inflated wage rate} \\ &= 1,125 \text{ hrs.} \times \text{Rs. 11.70} = \text{Rs. 13,162.50} \end{aligned}$$

- (b) Where overtime is worked irregularly to meet the requirements of production, basic wage rate is charged to the job and overtime premium is charged to factory overheads as under :

Labour cost chargeable to

$$\text{Job Z : 1,125 hours @ Rs. 10 per hour} = \text{Rs. 11,250.00}$$

$$\text{Factory overhead : 100 hrs.} \times \text{Rs. (17.50 - 10)} = \text{Rs. 750.00}$$

$$25 \text{ hrs.} \times \text{Rs. (22.50 - 10)} = \underline{\text{Rs. 312.50}}$$

$$\text{Total factory overhead} = \underline{\text{Rs. 1,062.50}}$$

- (c) Where overtime is worked at the request of the customer, overtime premium is also charged to the job as under :

			Rs.
Job Z labour cost	1,125 hrs. @ Rs. 10	=	11,250.00
Overtime premium	100 hrs. @ Rs. (17.50 - 10)	=	750.00
	25 hrs. @ Rs. (22.50 - 10)	=	<u>312.50</u>
Total			<u>12,312.50</u>

9. (a) Step method: This method gives cognizance to the service rendered by service department to another service department, thus sequence of apportionments has to be selected. The sequence here begins with the department that renders service to the maximum number of other service department. After this, the cost of service department serving the next largest

number of department is apportioned.

Reciprocal service method: This method recognizes the fact that where there are two or more service department, they may render service to each other and, therefore, these inter department services are to be given due weightage while re-distributing the expense of service department. The methods available for dealing with reciprocal equation method are:

- ◆ Simultaneous equation method
- ◆ Repeated distribution method
- ◆ Trial and error method

(b) Job Costing and batch costing

According to job costing, costs are collected and accumulated according to jobs. Each job or unit of production is treated as a separate entity for the purpose of costing. Job costing may be employed when jobs are executed for different customers according to their specifications. Job costing is suited to industries engaged in printing, laundry, repair shops, locomotives etc.

Batch costing is a form of job costing, a lot of similar units which comprises the batch may be used as a cost unit for ascertaining job. Such a method of costing is used in case of pharmaceutical industry readymade garment s, industries manufacturing parts of TV, radio sets etc.

10. Journal entries are as follows:

		Dr. Rs.	Cr. Rs.
1. Finished stock ledger Control A/c	Dr.	2,10,835	
To Work-in-Progress Control A/c			2,10,835
2. Manufacturing Overhead Control A/c	Dr.	91,510	
To Cost Ledger Control A/c			91,510
3. Stores Ledger Control A/c	Dr.	1,23,000	
To Cost Ledger Control A/c			1,23,000
4. (i) Wage Control A/c	Dr.	72,195	
To Cost Ledger Control A/c			72,195
(ii) Work-in-progress Control A/c	Dr.	50,530	
To Wage Control A/c			50,530
(iii) Manufacturing Overhead Control A/c	Dr.	21,665	
To Wage Control A/c			21,665
5. Cost of Sales A/c	Dr.	1,85,890	
To Finished Stock Ledger A/c			1,85,890
6. Work-in-Progress Control A/c	Dr.	1,27,315	
To Stores Ledger Control A/c			1,27,315
7. Finished Stock Ledger Control A/c	Dr.	5,380	
To Cost of Sales A/c			5,380
8. Cost Ledger Control A/c	Dr.	2,900	
To Stores Ledger Control A/c			2,900

9. Work-in-Progress Control A/c	Dr.	77,200	
To Manufacturing Overhead Control A/c			77,200

COST LEDGER
Cost Ledger Control Account

	Rs.		Rs.
To Stores Ledger Control A/c (return)	2,900	By Balance b/d	6,65,220
" Balance c/d	9,49,025	" Manufacturing Overhead Control A/c	91,510
		" Stores Ledger Control A/c	1,23,000
		" Wage Control A/c	72,195
	<u>9,51,925</u>		<u>9,51,925</u>

Stores Ledger Control Account

	Rs.		Rs.
To Balance b/d	3,01,435	By Work-in-Progress Control A/c	1,27,315
" Cost Ledger Control A/c	1,23,000	" Cost Ledger Control A/c	2,900
		" Balance c/d	2,94,220
	<u>4,24,435</u>		<u>4,24,435</u>

Work-in-Progress Control Account

	Rs.		Rs.
To Balance b/d	1,22,365	By Finished Stock Ledger Control A/c	2,10,835
" Wage Control A/c	50,530	" Balance c/d	1,66,575
" Stores Ledger Control A/c	1,27,315		
Manufacturing Overhead Control A/c	77,200		
	<u>3,77,410</u>		<u>3,77,410</u>

Finished Stock Ledger Control Account

	Rs.		Rs.
To Balance b/d	2,51,945	By Cost of Sales A/c	1,85,890
Work-in-Progress Control A/c	2,10,835	" Balance c/d	2,82,270
" Cost of Sales A/c (return at cost)	5,380		
	<u>4,68,160</u>		<u>4,68,160</u>

Manufacturing Overhead Control Account

	Rs.		Rs.
To Cost Ledger Control A/c	91,510	By Balance b/d	10,525
" Wage Control A/c	21,665	" Work-in-Progress Control A/c	77,200
"		Balance c/d (under recovered)	25,450
	<u>1,13,175</u>		<u>1,13,175</u>

Wage Control Account

	Rs.		Rs.
To Cost Ledger Control A/c	72,195	By Work-in-Progress Control A/c	50,530
	"	Manufacturing Overhead Control A/c	<u>21,665</u>
	<u>72,195</u>		<u>72,195</u>

Cost of Sales Account

	Rs.		Rs.
To Finished Stock Ledger Control A/c	1,85,890	By Finished Stock Ledger Control A/c (Return)	5,380
		"Balance c/d	<u>1,80,510</u>
	<u>1,85,890</u>		<u>1,85,890</u>

Trial Balance

	Dr. Rs.	Cr. Rs.
Stores Ledger Control A/c	2,94,220	
Work-in-Progress Control A/c	1,66,575	
Finished Stock Ledger Control A/c	2,82,270	
Manufacturing Overhead Control A/c	25,450	
Cost of Sales A/c	1,80,510	
Cost Ledger Control A/c		<u>9,49,025</u>
	<u>9,49,025</u>	<u>9,49,025</u>

11. (a) Cost of work uncertified: It represents the cost of the work which has been carried out by the contractor but has not been certified by the contractee's architect. It is always shown at cost price. The cost of uncertified work may be ascertained as follows:

	Rs.
Total cost to date	—
Less: Cost of work certified	—
Material in hand	—
Plant at site	—
Cost of work uncertified	—

- (b) Retention money: A contractor does not receive full payment of the work certified by the surveyor. Contractee retains some amount (say 10% to 20%) to be paid, after sometime, when it is ensured that there is no fault in the work carried out by contractor. If any deficiency or defect is noticed in the work, it is to be rectified by the contractor before the release of the retention money. Retention money provides a safeguard against the risk of loss due to faulty workmanship.
- (c) Profit/loss on incomplete contracts: To determine the profit to be taken to Profit and Loss Account, in the case of incomplete contracts, the following four situations may arise:
- Completion of contract is less than 25 per cent: In this case no profit should be taken to profit and loss account.
 - Completion of contract is upto 25 per cent or more than 25 per cent but less than 50 per cent: In this case one-third of the notional profit, reduced in the ratio of cash received to work certified, should be transferred to the Profit and Loss Account.

Mathematically:

$$\frac{1}{3} \times \text{Notional Profit} \times \frac{\text{Cash received}}{\text{Work received}}$$

- (iii) Completion of contract is upto 50 per cent or more than 50 per cent but less than 90 per cent: In this case, two-third of the notional profit, reduced by proportion of cash received to work certified, is transferred to the Profit and Loss Account. Mathematically :

$$\frac{2}{3} \times \text{Notional Profit} \times \frac{\text{Cash received}}{\text{Work received}}$$

- (iv) Completion of contract is upto 90 per cent or more than 90 per cent i.e. it is nearing completion: In this case the profit to be taken to Profit and Loss Account is determined by determining the estimated Profit and using any one of the following formulas :

(a) $\text{Estimated Profit} \times \frac{\text{Work certified}}{\text{Contract price}}$

(b) $\text{Estimated Profit} \times \frac{\text{Work certified}}{\text{Contract price}} \times \frac{\text{Cash received}}{\text{Work certified}}$

OR

$$\text{Estimated Profit} \times \frac{\text{Cash received}}{\text{Contract price}}$$

(c) $\text{Estimated Profit} \times \frac{\text{Cost of work to date}}{\text{Estimated total cost}}$

(d) $\text{Estimated Profit} \times \frac{\text{Cost of work to date}}{\text{Estimated total cost}} \times \frac{\text{Cash received}}{\text{Work certified}}$

(e) $\text{Notional Profit} \times \frac{\text{Work certified}}{\text{Contract price}}$

(This formula may be preferably used in the absence of estimated profit figure).

It is preferable to use formula (b) in the absence of specific instructions.

- (d) **Cost plus Contract:** Under Cost plus Contract, the contract price is ascertained by adding a percentage of profit to the total cost of the work. Such type of contracts are entered into when it is not possible to estimate the Contract Cost with reasonable accuracy due to unstable condition of material, labour services, etc.

Cost plus contracts have the following advantages and disadvantages:

Advantages:

- (i) The Contractor is assured of a fixed percentage of profit. There is no risk of incurring any loss on the contract.
- (ii) It is useful specially when the work to be done is not definitely fixed at the time of making the estimate.
- (iii) Contractee can ensure himself about 'the cost of the contract', as he is empowered to examine the books and documents of the contractor to ascertain the veracity of the cost of the contract.

Disadvantages - The contractor may not have any inducement to avoid wastages and effect economy in production to reduce cost.

- (e) Escalation Clause: If during the period of execution of a contract, the prices of materials, or labour etc., rise beyond a certain limit, the contract price will be increased by an agreed amount. Inclusion of such a clause in a contract deed is called an "Escalation Clause".

12. (i) Statement of equivalent production

(Average cost method)

Particulars				Materials		Labour		Overhead
Input	Output	Units	%	Equivalent	%	Equivalent	%	Equivalent
(units)			Completion	units	Completion	units	Completion	units
20,000	Completed	14,000	100	14,000	100	14,000	100	14,000
	WIP	<u>6,000</u>	100	<u>6,000</u>	33-1/3	<u>2,000</u>	33-1/3	<u>2,000</u>
20,000		20,000		20,000		16,000		16,000

(ii) Statement showing cost for each element

Particulars	Materials	Labour	Overhead	Total
Cost of opening work-in-progress (Rs.)	6,000	1,000	1,000	8,000
Cost incurred during the month (Rs.)	<u>25,600</u>	<u>15,000</u>	<u>15,000</u>	<u>55,600</u>
Total cost (Rs.) : (A)	31,600	16,000	16,000	63,600
Equivalent units : (B)	20,000	16,000	16,000	
Cost per equivalent unit (Rs.) : (C) = (A/B)	1.58	1	1	3.58

(iii) Statement of apportionment of cost

		Rs.	Rs.
Value of output transferred : (a)	14,000 units @ Rs. 3.58		50,120
Value of closing work-in-progress : (b)			
Materials	6,000 units @ 1.58	9,480	
Labour	2,000 units @ Re. 1	2,000	
Overhead	2,000 units @ Re. 1	<u>2,000</u>	13,480
Total cost : (a + b)			<u>63,600</u>

(iv) Process cost account for process A:

Process A Cost Account

Dr.		Units	Rs.		Units	Cr.
	Rs.					
To Opening WIP	4,000	8,000		By Completed units	14,000	50,120
To Materials	16,000	25,600		By Closing WIP	6,000	13,480
To Labour		15,000				
To Overhead		<u>15,000</u>				
	20,000	63,600			20,000	63,600

13.

Flexible Budget

	50% Capacity 5,000 units		70% Capacity 7,000 units	
	Per unit Rs.	Total Rs.	Per unit Rs.	Total Rs.
Variable costs:				
Material	500	25,00,000	510	35,70,000
Labour	150	7,50,000	150	10,50,000

Factory Overheads	90	4,50,000	90	6,30,000
Administrative Overheads	<u>50</u>	<u>2,50,000</u>	<u>50</u>	<u>3,50,000</u>
Total Variable Costs:	790	39,50,000	800	56,00,000
Sales	<u>1000</u>	<u>50,00,000</u>	<u>980</u>	<u>68,60,000</u>
Contribution	<u>210</u>	<u>10,50,000</u>	<u>180</u>	<u>12,60,000</u>
Fixed costs:				
Factory Overheads		3,00,000		3,00,000
Administrative Overheads		<u>2,50,000</u>		<u>2,50,000</u>
Total Fixed Costs		<u>5,50,000</u>		<u>5,50,000</u>
Profit (Contribution – Fixed cost)		<u>5,00,000</u>		<u>7,10,000</u>

Workings:

(1) Fixed factory overheads : Rs. 60 × 5,000 = Rs. 3,00,000.

(2) Fixed administrative overheads : Rs. 50 × 5,000 = Rs. 2,50,000.

14. Flexible Budget

Activity Level	50%	75%	100%
Production (units)	3,200	4,800	6,400
	Rs.	Rs.	Rs.
Sales @ Rs. 400 per unit	<u>12,80,000</u>	<u>19,20,000</u>	<u>25,60,000</u>
Variable costs :			
Direct Materials	2,46,400	3,69,600	4,92,800
Direct Labour	5,12,000	7,68,000	10,24,000
Power	7,200	10,800	14,400
Repairs etc.	8,500	12,750	17,000
Other variable cost	<u>2,700</u>	<u>4,050</u>	<u>5,400</u>
Total Variable Costs:	<u>7,76,800</u>	<u>11,65,200</u>	<u>15,53,600</u>
Fixed costs :			
Manufacturing	2,06,880	2,06,880	2,06,880
Administration, Selling and Distribution	<u>36,000</u>	<u>36,000</u>	<u>36,000</u>
Total Fixed Costs:	<u>2,42,880</u>	<u>2,42,880</u>	<u>2,42,880</u>
Total Costs	<u>10,19,680</u>	<u>14,08,080</u>	<u>17,96,480</u>
Profit (Sales – Variable Cost) – Fixed Cost	<u>2,60,320</u>	<u>5,11,920</u>	<u>7,63,520</u>

15. (a) Statement of Operating Income of DECCAN Airways
operating between Bangalore and New Delhi (on each one way flight)

	Rs.
Fare received (per flight): (A)	10,00,000
100 passengers × Rs. 10,000	
Variable costs (per flight):	
Commission paid	80,000
Rs. 10,00,000 × 8%	
Food Services	40,000
100 passengers × Rs. 400	

Fuel costs	<u>1,40,000</u>
Total variable costs: (B)	2,60,000
Contribution (per flight): (C): [(A) – B]	7,40,000
Fixed costs (per flight):	
Fixed annual lease costs	5,30,000
Fixed ground services (maintenance, check-in baggage handling) costs	70,000
Fixed salaries of flight crew	<u>40,000</u>
Total fixed costs: (D)	6,40,000
Operating income (per flight): [(C) – (D)]	1,00,000

(b)

	Rs.
Fare received (per flight): (X)	10,17,600
106 passengers × Rs. 9,600	
Variable costs:	
Commission paid	
Rs. 10,17,600 × 8%	81,408
Food service	42,400
106 passengers × Rs. 400	
Fuel costs	<u>1,40,000</u>
Total variable costs: (Y)	<u>2,63,808</u>
Contribution per flight: (Z): [(X) – (Y)]	7,53,792
Excess contribution due to lowering of fare: [(Z) – (C)]	13,792
[Refer to (a) part] (Rs. 7,53,792 - Rs. 7,40,000)	
DECCAN Airways should lower its fare as it would increase its contribution towards profit by Rs. 13,792 per flight.	

(c) Financial consideration of DECCAN Airways to charter its plane to Travel India should use option (b) and not (a)

	Rs.
Under option (b) DECCAN Airway receives contribution (per flight)	7,53,792
DECCAN Airway would get (per flight) if it charters the plane	7,50,000
A comparison of the above data clearly shows that the DECCAN Airways would be financially better off by not chartering the plane.	

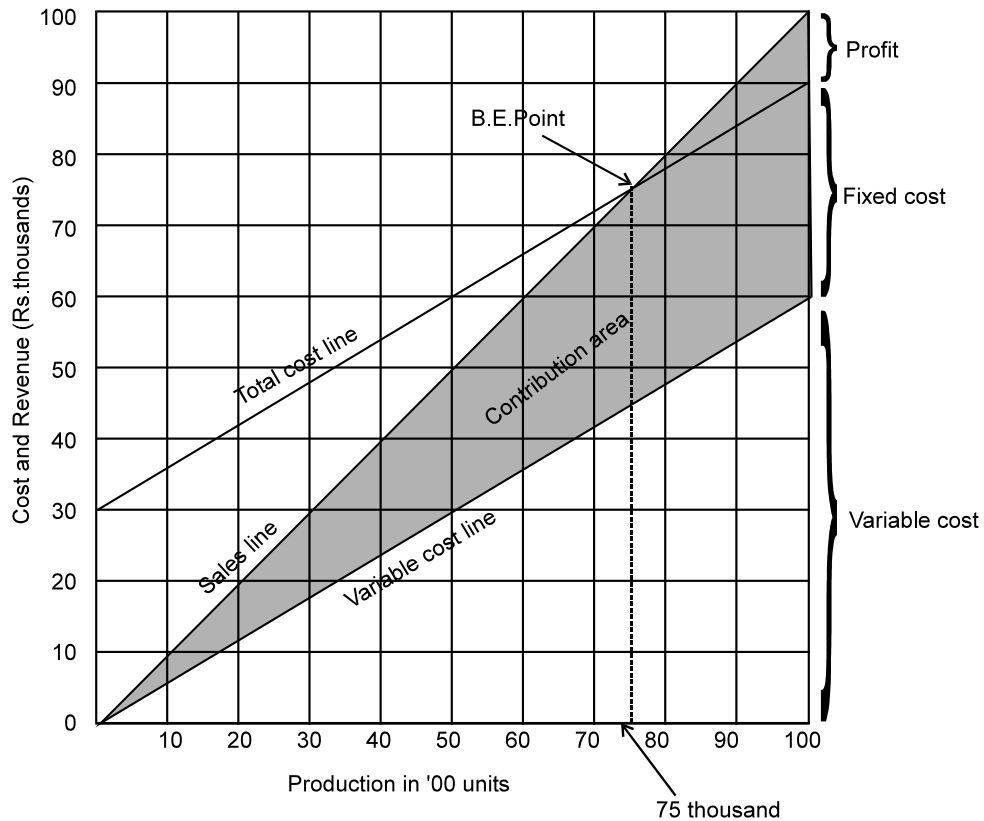
$$16. \quad P/V \text{ ratio} = \frac{S - V}{S} = \frac{1,00,000 - 60,000}{1,00,000} = 40\%$$

$$BE \text{ point} = \frac{F}{P/V \text{ ratio}} = \frac{30,000}{40\%} = \text{Rs. } 75,000$$

Margin of safety = Actual Sales – BE point

$$= 1,00,000 - 75,000 = \text{Rs. } 25,000$$

Break even chart showing contribution is shown below:



Break-even chart

17. (a) Contribution = $S - V = \text{Rs. } 200 - \text{Rs. } 100 = \text{Rs. } 100$ per unit.

$$\text{B.E. Point} = \frac{\text{Fixed cost}}{\text{Contribution per unit}} = \frac{40,00,000}{\text{Rs. } 100} = 4,00,000 \text{ units}$$

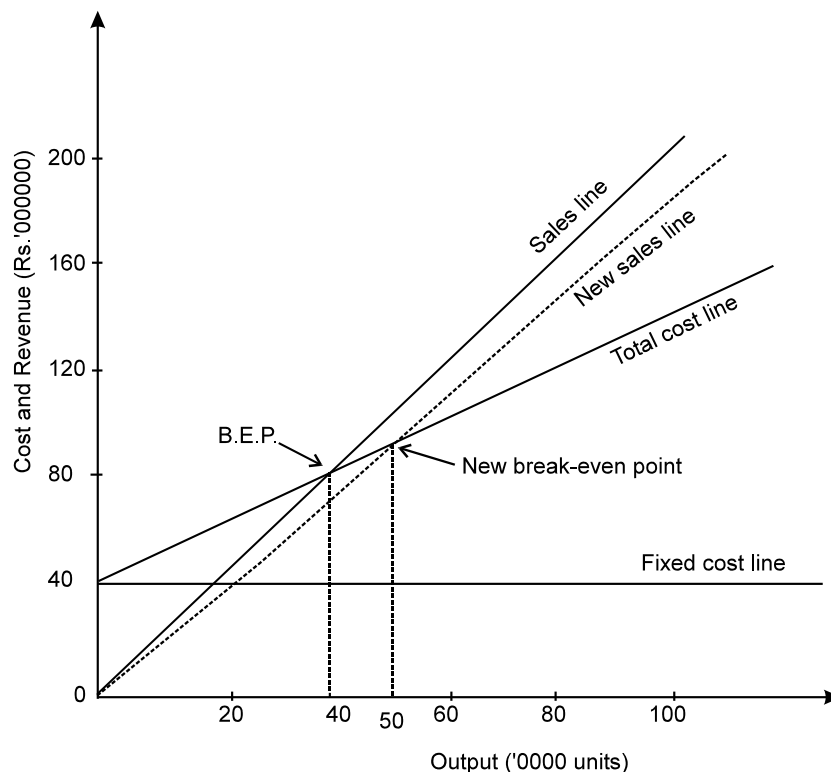
- (b) When selling price is reduced

New selling price = Rs. 180

New Contribution = $\text{Rs. } 180 - \text{Rs. } 100 = \text{Rs. } 80$ per unit.

$$\text{New B.E. Point} = \frac{\text{Rs. } 40,00,000}{\text{Rs. } 80} = 5,00,000 \text{ units.}$$

The break-even chart is shown below:



Break-even chart

18. (a) Fixed production costs absorbed: Rs.
- Budgeted fixed production costs 1,60,000
- Budgeted output (normal level of activity 800 units)
- Therefore, the absorption rate : $1,60,000/800 = \text{Rs. } 200 \text{ per unit}$
- During the first quarter, the fixed production cost absorbed by MAHAL would be $(220 \text{ units} \times \text{Rs. } 200)$ 44,000
- (b) Under/over-recovery of overheads during the period: Rs.
- Actual fixed production overhead 40,000
- (1/4 of Rs. 1,60,000)
- Absorbed fixed production overhead 44,000
- Over-recovery of overheads $(\text{Rs. } 44,000 - \text{Rs. } 40,000)$ 4,000
- (c) Profit for the Quarter (Absorption Costing) Rs. Rs.
- Sales revenue $(160 \text{ units} \times \text{Rs. } 2,000) : (A)$ 3,20,000
- Less : Production costs
- Variable $(220 \text{ units} \times \text{Rs. } 800)$ 1,76,000
- Fixed overheads absorbed $(220 \text{ units} \times \text{Rs. } 200)$ 44,000
- Total $(220 \text{ units} \times \text{Rs. } 1,000)$ 2,20,000
- Less : Closing stock $(60 \text{ units} \times \text{Rs. } 1,000)$ 60,000
- Production cost of 160 units 1,60,000
- Variable sales & admn. costs $(160 \text{ units} \times \text{Rs. } 400)$ 64,000
- Fixed selling & admn. costs $(1/4 \text{ of Rs. } 2,40,000)$ 60,000
- Total cost of sales of 160 units : (B) 2,84,000
- Unadjusted profit : $\{(A) - (B)\}$ 36,000

Add: Overheads over absorbed		4,000
Actual profit		<u>40,000</u>
(d) Profit for the Quarter (Marginal costing)	Rs.	Rs.
Sales revenue (160 units × Rs. 2,000) : (A)	3,20,000	
Variable production costs (220 units × Rs. 800)	1,76,000	
Less: Closing stock (60 units × Rs. 800)	<u>48,000</u>	
Variable production cost of 160 units	1,28,000	
Add: Variable selling & admn. costs	<u>64,000</u>	
Total variable cost of sales of 160 units : (B)		<u>1,92,000</u>
Contribution : {(A) – (B)}		1,28,000
Less: Fixed production cost incurred	40,000	
Fixed selling & admn. costs incurred	<u>60,000</u>	<u>1,00,000</u>
Actual profit		28,000

19. Standard Quantity of materials for Actual Output:

X	6,000 × 2.5	15,000 units
Y	6,000 × 3	18,000 units
Z	6,000 × 15	90,000 units

Standard hours for Actual Output:

6,000 × 3	18,000 hours
-----------	--------------

Material Price Variance:

(Standard Price – Actual Price) × Actual Quantity

		Rs.	
X	(Rs. 4.00 – Rs. 4.40) × 12,500	5,000	A
Y	(Rs. 3.00 – Rs. 2.80) × 18,000	3,600	F
Z	(Re. 1.00 – Rs. 1.20) × 88,500	<u>17,700</u>	A
		<u>19,100</u>	A

Material Usage Variance:

(Standard Usage – Actual Usage) × Standard Price

		Rs.	
X	(15,000 – 12,500) × Rs. 4.00	10,000	F
Y	(18,000 – 18,000) × Rs. 3.00	Nil	
Z	(90,000 – 88,500) × Re. 1.00	<u>1,500</u>	F
		<u>11,500</u>	F

Labour Rate Variance:

(Standard Rate – Actual Rate) × Actual hours

	Rs.	
(Rs. 8.00 – Rs. 12.00) × 2,500	10,000	A
(Rs. 8.00 – Rs. 8.00) × 15,000	Nil	
	<u>10,000</u>	A

Labour Efficiency Variance:

$$(\text{Standard hours} - \text{Actual hours}) \times \text{Standard Rate}$$

		Rs.	
	$(18,000 - 17,500) \times \text{Rs. } 8.00$	<u>4,000</u>	F
20. (a)	Std. labour cost	Rs.	
	$(1,000 \text{ hours} \times \text{Re. } 0.50)$	500	
(b)	Actual wages paid	360	
(c)	Actual rate per hour: $\text{Rs. } 360/900 \text{ hours} = \text{Re. } 0.40$		
Variances			
(i)	Rate variance	=	Actual time (Std. rate – Actual rate)
		=	900 hours (Re. 0.50 – Re. 0.40) = Rs. 90 (F)
(ii)	Efficiency variance	=	Std. rate per hr. (Std. time – Actual time)
		=	Re. 0.50 (1,000 hrs. – 900 hrs.) = Rs. 50 (F)
(iii)	Total labour cost variance	=	Std. labour cost – Actual labour cost
		=	(Std. rate $\times$ std. time) – (Actual rate $\times$ Actual time)
		=	(Re. .50 $\times$ 1,000 hrs.) – (Re. .40 $\times$ 900 hrs.)
		=	Rs. 500 – Rs. 360
		=	Rs. 140(F).

PART – II : FINANCIAL MANAGEMENT

1. Answer the following, supporting the same with reasoning/working notes:
 - (a) When opening stock is Rs. 50,000, closing stock Rs. 60,000, and cost of goods sold Rs. 2,20,000, what is the stock turnover ratio?
 - (b) Net sales for ABC Company for the year are Rs. 2,50,000 and debtors are Rs. 50,000. Find out the average collection period?
 - (c) Accounting information given by Alpha Company is as follows:

Total assets turnover	3 times
Net Profit margin	10%
Total assets	Rs. 1,00,000

 Calculate the net profit of the company.
 - (d) If net profit is Rs. 35,000 after writing off goodwill Rs. 6,000, and loss on the sale of furniture Rs. 1,000, then calculate funds from operation.
 - (e) The decision criteria for the payback period technique is to accept the project if the payback period is greater than the minimum time period acceptable to the firm. Is the statement true or false?
 - (f) A firm has a "hurdle rate" of 17% on new investments. An investment has an IRR of 15%. The firm should reject or accept the project.
 - (g) Mr. X wants to buy an ordinary annuity that will pay him Rs. 4,000 a year for the next 20 years. He expects annual interest rates will be 8 per cent over that time period. Calculate the maximum price he would be willing to pay for the annuity.
 - (h) EOQ is the order quantity that minimizes total carrying costs over the planning horizon. Is the statement true or false?
 - (i) If two projects are completely independent (or unrelated), what is the measure of correlation between them?
 - (j) A firm's degree of operating leverage (DOL) depends primarily upon its sales variability. Is the statement true or false?

2. The following are the ratios relating to the activities of Delta Traders Ltd.:

Debtors velocity	3 months
Stock velocity	8 months
Creditors velocity	2 months
Gross profit ratio	25 per cent

Gross profit for the current year ended December 31 amounts to Rs. 4,00,000. Closing stock of the year is Rs. 10,000 above the opening stock. Bills receivable amount to Rs. 25,000 and bills payable to Rs. 10,000. Calculate: (a) Sales, (b) Sundry debtors, (c) Closing stock (d) Sundry creditors.

3. From the figures given under relating to Xansa Ltd., prepare a statement showing application and sources of funds during the current year ending March.

	March 31, previous year (Rs. Thousand)	March 31, current year (Rs. Thousand)
Assets:	510	620
Fixed assets (net)	30	80
Investments	240	375
Current assets	<u>10</u>	<u>5</u>

Discount on debentures	<u>790</u>	<u>1,080</u>
Liabilities and Capital:		
Share capital (equity)	300	350
Share capital (preference)	200	100
Debentures	100	200
Reserves	110	270
Provision for doubtful debts	10	15
Current liabilities	<u>70</u>	<u>145</u>
	<u>790</u>	<u>1,080</u>

Additional information:

During the year:

- (i) A machine costing Rs. 70,000 (book value Rs. 40,000), was disposed off for Rs. 25,000.
- (ii) Preference share redemption was carried out at premium of 5 per cent and
- (iii) Dividend @ 15 per cent was paid on equity shares for the previous year.

Further:

- (a) The provision for depreciation stood at the beginning of the current year at Rs. 1,50,000 and Rs. 1,90,000 at the end of the year.
- (b) Stock which was valued at Rs. 90,000 at the beginning of the year was written up to its cost (Rs. 1,00,000) for preparing the profit and loss account for the current year.

4. The following figures of Startrek Ltd. are presented as under:

		(Rs.)
Earnings before interest and tax		23,00,000
Less: Debenture interest @ 18%	80,000	
Long Term Loan interest @ 11%	<u>2,20,000</u>	<u>3,00,000</u>
		20,00,000
Less: Income Tax		<u>10,00,000</u>
Earnings after tax		10,00,000
No. of Equity shares of Rs. 10 each	5,00,000	
E.P.S.	Rs. 2	
Market price of share	Rs. 20	
P/E ratio	10	

The company has undistributed reserves and surplus of Rs. 20 lakhs. It is in need of Rs. 30 lakhs to pay off debentures and modernise its plants. It seeks your advice on the following alternative modes of raising finance.

- Alternative 1 - Raising entire amount as term loan from banks @ 12%
- Alternative 2 - Raising part of the funds by issue of 1,00,000 shares of Rs. 20 each and the rest by term loan at 12%.

The company expects to improve its rate of return by 2% as a result of modernisation, but P/E ratio is likely to go down to 8 if the entire amount is raised as term loan.

- (i) Advise the company on the financial plan to be selected.
- (ii) If it is assumed that there will be no change in the P/E ratio if either of the two alternatives is adopted, would your advice still hold good?

5. Targray Ltd. is considering building an assembly plant and the company has two options, out of which it wishes to choose the best plant. The projected output is 10,000 pieces per month. The following data are available:

		Rs.	
		Plant A	Plant B
Initial Cost		60,00,000	44,00,000
Direct Labour cost p.a.	(1st Shift)	30,00,000	15,00,000
	(Second Shift)		19,00,000
Overhead	(per year)	5,00,000	4,20,000

Both the plants have an expected life of 10 years after which there will be no salvage value. The cost of capital is 10%. The present value of an ordinary annuity of Re. 1 for 10 years @ 10% is 6.1446. Ignore effect of taxation.

You are required to determine:

- What would be the desirable choice?
- What other important elements are to be considered before the final decision is taken?

6. Following is the abridged Balance Sheet of Zenia Ltd.:-

Balance Sheet as at 31-3-2006

Liabilities	Rs.	Assets	Rs.
Share Capital	1,00,000	Land and Buildings	80,000
Profit and Loss Account	17,000	Plant and Machineries	50,000
Current Liabilities	40,000	Less: Depreciation	<u>15,000</u>
			<u>35,000</u>
			1,15,000
		Stock	21,000
		Debtors	20,000
		Bank	<u>1,000</u>
			<u>42,000</u>
Total	1,57,000	Total	1,57,000

With the help of the additional information furnished below, you are required to prepare Trading and Profit & Loss Account and a Balance Sheet as at 31st March, 2007:

- The company went in for reorganisation of capital structure, with share capital remaining the same as follows:

Share capital	50%
Other Shareholders' funds	15%
5% Debentures	10%
Trade Creditors	25%

Debentures were issued on 1st April, interest being paid annually on 31st March.

- Land and Buildings remained unchanged. Additional plant and machinery has been bought and a further Rs. 5,000 depreciation written off.

(The total fixed assets then constituted 60% of total gross fixed and current assets.)

- Working capital ratio was 8 : 5.

- Quick assets ratio was 1 : 1.

- (v) The debtors (four-fifth of the quick assets) to sales ratio revealed a credit period of 2 months. There were no cash sales.
- (vi) Return on net worth was 10%.
- (vii) Gross profit was at the rate of 15% of selling price.
- (viii) Stock turnover was eight times for the year.

Ignore Taxation.

7. Festo Company currently pays a dividend of Rs. 2 per share and this dividend is expected to grow at a 15 per cent annual rate for 3 years, then at a 10 per cent rate for the next 3 years, after which it is expected to grow at a 5 per cent rate forever.
 - (a) What value would you place on the stock if an 18 per cent rate of return were required?
 - (b) Would your valuation change if you expected to hold the stock only for 3 years?
8. For Festo Company in the above question, suppose the company were expected to have a price/earnings ratio of 8 times at the end of year 6. Moreover, earnings per share in year 7 are expected to be Rs. 7.50. If the present market price per share is Rs. 35, what is the expected return on investment? (Assume that the terminal value at the end of year 6 is based on year 7 earnings).
9. Metwire Company makes gauges for yachts. The gauges are sold throughout the country to yacht dealers, and the average order size is Rs. 50. The company sells to all registered dealers without a credit analysis. Terms are net 45 days, and the average collection period is 60 days, which is regarded as satisfactory. The Vice-President (Finance), is now uneasy about the increasing number of bad-debt losses on new orders. With credit ratings from local and regional credit agencies, he feels he would be able to classify new orders into one of three risk categories. Past experience shows the following:

	Order Category		
	Low risk	Medium risk	High risk
Bad-debt loss	1%	4%	24%
Percent of category orders to total orders	30	50	20

The cost of producing and shipping the gauges and of carrying the receivables is 78 per cent of sales. The cost of obtaining credit-rating information and of evaluating it is Rs. 4 per order. Surprisingly, there does not appear to be any association between the risk category and the collection period; the average for each of the three risk categories is around 60 days. Based on this information, should the company obtain credit information on new orders instead of selling to all new accounts without credit analysis?

10. A newly formed company has applied for a loan to a commercial bank for financing its working capital requirements. You are requested by the bank to prepare an estimate of the requirements of the working capital for the company. Add 10 percent to your estimated figure to cover unforeseen contingencies. The information about the projected profit and loss account of this company is as under:

		(Rs.)
Sales		21,00,000
Cost of goods sold		<u>15,30,000</u>
Gross Profit		5,70,000
Less: Administrative expenses	1,40,000	
Selling expenses	<u>1,30,000</u>	<u>2,70,000</u>
Profit before tax		<u>3,00,000</u>
Provision for tax		1,00,000

Cost of goods sold has been derived as follows:

Material used	8,40,000
Wages and manufacturing expenses	6,25,000
Depreciation	<u>2,35,000</u>
	17,00,000
Less: Stock of finished goods (10 percent not yet sold)	<u>1,70,000</u>
	<u>15,30,000</u>

The figures given relate only to the goods that have been finished and not to work-in-progress; goods equal to 15 percent of the year's production (in terms of physical units) are in progress on an average, requiring full materials but only 40 percent of other expenses. The company believes in keeping two months consumption of material in stock; desired cash balance, Rs. 40,000. Average time-lag in payment of all expenses is 1 month; suppliers of materials extend 1.5 months credit; sales are 20 percent cash; rest is at two months credit; 70 percent of the income tax has to be paid in advance in quarterly installments.

11. Luminous Limited is newly commencing business in 2007 and has the under-mentioned Projected Profit & Loss Account:

	Rs.	Rs.
Sales		21,00,000
Less : Cost of goods sold		<u>15,30,000</u>
Gross profit		5,70,000
Add : Administration Expenses	1,40,000	
Add : Selling Expenses	<u>1,30,000</u>	<u>2,70,000</u>
Profit before tax		3,00,000
Less : Provision for taxation		<u>1,00,000</u>
Profit after tax		<u>2,00,000</u>

The cost of goods sold has been arrived at as under:

Materials used	8,40,000
Wages & Manufacturing Expenses	6,25,000
Depreciation	<u>2,35,000</u>
	17,00,000
Less : Stock of finished goods (10% of goods produced not yet sold)	<u>1,70,000</u>
	<u>15,30,000</u>

The figures given above relate only to finished goods and not to work-in-progress. Goods equal to 15% of year's production (in terms of physical units) will be in process on the average requiring full materials but only 40% of the other expenses. The company believes in keeping materials equal to two month's consumption in stock.

All expenses will be paid one month in arrear; suppliers of material will extend 1½ months' credit, sales will be 20% for cash and the rest at two months credit, 70% of the income tax will be paid in advance in quarterly installments. The company wishes to keep Rs. 80,000 in cash.

Prepare an estimate of the requirements of working capital on the basis of :

- Estimates of current assets and current liabilities
- Estimates on cash cost basis.

12. Consider the balance sheet of Galena Company at December 31 (in thousands). The company has received a large order and anticipates the need to go to its bank to increase its borrowings. As a result, it has to forecast its cash requirements for January, February and March. Typically, the company collects 20 per cent of its sales in the month of sale, 70 per cent in the subsequent month, and 10 per cent in the second month after the sale. All sales are credit sales.

	Rs.		Rs.
Cash	50	Accounts payable	360
Accounts receivable	530	Bank loan	400
Inventories	<u>545</u>	Accruals	<u>212</u>
Current assets	1,125	Current liabilities	972
Net fixed assets	1,836	Long-term debt	450
		Common stock	100
		Retained earnings	<u>1,439</u>
Total assets	<u>2,961</u>	Total liabilities and equity	<u>2,961</u>

Purchases of raw materials are made in the month prior to the sale and amount to 60 per cent of sales in the subsequent month. Payments for these purchases occur in the month after the purchase. Labour costs, including overtime, are expected to be Rs. 1,50,000 in January, Rs. 2,00,000 in February, and Rs. 1,60,000 in March. Selling, administrative, taxes, and other cash expenses are expected to be Rs. 1,00,000 per month for January through March. Actual sales in November and December and projected sales for January through April are as follows (in thousands):

	Rs.		Rs.		Rs.
November	500	January	600	March	650
December	600	February	1,000	April	750

On the basis of this information:

- Prepare a cash budget for the months of January, February, and March.
 - Determine the amount of additional bank borrowings necessary to maintain a cash balance of Rs. 50,000 at all times.
 - Prepare a pro forma balance sheet for March 31.
13. Pashupati Company is required to choose between two machines M1 and M2. The two machines are designed differently, but have identical capacity and do exactly the same job. Machine M1 costs Rs. 1,50,000 and will last for 3 years. It costs Rs. 40,000 per year to run. Machine M2 is an 'economy' model costing only Rs. 1,00,000, but will last only for 2 years, and costs Rs. 60,000 per year to run. These are real cash flows. The costs are forecasted in rupees of constant purchasing power. Ignore tax. Opportunity cost of capital is 10 per cent. Which machine should the company buy?
14. Differentiate between the following:
- Cash Flow and Funds Flow Statements
 - Investment Decisions and Dividend Decisions
 - Business Risk and Financial Risk
 - Weighted Average Cost of Capital and Marginal Cost of Capital.
15. Write short notes on the following:
- Indifference Point

- (b) Capital Rationing
- (c) Inflation Bonds and Floating Rate Bonds
- (d) Time Value of Money.

SUGGESTED ANSWERS / HINTS

- 1 (a) $\text{Stock Turnover Ratio} = \frac{\text{Sales}}{\text{Average Inventory}} = \frac{2,20,000}{55,000} = 4 \text{ times}$
- (b) $\text{Average Collection Period} = \frac{\text{Average Accounts Receivable}}{\text{Average Daily Credit Sales}}$
 $= \frac{50,000}{2,50,000/360} = 72 \text{ days}$
- (c) $\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}} = 3$
 $\text{Sales} = 3 \times \text{Total Assets}$
 $\text{Sales} = 3 \times 1,00,000 = 3,00,000$
 $\text{Net Profit} = 0.10 \times 3,00,000 = \text{Rs. } 30,000$
- (d) Rs. 42,000
- (e) False. The decision criteria for the payback period technique is to accept the project if the payback period is less than the minimum time period acceptable for similar projects.
- (f) The firm should reject the project.
- (g) $\text{PVA} = 4,000 (\text{PVIF at } 8\% \text{ for } 20 \text{ years})$
 $= 4,000 \times 9.818 = \text{Rs. } 39,272.$
- (h) False. EOQ is the order quantity that minimizes total inventory costs over the planning horizon.
- (i) Zero.
- (j) False. A firm's degree of operating leverage (DOL) depends primarily upon its closeness to its operating break-even point.
2. (a) Determination of sales: $\text{Sales} = \frac{\text{Rs. } 4,00,000}{25} \times 100 = \text{Rs. } 16,00,000$
- (b) Determination of sundry debtors: Debtors velocity is 3 months. In other words, debtors' collection period is 3 months, or debtors' turnover ratio is 4. Assuming all sales to be credit sales and debtors turnover ratio being calculated on the basis of year-end figures,
- $\text{Debtors turnover ratio} = \frac{\text{Credit Sales}}{\text{Closing debtors} + \text{Bills receivable}}$
- or
- $\text{Closing debtors} + \text{Bills receivable} = \frac{\text{Credit sales}}{\text{Debtors turnover ratio}} = \frac{\text{Rs. } 16,00,000}{4} = \text{Rs. } 4,00,000$
- Closing debtors = Rs. 4,00,000 – Rs. 25,000 = Rs. 3,75,000.

- (c) Determination of closing stock: Stock velocity of 8 months signifies that the inventory holding period is 8 months, stock turnover ratio is $1.5 = (12 \text{ months} \div 8)$.

$$\text{Stock turnover} = \frac{\text{Cost of goods sold (Sales – Gross profit)}}{\text{Average stock}}$$

$$1.5 = \frac{\text{Rs. 12,00,000}}{\text{Average stock}}$$

$$\text{Average stock} = \frac{\text{Rs. 12,00,000}}{1.5} = \text{Rs. 8,00,000}$$

$$\text{Closing stock} - \text{Opening stock} = \text{Rs. 10,000} \quad \dots\dots\dots(1)$$

$$\frac{\text{Closing stock} + \text{Opening stock}}{2} = \text{Rs. 8,00,000} \quad \dots\dots\dots(2)$$

$$\text{Or, Closing stock} + \text{Opening stock} = \text{Rs. 16,00,000} \quad \dots\dots\dots(3)$$

Subtracting (1) from (3) we have,

$$2 \text{ Opening stock} = \text{Rs. 15,90,000}$$

$$\text{Opening stock} = \text{Rs. 7,95,000}$$

$$\text{Therefore, Closing Stock} = \text{Rs. 8,05,000}$$

- (d) Determination of sundry creditors: Creditors velocity of 2 months signifies that the credit payment period is 2 months. In other words, creditors' turnover ratio is 6 ($12 \text{ months} \div 2$). Assuming all purchases to be credit purchases and creditors turnover is based on year-end figures,

$$\text{Creditors turnover ratio} = \frac{\text{Creditors purchases}}{\text{Credits + Bills payable}}$$

$$6 = \frac{\text{Rs. 12,10,000}}{\text{Creditors} + \text{Rs. 10,000}}$$

$$\text{Creditors} + \text{Rs. 10,000} = \frac{\text{Rs. 12,10,000}}{6} = \text{Rs. 2,01,667}$$

$$\text{Creditors} = \text{Rs. 2,01,667} - \text{Rs. 10,000} = \text{Rs. 1,91,667}$$

Credit purchases are calculated as follows:

$$\text{Cost of goods sold} = \text{Opening stock} + \text{Purchases} - \text{Closing stock}$$

$$\text{Rs. 12,00,000} = \text{Rs. 7,95,000} + \text{Purchases} - \text{Rs. 8,05,000}$$

$$\text{Rs. 12,00,000} + \text{Rs. 10,000} = \text{Purchases}$$

$$\text{Rs. 12,10,000} = \text{Purchases (credit).}$$

3. Statement of sources and application of funds for the current year ended March 31.

Amount (Rs. Thousand)

Sources of funds:

Funds from business operations	290
--------------------------------	-----

Sale of non-current assets:

Machine	25
---------	----

Issue of long-term liabilities:

Equity shares	50
---------------	----

Debentures	<u>100</u>
------------	------------

Total financial resources provided	<u>465</u>
------------------------------------	------------

Application of funds:

Purchase of non-current assets:

Fixed assets 220

Investments 50

Payment of long-term liabilities:

Redemption of preference shares 105

Recurring payment to investors:

Equity holders (dividends) 45Total financial resources used 420

Increase in networking capital: (source-uses) 45

Working notes:

(i) Determination of funds from business operations

Amount (Rs. Thousand)

Balance of reserves as on March 31 current year 270

Add:

Depreciation on fixed assets 70

Discount on debentures 5

Premium on redemption of preference shares 5

Loss on sale of machine 15

Dividends 45

410

Less: Balance of reserves as on March 31, previous year

(Rs. 1,10,000 + Rs. 10,000, upward revaluation of opening stock) 120290

(ii) Fixed assets (gross) A/c (Rs. thousand)

To balance b/d 660 By cash 25

To cash (balancing figure for purchases) 220 By P&L A/c 15

By accumulated depreciation 30

By balance c/d 810

880 880

Accumulated Depreciation A/c (Rs. Thousand)

To fixed assets 30 By balance b/d 152

To balance c/d 190 By P&L A/c (balancing figure of depreciation) 70

220 220

Statement of changes in working capital (Rs. Thousand)

	March 31 previous year	March 31 current year	Working capital
--	---------------------------	--------------------------	-----------------

Increase (+) Decrease (-)

Current assets (Rs. 240 + Rs. 10 added to opening stock of current year)	<u>250</u>	<u>375</u>	125
--	------------	------------	-----

Current liabilities	70	145	75
Provision for doubtful debts	<u>10</u>	<u>15</u>	5
Total current liabilities	<u>80</u>	<u>160</u>	
Net working capital (current assets – current liabilities)	170	215	
Increase in working capital	<u>45</u>		<u>45</u>
	<u>215</u>	<u>215</u>	<u>125</u>

4. Working Notes:

(i) Capital Employed

		Rs.
Equity Capital	(5,00,000 shares of Rs. 10 each)	50,00,000
Debentures	(Rs. 80,000×100/8)	10,00,000
Term Loan		20,00,000
Reserves and Surplus	(Rs. 2,20,000×100/11)	20,00,000
Total capital employed		<u>1,00,00,000</u>

(ii) Rate of return

Earnings before interest and tax = Rs. 23,00,000

Rate of return on capital employed

$$= \frac{\text{Rs. 23,00,000}}{\text{Rs. 1,00,00,000}} \times 100 = 23\%$$

(iii) Expected rate of return after modernisation = 23% + 2% = 25%

Alternative 1: Raise entire amount as term loan

	Rs.
Original Capital employed	1,00,00,000
Less: Debentures	<u>10,00,000</u>
	90,00,000
Add: Additional term loan	<u>30,00,000</u>
Revised capital employed	<u>1,20,00,000</u>

	Rs.
EBIT on revised capital employed (@ 25% on Rs. 120 lakhs)	30,00,000
Less: Interest	
Existing Term Loan (@11%)	2,20,000
New Term Loan (@12%)	<u>3,60,000</u>
	5,80,000
	24,20,000
Less: Income Tax (@ 50%)	<u>12,10,000</u>
Earnings after tax (EAT)	<u>12,10,000</u>

$$\text{Earnings per Share (EPS)} = \frac{\text{EAT}}{\text{No. of Equity Shares}} = \frac{\text{Rs. 12,10,000}}{5,00,000 \text{ Shares}} = \text{Rs. 2.42}$$

$$\text{P/E Ratio} = \frac{\text{Market price per share}}{\text{EPS}} = 8$$

$$8 = \frac{\text{Market Price}}{\text{Rs. 2.42}}$$

Market Price = Rs. 19.36

Alternative 2: Raising part by issue of equity shares and rest by term loan.

	Rs.
Earnings before interest and tax (@ 25% on revised capital employed i.e., Rs. 120 lakhs)	30,00,000
Less: Interest	
Existing Term Loan (@11%)	2,20,000
New Term Loan (@12% on Rs.10,00,000)	<u>1,20,000</u>
	3,40,000
	26,60,000
Less: Income tax @ 50%	<u>13,30,000</u>
Earnings after tax	13,30,000

$$\text{EPS} = \frac{\text{Rs. 13,30,000}}{5,00,000 (\text{existing}) + 1,00,000 (\text{new})} = \text{Rs. 2.217}$$

P/E ratio = 10

Market price = Rs. 22.17

Advise:

- (i) From the above computations it is observed that the market price of Equity Shares is maximised under Alternative 2. Hence this alternative should be selected.
- (ii) If, under the two alternatives, the P/E ratio remains constant at 10, the market price under Alternative 1 would be Rs. 24.20. Then Alternative 1 would be better than Alternative 2.

5. (a) Computation of differential cash flow

			(Rs.)
	Plant A	Plant B	Differential cash outflow
Direct labour cost:			
1 st shift	30,00,000	15,00,000	(15,00,000)
2 nd shift		19,00,000	19,00,000
Overhead	5,00,000	4,20,000	<u>80,000</u>
Net saving for using Plant A			<u>3,20,000</u>

Present value of net saving of (Rs. 3,20,000 × 6.1446) = Rs. 19,66,272. Plant A @ 10% (cost of capital)

(b) Additional cash outlay for Plant A over Plant B

	Rs.
Cost of Plant A	60,00,000
Cost of Plant B	44,00,000
Additional outlay for using Plant A	16,00,000

Analysis: The net saving for the company in choosing plant A = Rs. 19,66,272 – Rs. 16,00,000 = Rs. 3,66,272. Hence, Plant A should be implemented.

6.

Particulars	%	(Rs.)
Share capital	50%	1,00,000
Other shareholders funds	15%	30,000
5% Debentures	10%	20,000
Trade creditors	25%	50,000
Total	100%	2,00,000

Land and Buildings Rs. 80,000

Total liabilities = Total Assets

Rs. 2,00,000 = Total Assets

Fixed Assets = 60% of total gross fixed assets and current assets
 = Rs. 2,00,000 × 60/100 = Rs. 1,20,000

Calculation of additions to Plant & Machinery

	Rs.
Total fixed assets	1,20,000
Less: Land & Buildings	80,000
Plant and Machinery (after providing depreciation)	40,000
Depreciation on Machinery up to 3 1-3-2004	15,000
Add: Further depreciation	5,000
Total	20,000

Current assets = Total assets – fixed assets

= Rs. 2,00,000 – Rs. 1,20,000 = Rs. 80,000

Calculation of stock

Quick ratio:

$$= \frac{\text{Current assets} - \text{stock}}{\text{Current liabilities}} = 1$$

$$= \frac{\text{Rs. 80,000} - \text{stock}}{\text{Rs. 50,000}} = 1$$

Rs. 50,000 = Rs. 80,000 – Stock

Stock = Rs. 80,000 – Rs. 50,000

= Rs. 30,000

Debtors = 4/5th of quick assets

= (Rs. 80,000 – 30,000) × 4/5

= Rs. 40,000

Debtors' turnover ratio

$$= \frac{\text{Debtors}}{\text{Credit Sales}} \times 365 = 60 \text{ days}$$

$$= \frac{40,000 \times 12}{\text{Credit Sales}} \times 365 = 2 \text{ months}$$

$$2 \text{ credit sales} = 4,80,000$$

$$\text{Credit sales} = 4,80,000/2$$

$$= 2,40,000$$

Gross profit (15% of sales)

$$\text{Rs. } 2,40,000 \times 15/100 = \text{Rs. } 36,000$$

Return on networth (profit after tax)

$$\begin{aligned} \text{Net worth} &= \text{Rs. } 1,00,000 + \text{Rs. } 30,000 \\ &= \text{Rs. } 1,30,000 \end{aligned}$$

$$\text{Net profit} = \text{Rs. } 1,30,000 \times 10/100 = \text{Rs. } 13,000$$

$$\text{Debenture interest} = \text{Rs. } 20,000 \times 5/100 = \text{Rs. } 1,000$$

Projected profit and loss account for the year ended 31-3-2007

To	Cost of goods sold	2,04,000	By	Sales	2,40,000
To	Gross profit	36,000			
		2,40,000			2,40,000
To	Debenture interest	1,000	By	Gross profit	36,000
To	Administration and other expenses	22,000			
To	Net profit	13,000			
		36,000			36,000

Zenia Ltd.

Projected Balance Sheet as at 31st March, 2007

Liabilities	Rs.	Assets	Rs.
Share capital	1,00,000	Fixed assets	
Profit and loss A/c (17,000+13,000)	30,000	Land & buildings	80,000
5% Debentures	20,000	Plant & machinery	60,000
Current liabilities		Less: Depreciation	<u>20,000</u>
			<u>40,000</u>
		Current assets	
		Stock	30,000
Trade creditors	50,000	Debtors	40,000
		Bank	10,000
	<u>2,00,000</u>		<u>80,000</u>
			<u>2,00,000</u>

7. (a)

End of year	Dividend	Present value of Dividends, 18%
1	Rs. 2.00 (1.15) = Rs. 2.30	× .84746 = Rs. 1.95
2	Rs. 2.00 (1.15) ² = Rs. 2.64	× .71818 = Rs. 1.90
3	Rs. 2.00 (1.15) ³ = Rs. 3.04	× .60863 = Rs. 1.85
4	Rs. 3.04 (1.10) = Rs. 3.35	× .51579 = Rs. 1.73
5	Rs. 3.04 (1.10) ² = Rs. 3.68	× .43711 = Rs. 1.61
6	Rs. 3.04 (1.10) ³ = Rs. 4.05	× .37043 = <u>Rs. 1.50</u>
		<u>Rs. 10.54</u>

Year 7 dividend = Rs. 4.05(1.05) = Rs. 4.25.

Market value at the end of year 6 = $4.25 / (.18 - .05) = \text{Rs. } 32.69$.

PV = Rs. 32.69 $\times$ 0.37043 = Rs. 12.11.

Value = Rs. 10.54 + Rs. 12.11 = Rs. 22.65.

(b) Present value of market value at the end of year 3

= Rs. 1.73 + Rs. 1.61 + Rs. 1.50 + Rs. 12.11 = Rs. 16.95.

Present value of expected dividend to be received at the end of years 1, 2 and 3

= Rs. 1.95 + Rs. 1.90 + Rs. 1.85 = Rs. 5.70.

Total value = Rs. 16.95 + Rs. 5.70 = Rs. 22.65.

Thus, the value is the same for an investor with a 3-year time horizon

8. Terminal value at the end of year 6 equals Rs. 7.50 EPS $\times$ 8 P/E ratio = Rs. 60.00. The expected cash flows to the investor are (in rupees):

Year	0	1	2	3	4	5	6
Cash flow	-35.00	2.30	2.64	3.04	3.35	3.68	64.05

Solving for the rate of discount that equates the present values of the cash inflows with the cash outflow of Rs. 35 at time 0, we find it to be 16.50 per cent.

9. As the bad-debt loss ratio for the high-risk category exceeds the profit margin of 22 per cent, it would be desirable to reject orders from this risk class if such orders could be identified. However, the cost of credit information, as a percentage of the average order, is Rs. 4/Rs. 50 = 8%, and this cost is applicable to all new orders. As the high-risk category is one-fifth of sales, the comparison would be $5 \times 8\% = 40\%$ relative to the bad-debt loss of 24%. Therefore, the company should not undertake credit analysis of new orders.

This can be understood by taking an example.

Suppose new orders were Rs. 1,00,000. The following would then hold:

	Order Category		
	Low risk	Medium risk	High risk
Total orders	Rs. 30,000	Rs. 50,000	Rs. 20,000
Bad-debt loss	300	2,000	4,800

$$\text{Number of orders} = \frac{\text{Rs. } 1,00,000}{\text{Rs. } 50} = 2,000$$

Credit analysis cost = 2,000 $\times$ Rs. 4 = Rs. 8,000.

To save Rs. 4,800 in bad-debt losses by identifying the high-risk category of new orders, the company must spend Rs. 8,000. Therefore, it should not undertake the credit analysis of new orders. This is a case where the size of the order is too small to justify credit analysis. After a new order is accepted, the company will gain experience and can reject subsequent orders if its experience is bad.

10. Net working capital estimate of a company.

(A)	Current Assets:	(Rs.)
(i)	Raw material in stock $\left(\text{Rs. } 8,40,000 \times \frac{2}{12} \right)$	1,40,000

(ii)	Work-in-progress		
(a)	Raw material (Rs. 8,40,000×15/100)		1,26,000
(b)	Wages and manufacturing expenses (Rs. 6,25,00×0.4×15/100)		37,500
(iii)	Stock of finished goods		
	[Rs. 1,70,000 – Rs. 23,500 (0.10×Rs. 2,35,000; depreciation)]		1,46,500
(iv)	Debtors		
(a)	Cost of goods sold	Rs. 15,30,000	
	Less: Depreciation		
	(Rs. 2,35,000×0.9)	2,11,500	
		<u>13,18,500</u>	
(b)	Administrative expenses	1,40,000	
(c)	Selling expenses	<u>1,30,000</u>	
	Total	<u>15,88,500</u>	
	Credit sales (4/5 of Rs. 15,88,500 = 12,70,800		
	$\left(12,70,800 \times \frac{2}{12}\right)$		2,11,800
(v)	Cash required		<u>40,000</u>
	Total Investment in Current Assets		<u>7,01,800</u>
(B)	Current Liabilities:		
(i)	Average time-lag in payment of expenses:		
(a)	Wages and manufacturing expenses	6,25,000	
(b)	Administrative expenses	1,40,000	
(c)	Selling expenses	<u>1,30,000</u>	
		8,95,000÷12	<u>74,583</u>
(ii)	Creditors (Rs. 8,40,000×3/24)		<u>1,05,000</u>
	Total Current Liabilities		<u>1,79,583</u>
(C)	Net Working Capital: Current Assets – Current Liabilities		5,22,217
	Add: 10 percent contingencies		<u>52,222</u>
			<u>5,74,439</u>

Assumptions and Working Notes:

- Depreciation is not a cash expense and, therefore, excluded from cost of goods sold for the purpose of determining work-in-progress, finished goods and investment in debtors.
- Since profit is not taken into consideration in the calculation as a source of working capital, income tax has been excluded as it is to be paid out of profits.

11. (i) Estimate of Working Capital Requirements on the basis of Current Assets and Current Liabilities :

Current Liabilities	Rs.	Current Assets	Rs.
Sundry Creditors :		Finished Stock :	
		(10% of goods produced)	
Purchases	1,40,875	Raw materials	84,000
(Refer to working note 4)			
Expenses and Wages	55,208	Wages	62,500
(Refer to working note 5)			
Administration &		Depreciation	23,500
Selling expenses	22,500	Work-in-Progress	1,70,000
(Refer to working note 6)		(Refer to working note 1)	
Provision for taxation	<u>30,000</u>	Materials	1,26,000
	2,48,583	Wages	37,500
		Depreciation	14,100
Balance being		Raw Material	1,61,000
Working Capital		(Refer to working note 2)	
required	6,20,017	Sundry Debtors :	
say Rs. 6,20,000		(Refer to working note 3)	
		Materials	1,00,800
		Wages	75,000
		Depreciation	28,200
		Admn. & Selling Expenses	36,000
		Profit	40,000
		Cash in hand	80,000
	<u>8,68,600</u>		<u>8,68,600</u>

(ii) Estimate of Working Capital on the basis of cash costs:

	Rs.
Working capital as per statement given above	6,20,017
Less : Profit & Depreciation for which funds are not needed	1,05,800
(Refer to working note 7)	
Working capital required	<u>5,14,217</u> or say 5,14,000

Working Notes:

- Work-in-progress : It is being 15% of goods produced

	Rs.
15% of materials consumed for finished goods	1,26,000
15% of 40% of wages and expenses	37,500
15% of 40% of depreciation	14,100
	<u>1,77,600</u>
- Raw Materials : Raw materials will be 1/6 of total materials consumed, i.e. Rs. 8,40,000 for finished goods plus 1/6 of Rs. 1,26,000 for work-in-progress
- Sundry debtors :

80% of two month's sales

$$(\text{Rs. } 21,00,000 \times \frac{80}{100} \times \frac{2}{12})$$

Or, Rs. 2,80,000

4. Creditors : Creditors for raw material on the basis of total purchases during the year
(Rs. 8,40,000 + Rs. 1,26,000 + Rs. 1,61,000) $\times \frac{1\frac{1}{2}}{12}$ or Rs. 1,40,875
5. Creditors for expenses : Rs. (6,25,000 + 37,500) $\times \frac{1}{12}$ = Rs. 55,208
6. Creditors for administration & selling expenses : Rs. 2,70,000 $\times \frac{1}{12}$ = Rs. 22,500
7. Depreciation and profit included in the costs of current assets :

Depreciation :	Rs.
Finished goods	23,500
Work-in-progress	14,100
Debtors	28,200
	65,800
Profit Included in Debtors	40,000
(including income tax. i.e. Rs. 13,333)	

1,05,800

12. (a) Cash Budget

(in thousands)

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sales	500	600	600	1,000	650	750
Collections, current month's sales			120	200	130	
Collections, previous month's sales			420	420	700	
Collections, previous 2 month's sales			<u>50</u>	<u>60</u>	<u>60</u>	
Total cash receipts			<u>590</u>	<u>680</u>	<u>890</u>	
Purchases		360	600	390	450	
Payment for purchases			360	600	390	
Labour costs			150	200	160	
Other expenses			<u>100</u>	<u>100</u>	<u>100</u>	
Total cash disbursements			<u>610</u>	<u>900</u>	<u>650</u>	
Receipts less disbursements			<u>(20)</u>	<u>(220)</u>	<u>240</u>	

(b)

	Jan.	Feb.	Mar.
	Rs.	Rs.	Rs.
Additional borrowings	20	220	(240)
Cumulative borrowings	420	640	400

The amount of financing peaks in February owing to the need to pay for purchases made the previous month and higher labour costs. In March, substantial collections are made on the prior month's billings, causing large net cash inflow sufficient to pay off the additional borrowings.

(c) Pro forma Balance Sheet, March 31 (in thousands):

	Rs.		Rs.
Cash	50	Accounts payable	450
Accounts receivable	620	Bank loan	400
Inventories	<u>635</u>	Accruals	<u>212</u>
Current assets	1,305	Current liabilities	1,062
Net fixed assets	1,836	Long-term debt	450
		Common stock	100
		Retained earnings	<u>1,529</u>
Total assets	<u>3,141</u>	Total liabilities and equity	<u>3,141</u>

Accounts receivable = Sales in March $\times .8$ + Sales in February $\times .1$

Inventories = Rs. 545 + Total purchases January through March – Total sales January through March $\times .6$

Accounts payable = Purchases in March

Retained earnings = Rs. 1,439 + Sales – Payment for purchases – Labour costs and – Other expenses, all for January through March

13. Statement showing the Evaluation of Two Machines

Machines	M1	M2
Purchase cost (Rs.): (i)	1,50,000	1,00,000
Life of machines (years)	3	2
Running cost of machine per year (Rs.): (ii)	40,000	60,000
Cumulative present value factor for 1-3 years @ 10%: (iii)	2.486	-
Cumulative present value factor for 1-2 years @ 10%: (iv)	-	1.735
Present value of running cost of machines (Rs.): (v)	99,440	1,04,100
	[(ii) $\times$ (iii)]	[(ii) $\times$ (iv)]
Cash outflow of machines (Rs.): (vi)=(i) +(v)	2,49,440	2,04,100
Equivalent present value of annual cash outflow	1,00,338	1,17,637
	[(vi) $\div$ (iii)]	[(vi) $\div$ (iv)]

Decision: The Company should buy machine M1 since its equivalent cash outflow is less than that of machine M2.

14. (a) Cash Flow and Funds Flow Statements

Both funds flow and cash flow statements are used in analysis of past transactions of a business firm. The differences between these two statements are given below:

Funds flow statement is based on the accrual accounting system. In case of preparation of cash flow statements all transactions effecting the cash or cash equivalents only is taken into consideration.

Funds flow statement analyses the sources and application of funds of long-term nature and the net increase or decrease in long-term funds will be reflected on the working capital of the firm. The cash flow statement will only consider the increase or decrease in current assets and current liabilities in calculating the cash flow of funds from operations.

Funds Flow analysis is more useful for long range financial planning. Cash flow analysis is more useful for identifying and correcting the current liquidity problems of the firm.

Funds flow statement tallies the funds generated from various sources with various uses to which they are put. Cash flow statement starts with the opening balance of cash and reach to the closing balance of cash by proceeding through sources and uses.

(b) Investment Decisions and Dividend Decisions

Investment decisions determine how scarce resources in terms of funds available are committed to projects which can range from acquiring a piece of plant to the acquisition of another company. Funds procured from different sources have to be invested in various kinds of assets. Long term funds are used in a project for various fixed assets and also for current assets. The investment of funds in a project has to be made after careful assessment of the various projects through capital budgeting. A part of long term funds is also to be kept for financing the working capital requirements. Asset management policies are to be laid down regarding various items of current assets. The inventory policy would be determined by the production manager and the finance manager keeping in view the requirement of production and the future price estimates of raw materials and the availability of funds.

Whereas, Dividend decisions relate to the determination as to how much and how frequently cash can be paid out of the profits of an organisation as income for its owners/shareholders. The owner of any profit-making organization looks for reward for his investment in two ways, the growth of the capital invested and the cash paid out as income; for a sole trader this income would be termed as drawings and for a limited liability company the term is dividends.

The dividend decisions thus have two elements – the amount to be paid out and the amount to be retained to support the growth of the organisation, the latter being also a financing decision; the level and regular growth of dividends represent a significant factor in determining a profit-making company's market value, i.e. the value placed on its shares by the stock market.

(c) Business Risk and Financial Risk

Business risk refers to the risk associated with the firm's operations. It is the uncertainty about the future operating income (EBIT), i.e. how well can the operating income be predicted? Business risk can be measured by the standard deviation of the Basic Earning Power ratio.

Financial risk refers to the additional risk placed on the firm's shareholders as a result of debt use i.e. the additional risk a shareholder bears when a company uses debt in addition to equity financing. Companies that issue more debt instruments would have higher financial risk than companies financed mostly or entirely by equity. Financial risk can be measured by ratios such as the firm's financial leverage multiplier, total debt to assets ratio or degree of financial leverage. A company's risk is composed of financial risk, which is linked to debt, and business risk, which is often linked to economic climate. If a company is entirely financed by equity, it would pose almost no financial risk, but, it would be susceptible to business risk or changes in the overall economic climate.

(d) Weighted Average Cost of Capital and Marginal Cost of Capital

Weighted Average Cost of Capital represents the investors' opportunity cost of taking on the risk of putting money into a company. Since every company has a capital structure i.e. what percentage of debt comes from retained earnings, equity shares, preference shares, and bonds, so by taking a weighted average, it can be seen how much interest the company has to pay for every rupee it borrows. Thus, weighted average cost of capital is the weighted average after tax costs of the individual components of firm's capital structure. That is, the after tax cost of each debt and equity is calculated separately and added together to a single overall cost of capital.

Whereas, the Marginal Cost of Capital may be defined as the cost of raising an additional rupee of capital. Since the capital is raised in substantial amount in practice marginal cost is referred to as the cost incurred in raising new funds. Marginal cost of capital is derived, when the average cost of capital is calculated using the marginal weights. The marginal weights represent the proportion of funds the firm intends to employ. Thus, the problem of choosing between the book value weights and the market value weights does not arise in the case of marginal cost of capital computation. To calculate the marginal cost of capital, the intended financing proportion should be applied as weights to marginal component costs. The marginal cost of capital should, therefore, be calculated in the composite sense.

15. (a) Indifference Point

EBIT-EPS analysis is a widely used tool to determine level of debt in a firm. Through this analysis, a comparison can be drawn for various methods of financing by obtaining indifference point. It is a point to the EBIT level at which EPS remain unchanged irrespective of debt level equity mix. For example indifference point for the capital mix (equity share capital and debt) can be determined as follows:

$$\frac{(EBIT - I_1)(1 - T)}{E_1} = \frac{(EBIT - I_2)(1 - T)}{E_2}$$

Where,

EBIT	=	Indifference point
E ₁	=	Number of equity shares in Alternative 1
E ₂	=	Number of equity shares in Alternative 2
I ₁	=	Interest charges in Alternative 1
I ₂	=	Interest charges in Alternative 2
T	=	Tax-rate
Alternative 1	=	All equity finance
Alternative 2	=	Debt-equity finance.

(b) Capital Rationing

Generally, firms fix up maximum amount that can be invested in capital projects, during a given period of time, say a year. The firm then attempts to select a combination of investment proposals that will be within the specific limits providing maximum profitability and rank them in descending order according to their rate of return; such a situation is of capital rationing.

A firm should accept all investment projects with positive NPV, with an objective to maximise the wealth of shareholders. However, there may be resource constraints due to which a firm may have to select from among various projects. Thus there may arise a situation of capital rationing where there may be internal or external constraints on procurement of necessary funds to invest in all investment proposals with positive NPVs.

In capital rationing it may also be more desirable to accept several small investment proposals than a few large investment proposals so that there may be full utilisation of budgeted amount. This may result in accepting relatively less profitable investment proposals if full utilisation of budget is a primary consideration. Similarly, capital rationing may also mean that the firm foregoes the next most profitable investment following after the budget ceiling even though it is estimated to yield a rate of return much higher than the required rate of return. Thus capital rationing does not always lead to optimum results.

(c) Inflation Bonds and Floating Rate Bonds

Inflation Bonds are the bonds in which interest rate is adjusted for inflation. Thus, the investor gets interest which is free from the effects of inflation. For example, if the interest rate is 11 per cent and the inflation is 5 per cent, the investor will earn 16 per cent meaning thereby that the investor is protected against inflation.

Floating Rate Bonds, as the name suggests, are the bonds where the interest rate is not fixed and is allowed to float depending upon the market conditions. This is an ideal instrument which can be resorted to by the issuer to hedge themselves against the volatility in the interest rates. This has become more popular as a money market instrument and has been successfully issued by financial institutions like IDBI, ICICI etc.

(d) Time Value of Money

The time value of money (TVM) is one of the basic concepts of finance. We know that if we deposit money in a bank account we will receive interest. Because of this, we prefer to receive money today rather than the same amount in the future. Money we receive today is more valuable to us than money received in the future by the amount of interest we can earn with the money. This is referred to as the time value of money.

The term time value of money can be defined as "The value derived from the use of money over time as a result of investment and reinvestment. This term may refer to either present value or future value calculations. The present value is the value today of an amount that would exist in the future with a stated investment rate called the discount rate." For example, with a 10% annual discount rate, the present value today of Rs. 110 one year from now is Rs. 100.

PAPER – 5 : TAXATION

QUESTIONS

1. During the previous year 2006-07, Hari had the following income:

	Rs.
(a) Salary income received in India for services rendered in Nepal.	21,000
(b) Income from profession in India, but received in Italy.	15,000
(c) Property income in Spain (out of which Rs.7,000 was remitted to India).	23,000
(d) Profits earned from business in Coimbatore.	18,000
(e) Profits from a business carried on in Nepal but controlled from India.	40,000
(f) Past untaxed profits remitted to India during the previous year 2006-07.	33,000

Find out the gross total income of Mr. Hari, if he is (i) resident and ordinarily resident in India, (ii) resident but not ordinarily resident in India, or (iii) non-resident in India for the A.Y. 2007-08.

2. Discuss the meaning of the following terms under the Income-tax Act, 1961-

- (i) Due date [for filing return of income];
- (ii) Infrastructure capital company;
- (iii) Marginal relief.

3. Mr. Jaideep is a lecturer in a renowned private college in Baroda. During the previous year 2006-07, he gets the following emoluments: Basic salary : Rs.1,90,000; dearness allowance : Rs.12,300 (forming part of salary) ; city compensatory allowance: Rs.3,100; children's education allowance: Rs.2,340 (Rs.65 per month for 3 children) ; house rent allowance: Rs.16,200 (rent paid: Rs.20,500) and remuneration from the Aligarh University for acting as paper setter and examiner: Rs.40,000 (expenditure incurred by Mr. Jaideep: Rs.3,400). He gets Rs.21,233 as reimbursement from the employer in respect of expenditure incurred on medical treatment of his family members from a doctor. Besides, he gets Rs.12,600 as reimbursement from the employer in respect of books and journals purchased by him for discharging his official work.

He contributes 11 per cent of his salary to recognized provident fund to which a matching contribution is made by the employer. During the year, he spends Rs.3,000 on purchase of books for teaching purposes (not being reimbursed by the employer). Besides, he makes, an expenditure of Rs.6,000 on maintaining car for going to the college and pays Rs.16,000 as insurance premium on own life insurance policy (sum assured: Rs.50,000). Determine the total income and tax liability of Mr. Jaideep for the assessment year 2007-08.

4. State with reasons whether the following statements are true or false [A.Y. 2007-08] -

- (a) Anonymous donations received by a trust established wholly for religious purposes is chargeable to tax @ 30%.
- (b) Investment in bonds of NABARD, within 6 months from the date of transfer of long-term capital asset, qualifies for exemption under section 54EC.
- (c) It is not necessary for an assessee claiming exemption under section 10B to file return on or before due date for the purpose of claim of such exemption.
- (d) There is no time limit for making an application for grant of exemption under section 10(23C)(via) by a hospital.

5. Ganesh owns a house in Bangalore. During the previous year 2006-07, 2/3rd portion of the house was self-occupied and 1/3rd portion was let out for residential purposes at a rent of Rs.8,000 p.m. Municipal value of the property is Rs.3,00,000 p.a., fair rent is Rs.2,70,000 p.a. and standard rent is Rs.3,30,000. He paid municipal taxes @10% of municipal value during the year. A loan of Rs.30 lakhs was taken by him during the year 2005 for purchase of the property. Interest on loan

paid during the previous year 2006-07 was Rs.1,20,000. Compute Ganesh's income from house property for the A.Y. 2007-08.

6. Discuss the tax treatment of the following income:
 - (a) Arrears of rent and unrealised rent
 - (b) Composite rent
7. The Central Government acquired a house property owned by Lakshman on February 2, 1993. This property was purchased on May 15, 1978 for Rs.92,000 (cost of improvement incurred during 1985-86: Rs.40,000 and fair market value of the property on April 1, 1981 was Rs.1,32,000). The Government awards Rs.6,00,000 as compensation out of which Rs.2,00,000 is received on May 4, 2006 and Rs.4,00,000 is received on March 30, 2007. Lakshman incurred expenditure of Rs.8,000 for getting the compensation fixed. Lakshman filed an appeal, being aggrieved by the award. The Bombay High Court, as per order dated 30.9.2007 enhanced the compensation from Rs.6 lakhs to Rs.10 lakhs (legal expenditure incurred in Court proceedings: Rs.25,000). Lakshman receives the additional compensation of Rs.4 lakhs on March 7, 2010. Compute his income chargeable under the head "Capital gains". [Cost Inflation Index (CII): F.Y.2006-07: 519, F.Y.1992-93: 223, F.Y.1985-86:133]
8. Write short notes on –
 - (a) Allowability of expenses incurred in relation to exempt income
 - (b) Foregoing of salary and surrender of salary
 - (c) Zero Coupon Bonds
 - (d) Due dates for payment of advance tax
9. State with reasons whether the following statements are true or false [A.Y. 2007-08] -
 - (a) A consultancy firm cannot be appointed as a tax return preparer.
 - (b) Deduction under section 80P cannot be claimed by any co-operative bank.
 - (c) Interest income of an infrastructure capital fund from investments in approved eligible infrastructure projects is exempt under section 10(23G).
 - (d) Constituency allowance received by Members of State Legislature is exempt from tax.
10. The total income of Mrs. Poorna computed for the A.Y.2007-08 is Rs.3,50,000, which includes the following:

Particulars	Rs.
Long-term capital gains	70,000
Winnings from lotteries	30,000
Short-term capital gains covered by Sec. 111A	40,000

Agricultural income earned by her was Rs.75,000. Compute the tax payable by Mrs.Poorna for the A.Y.2007-08.
11. Explain the correctness or otherwise of the following statements:
 - (a) Long term capital loss can be set-off against short-term capital gains arising in that year.
 - (b) Business loss can be set-off against salary income arising in that year.
12. Explain the tax treatment of capital gains arising –
 - (a) On account of slump sale under section 50B
 - (b) On sale of equity shares of a company, if such transaction is chargeable to securities transaction tax
13. M/s Raghu & Co., a sole proprietary concern is converted into a company, ABC Ltd. with effect from December 1, 2006. The written down value of assets as on April 1, 2006 is as follows:

Items	Rate of Depreciation	WDV as on 1st April, 06
Building	10%	Rs.5,00,000
Furniture	10%	Rs.75,000
Plant and Machinery	15%	Rs.2,00,000

Further, on November 1, 2006, M/s Raghu & Co. purchased a plant for Rs.1,00,000 (rate of depreciation 15%). After conversion, the company ABC Ltd. added another plant worth Rs.85,000 (rate of depreciation 15%).

Compute the depreciation allowable to (i) M/s Raghu & Co. and (ii) ABC Ltd. for A.Y. 2007-08.

14. What is the deduction available under the Income-tax Act, 1961 in respect of the following income?

- (i) royalty income on patents
- (ii) royalty income of authors of certain books.

15. Dr. Ranjit Batra is running a clinic. His Income and Expenditure account for the year ending 31st March, 2007 is given below:

Expenditure	Amount Rs.	Income	Amount Rs.
To Staff Salary	4,30,000	By Fee Receipts	12,63,600
To Consumables	9,250	By Dividend from Indian Companies	9,500
To Medicine consumed	3,64,800	By Winning from Lotteries	
		Net of TDS	27,760
		(TDS Rs.12,240)	
To Depreciation	91,000	By Income-tax refund	2,750
To Administrative Expenses	1,46,000		
To Donation to Prime Minister's National Relief Fund	15,000		
To Excess of Income over Expenditure	2,47,560		
Total	<u>13,03,610</u>	Total	<u>13,03,610</u>

- (i) Depreciation in respect of all assets has been ascertained at Rs.50,000 as per Income-tax Rules.
- (ii) Medicines consumed include medicine of (cost) Rs.16,000 used for his family.
- (iii) Fee Receipts include Rs.14,000 honorarium for valuing medical examination answer books.
- (iv) He has also received Rs.80,000 on account of Agricultural Income which had not been included in the above Income and Expenditure Account.
- (v) He received Rs.6,000 per month as salary from a Rehabilitation Centre. This has not been included in the 'Fees Receipts' credited to Income and Expenditure Account.
- (vi) He has sold land in June, 2006 for Rs.6,00,000 (valuation as per stamp valuation authority Rs.8,00,000). The land was acquired by him in January, 1999 for Rs.4,50,000.
- (vii) He has paid premium of one LIC Policy Rs.12,000 (sum assured Rs.50,000).
- (viii) He has paid Rs.5,000 for purchase of lottery tickets.

From the above compute the total income and tax payable of Dr. Ranjit Batra for the A.Y.2007-08.

Cost Inflation Index: F.Y. 1998-99 – 351; F.Y. 2006-07 - 519.

16. (a) ABX & Co. temporarily supplies manpower for data entry to MN Ltd. for six months. Is such a service liable to service tax?
(b) Bonds issued by MNO Ltd. have been given 'AAA' rating by 'SIMIL' a credit rating agency. Is 'SIMIL' liable to pay any service tax for rendering such a service?
17. MN Ltd. has entered into a contract with OP Ltd. on 31.05.2006 for rendering services. The contract contains clear details of services. Consideration and service tax are charged separately. The following information is also available:

(i) Advance received in June 2006 from OP Ltd. towards all services	Rs.1,20,000
(ii) Total value of services billed to OP Ltd. in August 2006	Rs.4,20,000
(iii) Non-taxable services billed to OP Ltd.(included in (ii) above)	Rs.1,40,000

 Balance consideration for services is received in December 2006.
 - (i) How many times does the liability to pay service tax arise in such a case and when?
 - (ii) What is the service tax liability in each case?
 - (ii) What are the due dates for payment of service tax in each case?
18. Whether the valuation provisions contained in section 67 of the Finance Act, 1994 provide for a situation where the consideration for the taxable service is not wholly in terms of money? Explain.
19. Discuss the provisions relating to e-payment of service tax.
20. Discuss the merits of value added tax.

SUGGESTED ANSWERS/ HINTS

1. Computation of Gross Total Income of Mr.Hari for the A.Y.2007-08

Particulars	Resident and ordinarily resident Rs.	Resident but not ordinarily resident Rs.	Non- resident Rs.
Income received in India wherever it accrues			
Salary received in India for services rendered in Nepal	21,000	21,000	21,000
Income accrued in India wherever received			
Profit earned from business in Coimbatore	18,000	18,000	18,000
Income from profession in India but received in Italy	15,000	15,000	15,000
Income accrued and received outside India			
Property income in Spain	23,000	-	-
Profits of a business carried on in Nepal but controlled from India.	40,000	40,000	
Past untaxed profits remitted to India (not taxable since not the income of P.Y.2006-07)	-	-	-
Gross Total Income	1,17,000	94,000	54,000

2. (i) Due date [for filing return of income]

'Due date' means -

(a) 31st October of the assessment year, where the assessee is -

- (i) a company; or
- (ii) a person (other than a company) whose accounts are required to be audited under the Income-tax Act, 1961 or any other law in force; or
- (iii) a working partner of a firm whose accounts are required to be audited under the Income-tax Act, 1961 or any other law for the time being in force.

(b) 31st July of the assessment year, in the case of any other assessee.

(ii) Infrastructure capital company

As per section 2(26A), "Infrastructure capital company" means such company which makes investments by way of acquiring shares or providing long-term finance to -

(1) any enterprise or undertaking wholly engaged -

(a) in the business referred to in Section 80-IA(4) i.e. business of

- (i) developing/operating and maintaining/developing, operating and maintaining any infrastructure facility fulfilling the specified conditions
- (ii) providing telecom services, whether basic or cellular
- (iii) developing, developing and operating or maintaining and operating an industrial park or special economic zone notified by the Central Government
- (iv) generating, transmitting or distributing power or undertaking substantial renovation and modernization of the existing network of transmission or distribution lines.

(b) in the business referred to in Section 80-IAB(1) i.e. any business of developing a SEZ.

(2) an undertaking developing and building a housing project referred to in section 80-IB(10) i.e. approved before 31.3.2007 by a local authority and commences or commenced development and construction on or after 1.10.98 and completes or completed development and construction within the time specified.

(3) a project for constructing a hotel of not less than three-star category as classified by the Central Government or

(4) a project for constructing a hospital with at least 100 beds for patients

(iii) Marginal relief

In case of individuals/HUFs/AOPs/BOIs having a total income exceeding Rs.10,00,000, the additional amount of income-tax payable (together with surcharge) on the excess of income over Rs.10,00,000 should not be more than the amount of income exceeding Rs.10,00,000. This is called marginal relief.

In case an individual has a total income of Rs.10 lakhs, tax on his income would be = 10% of Rs.50,000 + 20% of Rs.1,00,000 + 30% of Rs.7,50,000 = Rs.2,50,000. Surcharge is not attracted on this tax since the total income does not exceed Rs.10 lakh.

However, if his total income is Rs.10,30,000, then tax on this income = 10% of Rs.50,000 + 20% of Rs.1,00,000 + 30% of Rs.7,80,000 = Rs.2,59,000

Add: Surcharge = Rs. 25,900 [10% of Rs.2,59,000]

Total tax plus surcharge = Rs.2,84,900

On comparing the two situations, it can be seen that for Rs.30,000 (i.e. Rs.10,30,000 – Rs.10,00,000) increase in the total income, the tax liability including surcharge has increased

by Rs.34,900 (i.e. Rs.2,84,900 – 2,50,000). In such a case, the tax payable cannot exceed Rs.2,80,000, being Rs.2,50,000 + Rs.30,000.

Therefore, tax payable = Rs.2,50,000 + Rs. 30,000 = Rs.2,80,000

Marginal relief = Rs.34,900 – Rs.30,000 = Rs.4,900

3. Computation of taxable income and tax liability of Mr. Jaideep for the A.Y. 2007-08

Particulars	Rs.	Rs.
Basic salary		1,90,000
Dearness allowance		12,300
City compensatory allowance		3,100
Education allowance:	2,340	
Less: Exempt [see Note 3]	1,560	780
House rent allowance	16,200	
Less: Exempt [see Note 1]	270	15,930
Reimbursement of medical expenditure (i.e., Rs.21,233 – Rs.15,000)		6,233
Reimbursement of expenditure on books and journals for official work (not chargeable to tax)		Nil
Gross salary		2,28,343
Less: Deductions under section 16		----
Net salary		2,28,343
Income from other sources (i.e. Rs.40,000 – Rs.3,400)		36,600
Gross total income		2,64,943
Less: Deduction under section 80C [see Note 4]		32,253
Total income		2,32,690
Tax on total income		
Income-tax		21,538
Add: Surcharge (surcharge is not applicable if total income does not exceed Rs.10 lakh)		Nil
		21,538
Add: Education cess @2%		431
Tax payable		21,969
Tax payable (rounded off)		21,970

Notes -

- House rent allowance is exempt from tax to the extent of the least of the following:
 - Rs.80,920 (being 40% of Rs. 2,02,300);
 - Rs.16,200 (being the amount of house rent allowance);
 - Rs. 270 [being the excess of rent, paid over 10% of salary, i.e., Rs. 20,500 – 10% of (Rs. 1,90,000 + Rs. 12,300)]
- Expenditure on books and maintenance of car is application of income and is not deductible.

3. Education allowance for children is not chargeable to tax up to Rs.100 per child per month for a maximum of 2 children. Therefore, in this case, the amount not chargeable to tax is Rs.65 per month for 2 children, i.e., Rs.1,560.
4. Deduction under section 80C is computed as under :

Contribution to statutory provident fund [i.e., 11% of (Rs.1,90,000 + Rs.12,300)]	Rs. 22,253
Insurance premium (maximum: 20% of sum assured i.e. 20% of 50,000)	<u>Rs. 10,000</u>
Total deduction	<u>Rs. 32,253</u>
4. (a) False – Section 115BBC, which imposes tax@30% on anonymous donations received by charitable trusts and institutions, does not apply to anonymous donations received by a trust or institution created or established wholly for religious purposes.
- (b) False – Investment in bonds of NHA and RECL alone qualify for exemption under section 54EC. Investment in bonds of NABARD no longer qualifies for exemption under section 54EC.
- (c) False – The Finance Act, 2006 has made filing of return on or before the due date mandatory for claiming exemption under section 10B.
- (d) False – The Finance Act, 2006 has specified the time limit in respect of such applications made on or after 1.6.2006. Such applications have to be filed in the previous year for which the exemption is sought.
5. There are two units of the house. Unit I with 2/3rd area is used by Ganesh for self-occupation throughout the year and no benefit is derived from that unit, hence it will be treated as self-occupied and its annual value will be nil. Unit 2 with 1/3rd area is let-out through out the previous year and its annual value has to be determined as per section 23(1).

Computation of Income from house property of Mr. Ganesh for A.Y. 2007-08

Particulars	Amount in rupees
Unit I (2/3 rd area – self-occupied)	
Annual Value	Nil
Less: Deduction u/s 24(b)	
2/3 rd of Rs.1,20,000	80,000
Income from Unit I (self-occupied)	<u>-80,000</u>
Unit II (1/3 rd area – let out)	
Computation of Gross Annual Value (GAV)	
Step I – Compute Annual Letting Value (ALV)	
ALV = Higher of Municipal Value (MV) and Fair Rent (FR), restricted to Standard Rent (SR). However, in this case, SR of Rs.1,10,000 (1/3 rd of Rs.3,30,000) is more than the higher of MV of Rs.1,00,000 (1/3 rd of Rs.3,00,000) and FR of Rs.90,000 (1/3 rd of Rs.2,70,000). Hence the higher of MV and FR is the ALV. In this case, it is the MV.	1,00,000
Step 2 – Compute actual rent received/receivable	
8,000×12 = 96,000	96,000
Step 3 – GAV is the higher of ALV and actual rent received/receivable i.e. higher of Rs.1,00,000 and Rs.96,000	1,00,000
Gross Annual Value(GAV)	1,00,000

Less: Municipal taxes paid by the owner during the previous year relating to let-out portion

$1/3^{\text{rd}}$ of (10% of Rs.3,00,000) = $30000/3 = 10,000$ 10,000

Net Annual Value (NAV) = (1,00,000-10,000) 90,000

Less: Deductions u/s 24

(a) 30% of NAV = 30% of Rs.90,000 27,000

(b) Interest paid on borrowed capital (relating to let out portion)
 $1/3^{\text{rd}}$ of Rs.1,20,000 40,000 67,000

Income from Unit II (let-out) 23,000

Loss under the head "Income from house property" = -80,000+23,000 -57000

6. (a) Arrears of rent and unrealised rent

- (i) Unrealised rent is deducted from actual rent in determination of annual value u/s.23, subject to fulfillment of conditions under Rule 4. Subsequently, when the amount is realised it gets taxed under section 25AA in the year of receipt.
- (ii) If the assessee has increased the rent payable by the tenant and the same has been in dispute and later on the assessee receives the increase in rent as arrears, such arrears is assessable under section 25B.

Unrealised rent [Section 25AA]	Arrears of rent [Section 25B]
(a) Taxable in the hands of the assessee whether he is the owner of that property or not.	Taxable in the hands of the assessee whether he is the owner of that property or not.
(b) Taxable as income of the previous year in which he recovers the unrealised rent.	Taxable as income of the year in which he receives the arrears of rent.
(c) No deduction shall be allowed.	30% of the amount of arrears shall be allowed as deduction.
(d) Unrealised rent means the rent which has been deducted from actual rent in any previous year for determining annual value.	Arrears of rent is in respect of rent not charged to income-tax for any previous year.

(b) Composite rent

- (1) Where composite rent includes rent of building and charges for different services (lifts, security etc.), the composite rent has to be split up in the following manner -
 - (a) the sum attributable to use of property is to be assessed under section 22 as income from house property;
 - (b) the sum attributable to use of services is to be charged to tax under the head "Profits and gains of business or profession" or under the head "Income from other sources".
- (2) Where composite rent is received from letting out of building and other assets (like furniture) and the two lettings are not separable -
 - (a) If the letting out of building and other assets are not separable i.e. the other party does not accept letting out of buildings without other assets, then the rent is taxable either as business income or income from other sources;
 - (b) This is applicable even if the sum receivable for the two lettings is fixed

separately.

- (3) Where composite rent is received from letting out of buildings and other assets and the two lettings are separable –
 - (a) If building is let out along with other assets, but the two lettings are separable i.e. letting out of one is acceptable to the other party without letting out of the other, then income from letting out of building is taxable under “Income from house property”;
 - (b) Income from letting out of other assets is taxable as business income or income from other sources;
 - (c) This is applicable even if a composite rent is received by the assessee from his tenant for the two lettings.
7. In case of compulsory acquisition by the Government of India of any property under any law in force, the capital gain becomes chargeable in the year in which the compensation is first received. Similarly, enhanced compensation is taxable in the previous year of actual receipt.

Computation of Capital gains of Lakshman for the A.Y. 2007-08

Particulars	Amount (Rs.)
Gross Compensation	6,00,000
Less: Expenses on transfer	8,000
Net compensation	5,92,000
Less: Indexed cost of acquisition (Note 1)	2,94,360
Indexed cost of improvement (Note 2)	67,068
Long-term capital gain	2,30,572

Notes:

1. Indexed cost of acquisition is computed as follows:

$$\text{Rs.1,32,000} \times \frac{223^{**}}{100^{***}} = \text{Rs.2,94,360}$$

*Fair market value on April 1, 1981

** Cost inflation Index for 1992-93 i.e, the year of compulsory acquisition.

***Cost inflation index for 1981-82

2. Indexed cost of improvement is computed as follows:

$$\text{Rs.40,000} \times \frac{223^{**}}{133^{***}} = \text{Rs.67,068}$$

*Cost of improvement

** Cost inflation index of the year of compulsory acquisition (i.e., 1992-93)

***Cost inflation index of the year in which improvement took place. (i.e.,1985-86)

3. The additional compensation of Rs.4 lakhs is taxable in the A.Y.2010-11. The taxable capital gain for that year would be Rs.3,75,000 (i.e. Rs.4,00,000 – Rs.25,000). Since the indexed cost of acquisition and improvement has already been allowed as a deduction against the original compensation, no further deduction in respect of the same is allowable.
8. (a) Allowability of expenses incurred in relation to exempt income
 - (i) As per section 14A, expenditure incurred in relation to any exempt income is not allowed as a deduction while computing income under any of the five heads of income.
 - (ii) However, the Assessing Officer is not empowered to reassess under section 147 or to pass an order increasing the liability of the assessee by way of enhancing the

assessment or reducing a refund already made or otherwise increasing the liability of the assessee under section 154, for any assessment year beginning on or before 1.4.2001 i.e. for any assessment year prior to A.Y. 2002-03.

- (iii) The Assessing Officer is empowered to determine the amount of expenditure incurred in relation to such income which does not form part of total income in accordance with such method as may be prescribed.
- (iv) The method for determining expenditure in relation to exempt income is to be prescribed by the CBDT for the purpose of disallowance of such expenditure under section 14A.
- (v) Such method should be adopted by the Assessing Officer if he is not satisfied with the correctness of the claim of the assessee, having regard to the accounts of the assessee.
- (vi) Further, the Assessing Officer is empowered adopt such method, even where an assessee claims that no expenditure has been incurred by him in relation to income which does not form part of total income.

(b) Foregoing of salary and surrender of salary

Foregoing of salary: Once salary accrues, the subsequent waiver by the employee does not absolve him from liability to income-tax. Such waiver is only an application and is hence chargeable to tax.

Example: Mr. A, an employee, instructs his employer that he is not interested in receiving the salary for April 2006 and the same might be donated to a charitable institution. In this case, Mr. A cannot claim that he cannot be charged in respect of the salary for April 2006. It is only due to his instruction that the donation was made to a charitable institution by his employer. It is only an application of income. Hence, the salary for the month of April 2006 will be taxable in the hands of Mr. A. He is however, entitled to claim a deduction u/s 80G for the amount donated to the institution.

Surrender of salary : However, if an employee surrenders his salary to the Central Government u/s 2 of the Voluntary Surrender of Salaries (Exemption from Taxation) Act, 1961, the salary so surrendered would be exempt while computing his taxable income.

(c) Zero coupon bonds

- (i) The Finance Act, 2005 has rationalized the tax treatment of Zero Coupon Bonds (ZCBs) and introduced a new tax regime for the purpose. As per the new scheme, the income on transfer of a ZCB (not being held as stock-in-trade) is to be treated as capital gains.
- (ii) Section 2(48) defines a 'Zero Coupon Bond' to mean a bond issued by any infrastructure capital company or infrastructure capital fund or a public sector company on or after 1st June, 2005, in respect of which no payment and benefit is received or receivable before maturity or redemption from such issuing entity and which the Central Government may notify in this behalf.
- (iii) Section 2(42A) provides that ZCBs held for not more than 12 months would be treated as short term capital assets.
- (iv) Section 2(47)(iva) provides that maturity or redemption of a ZCB shall be treated as a transfer for the purposes of capital gains tax.
- (v) Section 36(1)(iia) provides deduction for the discount on ZCB on pro rata basis having regard to the period of life of the bond to be calculated in the manner prescribed. 'Discount' is the difference between the amount received or receivable on issue of the bond and the amount payable on maturity or redemption of the bond. 'Period of life of the bond' has been defined to mean the period commencing from the date of issue of the bond and ending on the date of the maturity or redemption.

(d) Due dates for payment of advance tax

- (1) Advance tax shall be payable by companies and other assesseees as per the following schedule of instalments:

Companies - Four instalments

Due date of instalment	Amount payable
On or before the 15th June	Not less than 15% of advance tax liability.
On or before the 15th September	Not less than 45% of advance tax liability, as reduced by the amount, if any, paid in the earlier instalment.
On or before the 15th December	Not less than 75% of advance tax liability, as reduced by the amount or amounts, if any, paid in the earlier instalment or instalments.
On or before the 15th March	The whole amount of advance tax liability as reduced by the amount or amounts, if any, paid in the earlier instalment or instalments.

Non-corporate assesseees - Three instalments

Due date of instalment	Amount payable
On or before the 15th September	Not less than 30% of advance tax liability
On or before the 15th December	Not less than 60% of advance tax liability, as reduced by the amount, if any, paid in the earlier instalment.
On or before the 15th March	The whole amount of such advance tax as reduced by the amount or amounts, if any, paid in the earlier instalment or instalments.

- (2) The last date for payment of the whole amount of advance tax is 15th March of the relevant financial year. However, any amount paid by way of advance tax on or before 31st March is also considered as advance tax paid for the financial year. Interest liability for late payment will arise in such a case.
- (3) If the last day for payment of any instalment of advance tax is a day on which the receiving bank is closed, the assessee can make the payment on the next immediately following working day, and in such cases, the mandatory interest leviable under sections 234B and 234C would not be charged.
- (4) Where advance tax is payable by virtue of the notice of demand issued under section 156 by the Assessing Officer, the whole or the appropriate part of the advance tax specified in such notice shall be payable on or before each of such due dates as fall after the date of service of notice of demand.
- (5) Where the assessee does not pay any instalment by the due date, he shall be deemed to be an assessee in default in respect of such instalment.
9. (a) True – Only individuals can be appointed as Tax Return Preparers.
- (b) False – Primary agricultural credit societies and primary co-operative agricultural and rural development banks can claim deduction under section 80P.
- (c) False – Clause (23G) of section 10 has been omitted by the Finance Act, 2006. Therefore, w.e.f. A.Y.2007-08, no such exemption would be available to an Infrastructure capital fund in respect of interest income earned from existing as well as future investments.
- (d) True – The Finance Act, 2006 has extended the exemption of constituency allowance under section 10(17) to Members of State Legislatures also. Earlier, only constituency allowance received by Members of Parliament was exempt.

10. Computation of tax payable by Mrs. Poorna for the A.Y. 2007-08

	Rs.	Rs.
Step 1		
Add Agricultural income and Non-agricultural income (Rs.75,000 + Rs.3,50,000)		4,25,000
Tax on the above income		
(i) Tax on long-term capital gain of Rs.70,000 @ 20%	14,000	
(ii) Tax on lottery income of Rs.30,000 @ 30%	9,000	
(iii) Tax on short-term capital gain u/s 111A @ 10% of Rs.40,000	4,000	
(iv) Tax on balance income of Rs.2,85,000	<u>32,000</u>	
Total tax on Rs.4,25,000		59,000
Step 2		
Add Basic exemption limit to agricultural income (Rs.1,35,000 + Rs.75,000)		2,10,000
Tax on Rs.2,10,000		13,500
Step 3		
Tax on non-agricultural income (Tax under step 1 – Tax under step 2) (Rs.59,000 – Rs.13,500)		45,500
Add: Education cess @ 2%		<u>910</u>
Tax payable by Mrs. Poorna		<u>46,410</u>

11. (a) This statement is incorrect. Long-term capital loss can be set-off only against long term capital gain arising in that year. Where such loss cannot be wholly so set off, the amount of loss not so set off can be carried forward up to 8 assessment years and set off only against long term capital gains.
- (b) This statement is incorrect. Section 71 disallows set-off of business loss against income under the head "Salaries"
12. (a) Capital gain arising on account of slump sale under section 50B
- Any profits or gains arising from the slump sale effected in the previous year shall be chargeable to income-tax as capital gains arising from the transfer of long-term capital assets and shall be deemed to be the income of the previous year in which the transfer took place.
However, any profits and gains arising from such transfer of one or more undertakings held by the assessee for not more than thirty-six months shall be deemed to be short-term capital gains.
 - The net worth of the undertaking or the division, as the case may be, shall be deemed to be the cost of acquisition and the cost of improvement for the purposes of sections 48 and 49 in relation to capital assets of such undertaking or division transferred by way of such sale. Such cost will not be indexed.
 - Every assessee in the case of slump sale shall furnish in the prescribed form along with the return of income, a report of a chartered accountant indicating the computation of net worth of the undertaking or division, as the case may be, and certifying that the net worth of the undertaking or division has been correctly arrived at in accordance with the provisions of this section.
 - "Net worth" is the aggregate value of total assets of the undertaking or division as reduced by the value of liabilities of such undertaking or division as appearing in the

books of account. However, any change in the value of assets on account of revaluation of assets shall not be considered for this purpose.

The aggregate value of total assets of such undertaking or division shall be as follows:

- (i) In the case of depreciable assets, the written down value of block of assets and
 - (ii) In the case of other assets, the book value of such assets.
- (b) Capital gains on sale of equity shares of a company, if such transaction is chargeable to securities transaction tax

Section 10(38) exempts long-term capital gain on sale of equity shares of company if such transaction is chargeable to securities transaction tax. However, such long term capital gains exempt under section 10(38) shall be taken into account in computing the book profit and income-tax payable under section 115JB in the case of a company.

In respect of short-term capital gains from such transactions, section 111A provides for a concessional rate of tax (i.e.10%).

13. In the case of conversion of sole proprietary concern into a company as per section 47(xiv), the depreciation should be first calculated for the whole year assuming that no succession had taken place. Thereafter, the depreciation should be apportioned between the sole proprietary concern and the company in the ratio of the number of days for which the assets were used by them.

Computation of depreciation allowable to M/s. Raghu & Co. for A.Y.2007-08

Particulars	Rs.	Rs.
Building		
WDV as on 1.4.2006	5,00,000	
Depreciation@10%		50,000
Furniture		
WDV as on 1.4.2006	75,000	
Depreciation@10%		7,500
Plant and Machinery		
WDV as on 1.4.2006	2,00,000	
Add: Additions during the year (purchased on 1.11.06)	1,00,000	
	<u>3,00,000</u>	
Less: Depreciation for the year		
(15% of Rs.2,00,000 + 50% of 15% of Rs.1,00,000)		37,500
(Depreciation on new machinery is restricted to 50% of eligible depreciation, since the asset is put to use for less than 180 days in that year)		
Total depreciation for the year		<u>95,000</u>
Proportionate depreciation allowable to Raghu & Co. for 244 days (i.e. 1.4.06 to 30.11.06) (i.e. $244/365 \times \text{Rs.}95,000$)		<u>63,507</u>

Computation of depreciation allowable to ABC Ltd. for A.Y.2007-08

Particulars	Rs.
(i) Depreciation on the assets on conversion Proportionately for 121 days i.e. after conversion period $121/365 \times \text{Rs.}95,000$	31,493
(ii) Depreciation @ 50% of normal rate of 15% on Rs.85,000, being the value of plant purchased after conversion, which was put to use for less than 180 days	6,375
Depreciation allowable to ABC Ltd.	<u>37,868</u>

14. (i) Deduction in respect of royalty on patents [Section 80RRB]

- (i) Section 80RRB allows deduction to a resident individual in respect of income by way of royalty of a patent registered on or after 1.4.03 up to an amount of Rs.3 lakhs.
- (ii) This deduction shall be available only to a resident individual who is registered as the true and first inventor in respect of an invention under the Patents Act, 1970, including the co-owner of the patent.
- (iii) This exemption shall be restricted to the royalty income including consideration for transfer of rights in the patent or for providing information for working or use thereof in India.
- (iv) The exemption shall not be available on any consideration for sale of product manufactured with the use of the patented process or patented article for commercial use.
- (v) In respect of any such income which is earned from sources outside India, the deduction shall be restricted to such sum as is brought to India in convertible foreign exchange within a period of 6 months or extended period as is allowed by the competent authority (Reserve Bank of India). For claiming this deduction the assessee shall be required to furnish a certificate in the prescribed form signed by the prescribed authority, alongwith the return of income.
- (vi) No deduction in respect of such income will be allowed under any other provision of the Income-tax Act.

(ii) Deduction in respect of royalty income of authors of certain books [Section 80QQB]

- (i) Under section 80QQB, deduction upto a maximum of Rs.3,00,000 is allowed to an individual resident in India in respect of income derived as author. The deduction shall be the income derived as author or Rs.3,00,000, whichever is less.
- (ii) This income may be received either by way of a lumpsum consideration for the assignment or grant of any of his interests in the copyright of any book or by way of royalties or copyright fees (whether receivable in lump sum or otherwise) in respect of such book.
- (iii) Such book should be a work of literary, artistic or scientific nature.
- (iv) This deduction shall not be available in respect of royalty income from text book for schools, guides, commentaries, newspapers, journals, pamphlets and publication of similar nature.
- (v) For the purpose of calculating the deduction under this section, the amount of eligible income (before allowing expenses attributable to such income) shall not exceed 15% of the value of the books sold during the previous year. However, this condition is not applicable where the royalty or copyright fees is receivable in lump sum in lieu of all rights of the author in the book.

- (vi) For claiming the deduction, the assessee has to furnish a certificate in the prescribed form, duly verified by the person responsible for making such payment, setting forth such particulars as may be prescribed.
- (vii) Where the assessee earns any income from any source outside India, he should bring such income into India in convertible foreign exchange within a period of six months from the end of the previous year in which such income is earned or within such further period as the competent authority may allow in this behalf for the purpose of claiming deduction under this section.

15. Computation of total income and tax liability of Dr. Ranjit Batra for the A.Y. 2007-08

Particulars	Rs.
Income from salary (Working Note – 1)	72,000
Income from business (Working Note – 2)	2,65,550
Capital Gain	
Long-term capital gains (Working Note - 3)	1,34,615
Income from other sources (Working Note – 4)	54,000
Gross Total Income	5,26,165
Less: Deduction under Chapter VI-A (Working Note – 5)	25,000
Total Income	5,01,165
Tax on total income (Working Note - 6)	99,888
Add: Education cess @ 2%	1,998
Total tax liability	1,01,886
Less: Tax deducted at source (TDS)	12,240
Tax payable	89,646

Working Notes:

1. Computation of salary income

Particulars	Rs.
Gross Salary (6,000×12)	72,000
Less: Deduction under section 16	Nil
Net Salary	72,000

2. Computation of income under the head “Profits and gains of business or profession”

Particulars	Rs.	Rs.
Net Income as per Income and Expenditure Account		2,47,560
Add: Expense disallowed:		
Depreciation (91,000 - 50,000)	41,000	
Cost of Medicine for self-use	16,000	
Donation to Prime Minister's National Relief Fund	15,000	72,000
		3,19,560
Less: Dividend from Indian companies	9,500	
Income-tax refund	2,750	
Winning from Lotteries	27,760	
Honorarium for valuing answer books	14,000	54,010
		2,65,550

3. Computation of Capital Gains

Particulars	Rs.	Rs.
Sale consideration	6,00,000	
Valuation as per Stamp Valuation Authority (Value to be taken higher of actual sale consideration or valuation adopted for stamp duty purposes as per section 50C)	8,00,000	
Consideration for the purpose of capital gain		8,00,000
Less:		
Cost of acquisition = $\frac{4,50,000 \times 519}{351}$		
		6,65,385
Long term capital gain		1,34,615

4. Computation of income under the head "Income from other sources"

Particulars	Rs.	Rs.
Dividend from Indian Companies [Exempt u/s 10(34)]		-
Honorarium for valuing answer books		14,000
Winning from Lotteries (Net)	27,760	
Add: TDS	12,240	40,000
Income from other sources		54,000
Note – As per section 58(4), no expense or deduction is allowable in respect of winnings from lotteries.		

5. Computation of deduction under Chapter VI-A

Particulars	Rs.
U/s 80C Life Insurance Premium (maximum 20% of sum assured)	10,000
U/s 80G Donation to Prime Minister's National Relief Fund	15,000
Total deduction under Chapter VI-A	25,000

6. Computation of tax on total income

Particulars	Rs.
Tax on agricultural income plus non-agricultural income i.e. tax on Rs.5,81,165, being Rs.80,000 + 5,01,165 [See Note below]	1,10,888
Less: Tax on agricultural income plus basic exemption limit i.e. tax on Rs.1,80,000, being Rs.80,000 + 1,00,000	11,000
Tax on total income	99,888

Note - Tax on Rs.5,81,165 is computed hereunder -

Particulars	Rs.
Tax on long term capital gain Rs.1,34,615 @ 20%	26,923
Tax on winnings from lotteries Rs.40,000 @ 30%	12,000
Tax on balance income of Rs.4,06,550	71,965
	1,10,888

Note - Agricultural income is exempt from tax. It is considered for rate purpose only.

16. (a) Any service provided or to be provided to a client, by a manpower recruitment or supply agency in relation to the recruitment or supply of manpower, temporarily or otherwise in any

manner is liable to service tax. Manpower recruitment or supply agency means any person engaged in providing any service, directly or indirectly, in any manner for recruitment or supply of manpower, temporarily or otherwise to a client.

Thus, in this case service provided by ABX & Co. shall be liable to service tax under the category of manpower recruitment or supply agent's services.

- (b) Any service provided or to be provided to a client, by a credit rating agency in relation to credit rating of any financial obligation, instrument or security is liable to service tax under credit rating agency' services. Credit rating agency means any person engaged in the business of credit rating of any debt obligation or of any project or programme requiring finance, whether in the form of debt or otherwise, and includes credit rating of any financial obligation, instrument or security, which has the purpose of providing a potential investor or any other person any information pertaining to the relative safety of timely payment of interest or principal.

Thus, credit rating of bonds issued by MNO Ltd. by 'SIMIL' shall be a taxable service and 'SIMIL' shall be liable to pay service tax.

17. (i) The liability to pay service tax arises twice in such a case. The liability to pay service tax arises first when the advance is received as:

- (i) the taxable service includes 'service to be provided' and
(ii) payments received, before during or after the provision of taxable services form part of the gross amount charged for the taxable services.

The liability to pay service tax arises again when the balance consideration is received. It may be noted that the liability to pay service tax arises only upon the receipt of the value of taxable services and not when the bill is raised.

- (ii) Contract contains clear break up of taxable and other services. So advance received should also be bifurcated.

- (a) Advance portion

	Rs.
Advance received in June 2006	= 1,20,000
Amount billed for taxable services	= 4,20,000 – 1,40,000
	= 2,80,000
Advance received towards taxable services	= 1,20,000 x (2,80,000/4,20,000)
	= 80,000
Service tax @ 12% (since service tax is charged separately)	= 80,000 x 12% = 9,600
Education cess @ 2%	= 9,600 x 2% = 192
Total service tax liability	= 9792

- (b) Balance portion

Balance consideration has been received in December 2006

	Rs.
Balance amount received in December 2006	= 4,20,000 – Rs.1,20,000
	= 3,00,000
Amount received towards taxable services	= 3,00,000 x (2,80,000/4,20,000)
	= 2,00,000
Service tax @ 12%	= 2,00,000 x 12% = 24,000

Education cess @ 2% = 24,000 x 2% = 480

Total service tax liability = 24,480

(iii) In case of a company, service tax for a calendar month is payable by the 5th of the month immediately following the said calendar month. Therefore, the due date for payment of service tax in respect of receipt of advance is 05.07.2006. The due date for payment of service tax in respect of receipt of balance consideration is 05.01.2007.

18. Yes, the valuation provisions contained in section 67 of the Finance Act, 1994 provide for such a situation. Clause (ii) of sub-section (1) of section 67 provides that the consideration for a taxable service is not wholly or partly in terms of money, then the value of such service shall be such amount in money, with the addition of service tax charged, is equivalent to the consideration.
19. With effect from 01.10.2006, Notification No. 27/2006-ST dated 21.09.2006 has made it compulsory for the assessee, who has paid service tax of Rs.50,00,000 or above in the preceding financial year or has already paid service tax of Rs.50,00,000 in the current financial year, to deposit the service tax liable to be paid by him electronically, through internet banking. This has been done by amending sub-rule (2) of rule 6.

Circular No. 88/06/2006 ST dated 06.11.2006 has clarified the following regarding the interpretation of qualifying amount of service tax of such Rs.50 lakh paid by the assessee:

- (i) For a person providing taxable service from more than one premises, where each such premises is separately registered with the department for payment of service tax, the criterion of Rs.50 lakh would apply to each registered premises individually, as each registered premises is separately an assessee in terms of law. Similar is the situation in the case of a person paying service tax on taxable service received by him.

However, in case of a large taxpayer (LTU), the cumulative service tax paid by all registered premises of such large taxpayer will be taken into account for satisfaction of criterion of payment of service tax amount of Rs.50 lakh.

- (ii) If a person pays service tax from a registered premises for both the taxable services provided by him and the taxable service received by him on which he is liable to pay service tax, the cumulative service tax paid, i.e., service tax paid on taxable service provided from and service tax paid on taxable service received in such registered premises would be taken into account for the purposes of satisfaction of criterion of payment of service tax amount of Rs.50 lakh.
 - (iii) Further, for the purposes of calculation of this amount of Rs.50 lakh the total service tax paid in cash plus CENVAT credit would be taken into account as service tax paid amount. Therefore, if an assessee has paid service tax of Rs.50 lakh (in preceding financial year or the current year) in cash plus CENVAT credit, such assessee, if he pays any further service tax in cash, would be required to make mandatory e-payment.
20. The merits of value added tax are:
 - (i) No tax evasion: Under VAT, credit of tax paid on purchases is allowed against the liability on the final product manufactured or sold. Therefore, unless proper records are kept in respect of various inputs, it is not possible to claim credit. Hence, suppression of purchases or production is difficult as it leads to loss of revenue.
 - (ii) Transparency: Under the VAT system, the buyer knows the tax component in the total consideration paid for purchase of material. Thus, the system ensures transparency also.
 - (iii) Neutrality: The greatest advantage of the system is that it does not interfere in the choice of decision for purchases. This is because the system has anti-cascading effect. How much value is added and at what stage it is added in the system of production/distribution is of no consequence. The system is neutral with regard to choice of production technique, as well as business organisation.
 - (iv) Certainty: VAT system is simply based on transactions. Thus there is no need of complicated definitions like sales, sales price, turnover of purchases and turnover of sales.

It is also broad-based and applicable to all sales in business leaving little room for different interpretations. Thus, this system brings certainty to a great extent.

- (v) Better accounting systems: Since the tax paid at an earlier stage is to be received back, the system promotes better accounting systems.

Amendments made by the Taxation Laws (Amendment) Act, 2006 to the Income-tax Act, 1961

The Taxation Laws (Amendment) Act, 2006 received the assent of the President on 13.7.2006. The CBDT has issued Circular No.1/2007 dated 27.4.2007, which explains the nature and effect of the amendments made by the Taxation Laws (Amendment) Act, 2006.

(1) Tax Recovery Officer to exercise or perform the powers and functions of the Assessing Officer [Section 2(44)]

- (i) Section 2(44) provides that a Tax Recovery Officer means any income-tax officer who may be authorised by the Chief Commissioner or Commissioner, by a general or special order in writing, to exercise the powers of a Tax Recovery Officer.
- (ii) This clause has been amended to enable a Tax Recovery Officer, if he is authorised by the Chief Commissioner or Commissioner, by general or special order in writing, to exercise the powers and functions which are conferred on, or assigned to, an Assessing Officer under the Income-tax Act, 1961 and which may be prescribed.

(Effective from 13.7.2006)

(2) Exemption of income of North-Eastern Development Finance Corporation Limited [Section 10(23BBF)]

- (i) A new clause (23BBF) has been inserted in section 10 to provide for exemption of any income of the North-Eastern Development Finance Corporation Limited, being a company formed and registered under the Companies Act, 1956.
- (ii) The exemption has been phased out beginning with inclusion of 20% of the total income for tax for the assessment year 2006-07, 40% for the assessment year 2007-08, 60% for the assessment year 2008-09, 80% for the assessment year 2009-10 and 100% from the assessment year 2010-11. The exemption under this clause shall be fully phased out in assessment year 2010-11 and no exemption would be available from such assessment year.

(Effective from A.Y.2006-07)

(3) Removal of the requirement of renewal of notification issued under sub-clauses (iv) and (v) of section 10(23C)

- (i) Under section 10(23C), any notification issued by the Central Government in terms of sub-clause (iv) or sub-clause (v) of the said section has, at any one time, effect for such assessment year or years, not exceeding three assessment years, as may be specified in the notification.
- (ii) In order to dispense with the requirement of periodic renewal of notifications and consequent delays, section 10(23C) has been amended to provide that the restriction of limit of effective period of notification to a maximum of three assessment years shall be applicable in respect of notifications issued by the Central Government under sub-clause (iv) or (v) before 13.7.2006, being the date on which Taxation Laws (Amendment) Bill, 2006 received the assent of the President.
- (iii) Therefore, on account of the above amendment, any notification issued by the Central Government under the said sub-clause (iv) or sub-clause (v), on or after 13.07.2006 will be valid until withdrawn and there will be no requirement on the part of the assessee to seek renewal of the same after three years.

Note – Clause (iv) exempts income of a fund or institution established for charitable purposes and notified by the Central Government and clause (v) exempts income of a trust or institution wholly for public religious purposes or wholly for public religious and charitable purposes, which may be notified by the Central Government.

- (4) Time limit for issue of notification under sub-clauses (iv) and (v) or for approval by the prescribed authority under sub-clauses (vi) and (via) of section 10(23C)
 - (i) Under section 10(23C), in respect of application made by a fund or trust or institution etc. for grant of approval or continuation thereof, there is no time limit for issue of notification under sub-clauses (iv) and (v) or for grant of approval under sub-clauses (vi) and (via) or for passing an order rejecting such application. As a result, there is considerable delay in disposing such applications.
 - (ii) In order to expedite disposal of such applications, it has now been provided that where such an application is made on or after 13.7.2006, every notification under sub-clause (iv) or sub-clause (v) shall be issued or approval under sub-clause (vi) or sub-clause (via) shall be granted or an order rejecting the application shall be passed within the period of 12 months from the end of the month in which such application was received.
- (5) Funds/Trusts/Universities/Other educational institutions or hospitals or other medical institutions referred to in sub-clauses (iv),(v),(vi) or (via) of clause (23C) of section 10 to get their accounts audited and furnish audit report
 - (i) At present, there is no requirement on the part of any fund or trust or institution or any university or other educational institution or any hospital or other medical institution referred to in sub-clauses (iv), (v), (vi) or (via) of section 10(23C) to furnish audited accounts along with the return of income.
 - (ii) It has now been provided that if the total income of any entity referred to in sub-clauses (iv), (v), (vi) and (via) of section 10(23C), without giving effect to the provisions of the said sub-clauses, exceeds the basic exemption limit in any previous year, it shall –
 - (1) get its accounts audited in respect of that year by an accountant as defined in the Explanation below sub-section (2) of section 288; and
 - (2) furnish such audit report along with the return of income for the relevant assessment year. The report must be in the prescribed form, duly signed and verified by the accountant, and must contain such particulars as may be prescribed.

(Effective from A.Y.2006-07)

- (6) Accounts of a charitable or religious trust or institution to be audited if their total income exceeds the basic exemption limit [Section 12A(b)]
 - (i) Section 12A(b) provides that for availing exemption under sections 11 and 12, the accounts of the trust or institution for the previous year should have been audited if the total income of the trust or institution as computed under the Income-tax Act, 1961, without giving effect to the provisions of section 11 and section 12, exceeds Rs.50,000 in that previous year. Such audit report should be furnished along with the return of income for the relevant assessment year in the prescribed form.
 - (ii) Rs.50,000 was the erstwhile basic exemption limit. The basic exemption limit of AOPs has been increased to Rs.1,00,000 by the Finance Act, 2005. Therefore, clause (b) of section 12A has been amended to provide for the requirement of getting the accounts audited if in the previous year the total income exceeds the basic exemption limit.

(Effective from A.Y.2006-07)

- (7) Guidelines, manner and conditions on the basis of which approval is to be granted under section 35(1)(ii) and section 35(1)(iii)
 - (i) So far, there have been no guidelines or manner or conditions in relation to grant of approval of the Central Government to a scientific research association, university, college or other

institution. This has caused undue delay in the processing of applications received for approval from such entities. There was, therefore, a need to provide the step-wise procedure to be followed by the applicants, the manner in which their applications would be processed and the conditions subject to which the approval was to be granted to a scientific research association under clause (ii) of section 35(1) and to a university, college or other institution under clause (iii) of section 35(1).

- (ii) These clauses have, therefore, been amended to lay down that the applicant scientific research association, university, college or other institution shall be approved in accordance with the guidelines, in the manner and subject to such conditions as may be prescribed. The guidelines, manner (including application Forms) and conditions have since been prescribed vide notification bearing S.O. 1856 (E) dated 30.10.2006.
- (iii) The deduction under these clauses would be available only if such association, university, college or other institution is for the time being approved in accordance with the guidelines, in the manner and subject to such conditions as may be prescribed.
- (iv) Further, it has been clarified that the deduction to which an assessee (i.e. donor) is entitled on account of payment of any sum to a scientific research association or university or college or other institution, shall not be denied merely on the ground that subsequent to payment of such sum by the assessee, the approval granted to any of the aforesaid entities is withdrawn.
- (v) Also, it has been provided that the time limit restricting the maximum effective period of a notification to 3 assessment years shall be applicable in respect of a notification issued by the Central Government under clause (ii) or clause (iii) before 13.7.2006. Consequently, any notification issued on or after 13.7.2006 shall remain in force until approval granted to such entity is withdrawn.
- (vi) In respect of an application received on or after 13.7.2006, every notification under clause (ii) or clause (iii) shall be issued or an order rejecting the application shall be passed before expiry of 12 months from the end of the month in which the application for approval was received by the Central Government.

(Effective from A.Y.2006-07)

(8) Deduction not to be denied to the donor-assessee on subsequent withdrawal of approval of specified donee entities[Section 35(2AA), 35AC & 35CCA]

- (i) It has been clarified that the deduction to which an assessee is entitled on account of payment of any sum by him to a National Laboratory, University, Indian Institute of Technology or a specified person for the approved programme [referred to in sub-section (2AA) of section 35] shall not be denied to the donor-assessee merely on the ground that after payment of such sum by him, the approval granted to any of the aforesaid donee-entities has been withdrawn.
- (ii) A similar amendment has been made in section 35AC clarifying that the deduction to which an assessee (i.e. the donor) is entitled on account of payment of any sum by him to a public sector company or a local authority or to an association or institution shall not be denied to the assessee merely on the ground that after payment of such sum by him, the approval granted to such association or institution has been withdrawn or the notification notifying the eligible project or scheme referred to in section 35AC has been withdrawn.
- (iii) A parallel amendment has been made in section 35CCA clarifying that the deduction to which an assessee is entitled on account of payment of any sum by him to an association or institution for carrying out the programme of rural development shall not be denied to the assessee merely on the ground that after payment of such sum by him, the approval granted to such programme or, as the case may be, to the association or institution has been withdrawn.

(Effective from A.Y.2006-07)

(9) Disallowance of rent and royalty paid to a resident without deduction of tax at source [Section 40(a)(ia)]

- (i) As per section 40(a)(ia), failure to deduct tax from interest, commission or brokerage, fees for professional services or fees for technical services payable to a resident or amounts payable to a resident contractor or sub-contractor, or failure to remit such tax after deduction results in disallowance of such payments in the computation of income of the payer.
- (ii) This disallowance has now been extended to payments of rent and royalty. The terms rent and royalty have also been defined. Rent has been defined to have the same meaning as in clause (i) to the Explanation to section 194-I. As per the said clause, rent means any payment, by whatever name called, under any lease, sub-lease, tenancy or any other agreement or arrangement for the use of (either separately or together) any land or building (including factory building) or land appurtenant to the building (including factory building) or machinery or plant or equipment or furniture or fittings whether or not all or any of the above are owned by the payee. Royalty has the same meaning as given in Explanation 2 to section 9(1)(vi).

(Effective from A.Y.2007-08)

(10) Disallowance of expenses for which payment above Rs.20,000 has been made otherwise than by account-payee cheque or account-payee bank draft [Section 40A]

- (i) Section 40A(3), provides for disallowance of 20% of the expenditure if payment in a sum exceeding Rs.20,000 is made, against such expenditure, otherwise than by a crossed cheque or crossed bank draft.
- (ii) Since a crossed cheque or crossed bank draft is a negotiable instrument, endorsement of the same has made it difficult to trace the final payee in many cases. This defeats the purpose of section 40A(3).
- (iii) Since an account payee cheque or account payee bank draft cannot be credited to any account other than the account of the payee, section 40A(3) has been amended to require payments over Rs.20,000 to be made by an account payee cheque drawn on a bank or account payee bank draft.
- (iv) Consequential amendment has been made in section 40A(4) to provide that where any payment has been made by an account payee cheque or account payee bank draft to escape disallowance under section 40A(3), then no person shall be allowed to raise a plea in any suit or other proceeding on the ground that the payment was not made in cash or any other manner.

(Effective from 13.7.2006)

(11) Cash gifts received in excess of Rs.50,000 on or after 1.4.2006 to be taxed under section 56(2)(vi)

- (i) Section 56(2)(v) provides that any sum of money exceeding Rs.25,000 received without consideration by an individual or a Hindu undivided family on or after 1.9.2004 from any person, is chargeable to income-tax under the head "Income from other sources".
- (ii) However, in order to avoid hardship in genuine cases, certain sums of money received have been exempted -
 - (a) any sum received from any relative; or
 - (b) any sum received on the occasion of the marriage of the individual; or
 - (c) any sum received under a will or by way of inheritance; or
 - (d) any sum received in contemplation of death of the payer.
- (iii) It is now provided that the above provisions of clause (v) shall be applicable in respect of any sum of money, exceeding the specified amount, received on or after 1.9.2004 but before 1.4.2006.

- (iv) Further, a new clause (vi) has been inserted in section 56(2) w.e.f. A.Y. 2007-08 to provide that where any sum of money is received without consideration on or after 1.4.2006 by an individual or a Hindu undivided family from any person or persons and the aggregate value of all such sums received during the previous year exceeds Rs.50,000/-, the whole of the aggregate value of such sum shall be included in the total income of such individual or Hindu undivided family under the head "Income from other sources".
- (v) However, certain sums of money received have been exempted i.e. any sum of money received -
- from any relative; or
 - on the occasion of the marriage of the individual; or
 - under a will or by way of inheritance; or
 - in contemplation of death of the payer; or
 - from any local authority as defined in the Explanation to section 10(20) i.e. Panchayat, Municipality, Cantonment Board or Municipal Committee and District Board, legally entitled to, or entrusted by the Government with, the control or management of a Municipal or local fund; or
 - from any fund or foundation or university or other educational institution or hospital or other medical institution or any trust or institution referred to in clause (23C) of section 10; or
 - from any trust or institution registered under section 12AA.
- (vi) For the purposes of the new clause (vi), the term relative has been defined in the Explanation thereto to mean the -
- spouse of the individual;
 - brother or sister of the individual;
 - brother or sister of the spouse of the individual;
 - brother or sister of either of the parents of the individual;
 - any lineal ascendant or descendent of the individual;
 - any lineal ascendant or descendent of the spouse of the individual;
 - spouse of the person referred to in clauses (ii) to (vi).
- (12) Deduction not to be denied to the donor-assessee on subsequent withdrawal of approval of the donee- association, university etc. [Section 80GGA]
- (i) Section 80GGA has been amended by inserting an Explanation each after clause (aa) in respect of the entities covered in clause (a) and clause (aa), clause (b) and clause (bb) of sub-section (2).

Clause	Entity covered	Purpose
(a)	University, college or other institution	Scientific research
(aa)	University, college or other institution	Social science and statistical research
(b)	Association or institution	Rural development, training of persons for implementing rural development programme.
(bb)	Public sector company or a local authority or an association or institution approved by the National Committee.	Carrying out eligible project or scheme referred to in section 35AC.

- (ii) These Explanations clarify that the deduction to which an assessee is entitled in respect of any sum paid to a scientific research association, university, college or other institution or to an association or institution for carrying out the programme of rural development, or to a public sector company, or to a local authority or to an association or institution for carrying out the eligible project or scheme referred to in section 35AC, respectively, shall not be denied merely on the ground that subsequent to the payment of such sum by the assessee the approval granted or, as the case may be, the notification has been withdrawn.

(Effective from A.Y.2006-07)

(13) Specified universities, colleges and other institutions compulsorily required to file their return of income [Section 139(4C) & (4D)]

- (i) Clause (e) of section 139(4C) makes it mandatory for every –
 - (a) fund or institution referred to in section 10(23C)(iv); or
 - (b) trust or institution referred to in section 10(23C)(v); or
 - (c) any university or other educational institution referred to in section 10(23C)(vi); or
 - (d) any hospital or other medical institution referred to in section 10(23C)(via)
 to file a return of income for the previous year, if the total income in respect of which such entities are assessable, without giving effect to the provisions of section 10, exceeds the basic exemption limit. Such return of income should be in the prescribed form and verified in the prescribed manner and should contain such other particulars as may be prescribed. All the provisions of the Income-tax Act shall, to the extent relevant, apply as if it were a return required to be furnished under section 139(1).
- (ii) The scope of the aforementioned provisions of clause (e) of section 139(4C) has been expanded to require any university or other educational institution referred to in section 10(23C)(iiiad) and any hospital or other institution referred to in section 10(23C)(iii ae) to furnish their return of income for the previous year, if the total income in respect of which such entities are assessable, without giving effect to the provisions of section 10, exceeds the basic exemption limit.
- (iii) Sub-section (4D) has been inserted in section 139 to require every university, college or other institution referred to in clause (ii) and clause (iii) of section 35(1), which is not required to furnish its return of income or loss under any other provision of section 139, to furnish its return in respect of its income or loss in every previous year. All the provisions of the Income-tax Act, 1961 shall apply to such return as if it were a return under section 139(1).

(Effective from A.Y.2006-07)

(14) The scope of tax deduction at source on rent under section 194-I expanded

- (i) Under section 194-I, tax is required to be deducted at source on payment of rent.
- (ii) The term rent has been defined in the Explanation to the said section to, inter alia, mean payment for the use of any land or building (including factory building) together with furniture, fittings and the land appurtenant thereto, whether or not such building is owned by the payee.
- (iii) This definition of rent has been amended to provide that the provisions of the said section are applicable whether the items are rented separately or together. Rent of machinery, plant and equipment are also included for the purposes of deduction of tax at source under section 194-I.

(Effective from 13.7.2006)

(15) Expansion of the scope of tax deduction at source on fees for professional or technical services under section 194J.

- (i) Under section 194J(1), tax is required to be deducted at source on payment to a resident, of a sum exceeding Rs.20,000, by way of fees for professional services or fees for technical services at the rate of 5% of such sum.
- (ii) Section 194J(1) has been amended to include within its fold, payment of royalty and non-compete fees referred to in section 28(va). The term royalty has been defined in the Explanation to the amended section and shall have same meaning as in Explanation 2 to section 9(1)(vi).
- (iii) The threshold limit for deduction of tax in respect of each of these payments is Rs.20,000.
(Effective from 13.7.2006)

IMPORTANT NOTIFICATIONS / CIRCULARS ISSUED BETWEEN 1.5.06 and 30.4.07

Students may note that the Study Material for Taxation contains all the relevant amendments made by the Finance Act, 2006. Further, Circulars/Notifications issued up to 30.04.2006 have also been incorporated therein. The following are the amendments which have been made between 1.05.2006 and 30.04.2007. It may carefully be noted that for the students appearing in November 2007 examination, the amendments made by Notifications, Circulars etc. up to 30.04.2007, as detailed hereunder, are relevant.

A. INCOME TAX

I NOTIFICATIONS

(1) Notification No.270/2006 dated 19.9.2006 – Cost Inflation Index for F.Y.2006-07

The Central Government has, vide notification no.270/2006 dated 19.9.2006 specified the cost inflation index for the financial year 2006-07. The CII for F.Y. 2006-07 is 519.

S. No.	Financial Year	Cost Inflation Index
1.	1981-82	100
2.	1982-83	109
3.	1983-84	116
4.	1984-85	125
5.	1985-86	133
6.	1986-87	140
7.	1987-88	150
8.	1988-89	161
9.	1989-90	172
10.	1990-91	182
11.	1991-92	199
12.	1992-93	223
13.	1993-94	244
14.	1994-95	259
15.	1995-96	281
16.	1996-97	305

17.	1997-98	331
18.	1998-99	351
19.	1999-2000	389
20.	2000-01	406
21.	2001-02	426
22.	2002-03	447
23.	2003-04	463
24.	2004-05	480
25.	2005-06	497
26.	2006-07	519

[Notification no.270/2006 dated 19.9.2006]

- (2) Notification No.127/2006 dated 1.6.2006 – Notified plan for deduction in respect of annuity plan of LIC

Notification No.	Date	In exercise of powers conferred by	Details
127/2006	1.6.2006	Section 80C(2)(xii)	Jeevan Akshay-III Plan of the LIC of India, as filed by the LIC with the IRDA, as the annuity plan of the LIC for the purposes of section 80C(2)(xii)

- (3) Notification Nos. 142 & 143/2006 dated 29.6.2006 – Notified Bonds for the purpose of exemption of capital gains under section 54EC

The Central Government has notified bonds of National Highways Authority of India (NHAI) and Rural Electrification Corporation Limited (RECL), to be issued during the financial year 2006-07, redeemable after three years, as "long-term specified asset" for the purpose of exemption under section 54EC i.e. capital gains would be exempt to the extent of investment in these notified bonds.

The CBDT has, vide Order F.No.142/09/2006-TPL, dated 30.6.2006, extended the limitation period of six months for making investment under section 54EC of capital gains arising from the transfer of a long-term capital asset to –

- (i) 30.9.2006, in case of persons where the long-term capital asset was transferred between 29.9.2005 and 31.12.2005;
- (ii) 31.12.2006, in case of persons where the long-term capital asset was transferred between 1.1.2006 and 30.6.2006.

- (4) Notification No 380/2006, dated 22.12.2006 – Restriction of maximum investment to Rs.50 lakhs for the purpose of section 54EC

The Central Government has, vide this notification, notified the bonds for an amount of Rs.3,500 crores (redeemable after three years), to be issued by the Rural Electrification Corporation Limited (RECL) during the period between 26.12.2006 to 31.3.2007, as 'long-term specified asset' for the purposes of section 54EC subject to the following conditions, namely:-

- (i) a person who has made an investment of an amount aggregating more than Rs.50 lakh in the bonds of NHAI or RECL notified as long-term specified asset by the Central Government

in the Official Gazette for the purposes of section 54EC vide notifications dated 29.6.2006, shall not be allotted any bonds notified as long-term specified asset by this notification;

- (ii) a person who is not covered by clause (i) above, shall not be allotted the bonds notified as long-term specified asset by this notification, for any amount which exceeds the amount of Rs.50 lakh as reduced by the aggregate of the investment, if any, made by him in the bonds of NHAI and RECL notified as long-term specified asset by the Central Government for the purposes of section 54EC of vide notifications dated 29.6.2006.

For example, if one Mr.X has been allotted bonds of NHAI or RECL (vide the above-referred notifications dated 29.6.2006), aggregating to say Rs.52 lakh, he shall not be allotted any further bonds by this notification. If one Mr.Y has been allotted bonds of NHAI or RECL(vide the above-referred notifications dated 29.6.2006) to the extent of say, Rs.30 lakhs, then the allotment of bonds of RECL vide this notification cannot exceed Rs.20 lakhs.

- (5) Notification No.187/2006 dated 20.7.2006 – Conditions to be fulfilled by a public facility to be eligible to be notified as an infrastructure facility in accordance with the provisions of clause (d) of the Explanation to section 36(1)(viii)

Rule 6ABAA has been inserted in the Income-tax Rules, 1962 which specifies the conditions to be fulfilled by a public facility to be eligible to be notified as an infrastructure facility in accordance with the provisions of clause (d) of the Explanation to clause (viii) of sub-section (1) of section 36. The conditions specified therein are -

- (a) it is owned by a company registered in India or by a consortium of such companies or by an authority or a board or a corporation or any other body established or constituted under any Central or State Act;
- (b) it has entered into an agreement with the Central Government or a State Government or a local authority or any other statutory body for (i) developing or (ii) operating and maintaining or (iii) developing, operating and maintaining a new infrastructure facility similar in nature to an infrastructure facility referred to in the Explanation to section 80-IA(4)(i);
- (c) it has started or starts operating and maintaining such infrastructure facility on or after 1st April, 1995.

- (6) Notification No. 188/2006, dated 20.7.2006 – Notification of public facilities as infrastructure facility for the purpose of section 36(1)(viii)

The following public facilities have been notified by the CBDT as infrastructure facility for purposes of section 36(1)(viii)-

- (1) Inland Container Depot and Container Freight Station notified under the Customs Act, 1962
- (2) Mass Rapid Transit system
- (3) Light Rail Transit system
- (4) Expressways
- (5) Intra-urban or semi-urban roads like ring roads or urban by-passes or flyovers
- (6) Bus and truck terminals
- (7) Subways
- (8) Road dividers
- (9) Bulk Handling Terminals which are developed or maintained or operated for development of rail system
- (10) Multilevel Computerised Car Parking.

- (7) Notification No. 267/2006 dated 14.9.2006 – Notification of approved investment under section 11(5)

A new clause (v) has been inserted in rule 17C of the Income-tax Rules, 1962 so as to include as an approved investment under section 11(5), investment by a recognized Stock Exchange, in the equity shares of a company promoted by it to acquire the membership rights of other stock exchanges, where at least 51% of the paid-up share capital is held by the Stock Exchange and the balance is held by its members. The amendment is made effective retrospectively from 26th November, 1999.

- (8) Notification No.314/2006, dated 9.11.2006 – Rule 6DD to provide the cases and circumstances in which payment in a sum exceeding Rs.20,000 may be made otherwise than by an account payee cheque drawn on a bank or by account payee bank draft.

Section 40A(3), provides for disallowance of 20% of the expenditure if payment in a sum exceeding Rs.20,000 is made, against such expenditure, otherwise than by a crossed cheque or crossed bank draft. The Taxation Laws (Amendment) Act, 2006 has amended section 40A(3) to require payments over Rs.20,000 to be made by an account payee cheque drawn on a bank or account payee bank draft.

Accordingly, the CBDT has amended Rule 6DD to replace the words “a crossed cheque” and “a crossed bank draft” with “an account payee cheque” and “account payee bank draft” respectively in the heading and content. Therefore, Rule 6DD would henceforth provide the cases and circumstances in which payment in a sum exceeding Rs.20,000 may be made otherwise than by an account payee cheque drawn on a bank or by account payee bank draft.

- (9) Notification No. 357/2006, dated 24.11.2006 - Restriction regarding effective period of approval for the purposes of section 10(23C)(vi) and (via) removed

The CBDT has, vide this notification, amended Rule 2CA, which provides the guidelines for approval under sub-clauses (vi) and (via) of section 10(23C). Sub-rule (3) of Rule 2CA, which restricts the effective period of approval of such university or other educational institution or hospital or other medical institution [covered under sub-clauses (vi)/(via)] by the CBDT or Chief Commissioner or Director General to a maximum of three assessment years, has now been amended to provide that such restrictions would apply only in respect of approvals granted before 1.12.2006.

- (10) Notification No. 358/2006, dated 28.11.2006 – Tax Return Preparer Scheme, 2006

The CBDT has, in exercise of the powers conferred by section 139B(1) of the Income-tax Act, 1961, framed the Tax Return Preparer Scheme, 2006, which came into force from 1.12.2006.

As per this scheme, Tax Return Preparer means any individual who has been issued a Tax Return Preparer Certificate and a unique identification number by the Partner Organisation to carry on the profession of preparing the returns of income in accordance with the provisions of this Scheme. However, the following persons are not eligible to act as a Tax Return Preparer -

- (i) any person referred to in clause (ii) or clause (iii) or clause (iv) of sub-section (2) of section 288, namely, any officer of a Scheduled Bank with which the assessee maintains a current account or has other regular dealings, any legal practitioner who is entitled to practice in any civil court in India and an accountant.
- (ii) any person who is in employment and income from which is chargeable to income-tax under the head salaries

Educational qualification for Tax Return Preparers

Any individual who holds a graduation degree from a recognized Indian University in the fields of Business Administration or Management or Commerce or Economics or Law or Mathematics or Statistics shall be eligible to act as Tax Return Preparer.

(11) Notifications 369-374/2006 dated 15.12.2006 – Notification of Zero Coupon Bonds

Section 2(48) defining zero coupon bonds requires that such bonds should be notified by the Central Government. Accordingly, the Central Government has, vide Notifications 369-374 dated 15.12.2006, specified the following bonds to be issued on or before 31.3.2009 by HUDCO, SIDBI, NABARD and IDFC as zero coupon bonds –

- (i) 10 year zero coupon bonds of HUDCO, SIDBI, NABARD and IDFC
- (ii) 15 year zero coupon bonds of HUDCO.

(12) Notification No.1/2007 dated 4.1.2007 – Exemption of interest on tax free municipal bonds issued by Nagpur Municipal Corporation

Section 10(15)(vii) exempts interest on bonds issued by a local authority, if such bonds are specified by the Central Government by notification in the Official Gazette. Accordingly, the Central Government has, vide this notification, specified Tax Free Municipal Bonds issued by Nagpur Municipal Corporation during the F.Y.2006-07, interest from which would be exempt under section 10(15)(vii). However, such benefit would be admissible only if the holder of such bonds registers his or her name and the holding with the Nagpur Municipal Corporation.

(13) Notification No.2/2007 dated 11.1.2007 – Subscription to public deposit scheme of HUDCO to qualify for deduction under section 80C

Deduction under section 80C is available, inter-alia, in respect of any sum paid or deposited in the previous year by the assessee as subscription to any such deposit scheme of a public sector company which is engaged in providing long-term finance for construction or purchase of houses in India for residential purposes, as the Central Government may, by notification in the Official Gazette, specify in this behalf. This has been provided in clause (xvi)(a) of section 80C(2). Accordingly, the Central Government has, vide this notification, specified the Public Deposit Scheme of Housing and Urban Development Corporation Ltd., subscription to which would qualify for deduction under section 80C.

(14) Notification No. 61/2007, dated 28.2.2007 – Investment by way of acquiring equity shares of an incubatee by an incubator to qualify as an approved investment under section 11(5)

Section 11(5) of the Income-tax Act, 1961 specifies the permitted modes of investment by a charitable trust or institution for claiming exemption under section 11. Clause (xii) of section 11(5) specifies that investment can be made by any other mode as may be prescribed. Rule 17C of the Income-tax Rules specifies such other modes of investment. The CBDT has, through the Income-tax (Second Amendment) Rules, 2007, which came into force on 1.3.2007, inserted new clause (vi) in Rule 17C. Clause (vi) specifies another mode of investment, namely, investment by way of acquiring equity shares of an incubatee by an incubator. Incubatee shall mean such incubatee as may be notified by the Government of India in the Ministry of Science and Technology and incubator shall mean such Technology Business Incubator or Science and Technology Entrepreneurship Park as may be notified by the Government of India in the Ministry of Science and Technology.

(15) Notification No. 67/2007, dated 8.3.2007 – Exemption of interest on Tax Free Municipal Bonds issued by Ahmedabad Municipal Corporation

Sub-clause (vii) of section 10(15) exempts interest on bonds issued by a local authority, if such bonds are specified by the Central Government by notification in the Official Gazette. Accordingly, the Central Government has, vide this notification, specified Tax Free Municipal Bonds issued by Ahmedabad Municipal Corporation during the financial year 2006-07, interest from which would be exempt under section 10(15)(vii). However, this benefit shall be admissible only if the holder of such bonds registers his or her name and the holding with the said Corporation.

II CIRCULARS

- (1) Circular No.7/2006 dated 17.7.2006 - Clarification regarding deduction of interest under section 43B in view of clarificatory amendments to section 43B through the Finance Act, 2006

Section 43B was amended by the Finance Act, 2006 inserting therein two clarificatory Explanations, namely, Explanation 3C and Explanation 3D. Both the Explanations clarify that any sum payable by the assessee as interest on any loan or borrowing or advance shall be allowed as deduction if such interest has been actually paid and any interest which has been converted into a loan or borrowing or advance but has not been actually paid shall not be allowed as deduction in the computation of income. The clarificatory explanations only reiterate the rationale that conversion of interest into a loan or borrowing or advance does not amount to actual payment.

The manner in which the converted interest will be allowed as deduction has been clarified in this circular. The unpaid interest, whenever actually paid to the bank or financial institution, will be in the nature of revenue expenditure deserving deduction in the computation of income. Therefore, irrespective of the nomenclature, the deduction will be allowed in the previous year in which the converted interest is actually paid.

- (2) Circular No. 8/2006, dated 6.10.2006 - Clarification regarding the meaning of the expression "the produce of animal husbandry" used in sub-clause (ii) of clause (f) of rule 6DD of the Income-tax Rules, 1962

The CBDT had, vide Circular No. 4/2006, dated 29th March, 2006 on the above subject, clarified that the expression "the produce of animal husbandry" used under rule 6DD(f)(ii) would include livestock and meat and in a case where payment exceeding rupees twenty thousand is made to a producer of the products of animal husbandry (including livestock, meat, hides and skins) otherwise than by a crossed cheque drawn on a bank or by a crossed bank draft for the purchase of such produce, no disallowance would be attracted under section 40A(3) read with rule 6DD. It was further clarified that the above exception will not be available in respect of payment for the purchase of livestock, meat, hides and skins from a person who is not proved to be the producer of these goods and is only a trader, broker or any other middleman by whatever name called.

This circular (Circular No.8/2006) gives a clarification as to -

- (i) who are the producers of livestock and meat and
- (ii) the evidence required to be furnished in this regard by the persons making the payments.

The CBDT is of the view that any person, by whatever name called, who buys animals from the farmers, slaughters them and then sells the raw meat carcasses to the meat processing factories or to the traders/retail outlets would be considered as a producer of livestock and meat.

The benefit of rule 6DD of the Income-tax Rules, 1952 shall be available to the person referred to in the above para subject to furnishing of the following :

- (i) A declaration from the person receiving the payment that he is a producer of meat;
- (ii) A confirmation that the payment, otherwise than by an account payee cheque or account payee bank draft, was made on his insistence; and
- (iii) A further confirmation from a veterinary doctor certifying that the person specified in the certificate is a producer of meat and that slaughtering was done under his supervision.

- (3) Circular No.10/2006 dated 16.10.06 - Clarification regarding filing of return of income by the coffee growers being individuals covered by Rule 7B of the Income tax Rules, 1962

The CBDT, vide Circular No. 10/2003 dated 24th December, 2003, had provided that an individual deriving income from growing and curing of coffee, who is not covered by the first proviso to section 139(1), would not be required to file a return of his income if his income from growing and curing of coffee was Rs.2 lakhs or less. The Finance Act, 2005 has subsequently raised the exemption limit for individual taxpayers from Rs.50,000 to Rs.1 lakh from the A.Y. 2006-07. The exemption limit in the case of an individual, being a woman resident in India and below the age of

65 years, has been increased to Rs.1,35,000. In the case of an individual, being a resident in India, who is of the age of 65 or more at any time during the previous year, the exemption limit has been raised to Rs.1,85,000. Therefore, the CBDT has reconsidered the matter of filing of return by the individual coffee growers in order to provide further relief to them and it is clarified that:

- (i) An individual deriving income from growing and curing of coffee would not be required to file his return, if the aggregate of 25% of his income from growing and curing of coffee and income under all other sources liable to tax in accordance with the provisions of this Act, is equal to or less than the exemption limit (1st slab of the rates of Income-tax) prescribed for individual tax payers in the First Schedule of the Finance Act of the relevant year.
 - (ii) An individual deriving income from growing, curing, roasting and grounding of coffee with or without mixing chicory or other flavouring ingredients, would not be required to file the return of income if the aggregate of 40% of his income from growing, curing, roasting and grounding of coffee with or without mixing chicory or other flavouring ingredients and income under all other sources liable to tax in accordance with the provisions of this Act, is equal to or less than the exemption limit (1st slab of rates of Income tax) prescribed in the First Schedule of the Finance Act of the relevant year.
- (4) Circular No.13/2006, dated 13.12.2006 - Applicability of TDS provisions of section 194C on contract for fabrication of article or thing as per specifications given by the assessee

The CBDT has clarified the issue regarding the applicability of TDS provisions of section 194C on contract for fabrication of article or thing as per specifications given by the assessee. The CBDT observed that before taking a decision on the applicability of TDS under section 194C on a contract, it would have to be examined whether the contract in question is a contract for work or a contract for sale.

The CBDT clarified that the provisions of section 194C would apply in respect of a contract for supply of any article or thing as per prescribed specifications only if it is a contract for work and not a contract for sale as per the principles in this regard laid down in para 7(vi) of Circular No. 681, dated 8-3-1994. Para 7(vi) of Circular No.681 clarifies that where the property in the article or thing so fabricated passes from the fabricator-contractor to the assessee only after such article or thing is delivered to the assessee, such contract would be a contract of sale and would, therefore, fall outside the purview of section 194C.

B. SERVICE TAX

Exemptions

1. Notification No. 7/2006 ST dated 01.03.2006 exempting taxable services, provided or to be provided to any person, by Reserve Bank of India, from the whole of service tax leviable thereon has been superseded by Notification No. 22/2006 ST dated 31.05.2006. This notification exempts the following taxable services from the whole of the service tax leviable thereon:
 - (i) taxable services provided or to be provided to any person, by the Reserve Bank of India;
 - (ii) taxable services provided or to be provided by any person, to the Reserve Bank of India when the service tax for such services is liable to be paid by the Reserve Bank of India under sub-section (2) of section 68 of the said Finance Act read with rule 2 of the Service Tax Rules, 1994;
 - (iii) taxable services received in India from outside India by the Reserve Bank of India under section 66A of the Finance Act, 1994.
2. Following amendments have been made in Notification No. 1/2006 ST dated 01.03.2006 which grants partial exemptions from service tax to certain specified services:
 - (i) Abatement granted to erection, commissioning or installation service under a contract for supplying a plant, machinery or equipment and erection, commissioning or installation thereof has been extended to structures as well. This amendment is in view of the

modification made in the definition of erection, commissioning or installation service by the Finance Act, 2006 [Notification No. 21/2006 ST dated 23.05.2006].

- (ii) Business auxiliary service, in relation to production or processing of parts and accessories used in the manufacture of cycles, cycle rickshaws and hand-operated sewing machines, for, or on behalf of, the client has been granted an abatement of 30% from the gross amount charged for such service. This abatement is available when the gross amount charged from the client is inclusive of the cost of inputs and input services, whether or not supplied by the client.

However, the exemption is not available in cases where –

- (i) the CENVAT credit of duty paid on inputs or capital goods or the CENVAT credit of service tax on input services, used for providing such taxable service has been taken under the provisions of the CENVAT Credit Rules, 2004; or
 - (ii) the service provider has availed the benefit under Notification No. 12/2003-ST, dated 20.06.2003 [Notification No. 23/2006 ST dated 02.06.2006].
3. Notification No. 25/2006 ST dated 13.07.2006 has exempted the taxable services provided or to be provided by a practising chartered accountant, a practising cost accountant and a practising company secretary, in their professional capacity, to a client, relating to representing the client before any statutory authority in the course of proceedings initiated under any law for the time being in force, by way of issue of notice, from the whole of service tax leviable thereon.
 4. Notification No. 31/2006 ST dated 11.12.2006 has exempted the taxable service provided by an insurer, carrying on general insurance business, to a policy holder for the insurance of sheep, from the whole of service tax leviable thereon. However, the exemption contained in this notification shall be valid only upto 31.12.2009.
 5. Notification No. 4/2007 ST dated 01.03.2007 has amended Notification No.6/2005 ST dated 01.03.2005 in order to raise the exemption limit in case of small service providers from the current Rs.4,00,000 to Rs.8,00,000 with effect from 01.04.2007. Thus, taxable services of aggregate value not exceeding Rs.8,00,000 in any financial year would be exempt from service tax if the aggregate value of taxable services rendered by a provider of taxable service from one or more premises does not exceed Rs.8,00,000 in the preceding financial year.
 6. Consequent upon the increase in the threshold exemption limit from Rs.4 lakh to Rs.8 lakh, the limit for obtaining service tax registration has also been increased from Rs.3 lakh to Rs.7 lakh by amending Notification Nos. 26/2005-ST and No.27/2005-ST, both dated 07.06.05 vide Notification Nos. 5, 6 & 7/2007 ST dated 01.03.07. This amendment is effective from 01.04.2007.
 7. Notification No. 8/2007 ST dated 01.03.2007 has exempted the taxable services provided or to be provided by a resident welfare association under section 65(105)(zzze) to its members from whole of the service tax leviable thereon. However, the exemption is subject to the condition that the total consideration received from an individual member by the said association for providing the said services does not exceed Rs.3,000 per month. This service would otherwise be taxable under the category of membership of clubs or association.

It has been clarified vide F.No.137/68/2007-CX.4 dated 08.05.2007 that a resident welfare association registered as a co-operative society with Registrar of Co-operative Societies is eligible to avail exemption from levy of service tax vide Notification No.8/2007 ST dated 01.03.2007 provided the following conditions are satisfied, namely:-

- (i) The exemption is available for the services specified under section 65(105)(zzze) of the Finance Act, 1994 and provided or to be provided by the association to its members.
- (ii) The sole criterion for membership of the resident welfare association is the residential status of a person in a residential complex or locality i.e., membership of the association is restricted only to the residents of the complex or locality.

- (iii) The value of total consideration received from an individual member by the association for providing the services should not exceed Rs.3,000/- per month.
8. With effect from 01.04.2007, Notification No. 9/2007 ST dated 01.03.2007 exempts all taxable services provided or to be provided by Technology Business Incubators (TBI)/Science and Technology Entrepreneurship Parks (STEP) recognized by National Science and Technology Entrepreneurship Board (NSTEDB) of the Department of Science & Technology from the whole of service tax leviable thereon. The exemption contained in this notification shall be subject to the following conditions:
- (i) the STEP or the TBI, who intends to avail the exemption, shall furnish the requisite information containing the details of the incubator along with the information received from each incubatee to the concerned Assistant/Deputy Commissioner of Central Excise before availing the exemption; and
 - (ii) the STEP or the TBI shall thereafter furnish the information in the formats mentioned above in the same manner before the 30th day of June of each financial year.
9. With effect from 01.04.2007, Notification No. 10/2007 ST dated 01.03.2007 has exempted taxable services provided or to be provided by an (incubatee) entrepreneur located within the premises of a TBI/STEP recognized by the NSTEDB of the Department of Science and Technology Government of India from the whole of the service tax leviable thereon subject to the following conditions:-
- (i) the entrepreneur enters into an agreement with the TBI or the STEP as an incubatee, to enable himself to develop and produce hi-tech and innovative products; and
 - (ii) the total business turnover of such entrepreneur does not exceed Rs.50 lakh during the previous financial year.

Further, the exemption contained in this notification shall apply for a period of 3 years from the date on which such entrepreneur enters into an agreement with the TBI or the STEP.

The exemption for taxable services under this notification shall not be available for any taxable services provided or to be provided immediately after the total business turnover of the entrepreneur exceeds Rs.50 lakh during a given financial year.

10. Notification No. 11/2007 ST dated 01.03.2007 has exempted the technical testing and analysis services of new drugs, including vaccines and herbal remedies, on human participants so as to ascertain the safety and efficacy of such drugs by a Clinical Research Organization (CRO) (approved to conduct clinical trials by the Drugs Controller General of India) from the whole of service tax leviable thereon.
11. Notification No. 12/2007 ST dated 01.03.2007 has exempted the taxable services, provided or to be provided, under an agreement, by any person to other person who has the right to authorise any person to exhibit cinematograph film, from the whole of the service tax leviable thereon subject to the following conditions:
- (i) that the service provided or to be provided is in relation to the delivery of the content of the cinematograph film; and
 - (ii) that the content of such film, being in digitized form, after its encryption, is transmitted directly to a cinema theatre for exhibition through the use of satellite, microwave or terrestrial communication line and not by any physical means including CD and DVD.

Explanation. – For the purposes of this notification, -

- (a) “cinematograph film” means a film certified under section 5A of the Cinematograph Act, 1952;
- (b) “cinema theatre” means a place which is licenced under Part III of the Cinematograph Act, 1952, or under any other law for the time being in force in a state for the exhibition of a cinematograph film.

12. During the period between 01.04.2000 and 04.02.2004 there was a practice of not levying service tax on services provided by a tour operator providing services in relation to transport of passengers (other than services provided in relation to package tour) operating under a contract carriage permit issued by the appropriate transport authority. However, such services were liable to service tax under section 65(105)(n) of the Finance Act.

Therefore, in exercise of the powers conferred by section 11C of the Central Excise Act 1944 read with section 83 of the Finance Act, the Central Government has directed vide Notification No.15/2007 ST dated 04.04.2007 that service tax on 60% of the gross amount charged by such tour operators shall not be required to be paid in respect of such taxable service on which the service tax was not being levied during the aforesaid period in accordance with the said practice.

Other Amendments

13. Following amendments have been made in the Service Tax Rules, 1994:

- (i) With effect from 01.04.2004, rule 2(1)(d)(vii) has been amended to the effect that service tax is required to be paid under reverse charge method, i.e., where service tax is to be paid by service receiver, in relation to sponsorship service only if the recipient of service is located in India. Therefore, if the recipient of sponsorship service is located outside India, service tax would be required to be paid by the service provider and not by the recipient [Notification No. 1/2007 ST dated 01.03.2007]

Accordingly, similar amendment has also been made in Notification No. 36/2004 ST dated 31.12.2004 vide Notification No. 3/2007 ST dated 01.03.2007.

- (ii) With effect from 01.10.2006, Notification No. 27/2006-ST dated 21.09.2006 has made it compulsory for the assessee, who has paid service tax of Rs.50,00,000 or above in the preceding financial year or has already paid service tax of Rs.50,00,000 in the current financial year, to deposit the service tax liable to be paid by him electronically, through internet banking. This has been done by amending sub-rule (2) of rule 6.

Circular No. 88/06/2006 ST dated 06.11.2006 has clarified the following regarding the interpretation of qualifying amount of service tax of such Rs.50 lakh paid by the assessee:

- (i) For a person providing taxable service from more than one premises, where each such premises is separately registered with the department for payment of service tax, the criterion of Rs.50 lakh would apply to each registered premises individually, as each registered premises is separately an assessee in terms of law. Similar is the situation in the case of a person paying service tax on taxable service received by him.

However, in case of a Large Taxpayer (LTU), the cumulative service tax paid by all registered premises of such Large Taxpayer will be taken into account for satisfaction of criterion of payment of service tax amount of Rs 50 lakh.

- (ii) If a person pays service tax from a registered premises for both the taxable services provided by him and the taxable service received by him on which he is liable to pay service tax, the cumulative service tax paid, i.e., service tax paid on taxable service provided from and service tax paid on taxable service received in such registered premises would be taken into account for the purposes of satisfaction of criterion of payment of service tax amount of Rs.50 lakh.
- (iii) Further, for the purposes of calculation of this amount of Rs.50 lakh the total service tax paid by cash plus CENVAT credit would be taken into account as service tax paid amount. Therefore, if an assessee has paid service tax of Rs.50 lakh (in preceding financial year or the current year) in cash plus CENVAT credit, such assessee, if he pays any further service tax in cash, would be required to make mandatory e-payment.
- (iii) Sub-rule (4A) of rule 6 has been substituted and sub-rule 4B inserted to provide for self-adjustment of excess service tax paid, subject to specified conditions. So far, self-adjustment of excess service tax paid was available only to the assesseees who opted for

centralised registration. Further, the adjustment was allowed only on account of delayed receipt of details of payment from the branch offices.

With effect from 01.03.2007, self-adjustment of excess service tax paid has been extended to all the assessees. However, such an adjustment would be subject to the following conditions:

- (i) Self-adjustment of excess credit would not be allowed in case of reasons involving interpretation of law, taxability, classification, valuation or applicability of any exemption notification.
 - (ii) Excess amount paid and proposed to be adjusted should not exceed Rs.50,000 for the relevant month or quarter. However, in case of assessees opting for centralized registration excess amount can be adjusted without any monetary limit provided the excess amount paid is on account of delayed receipt of details of payments from branch offices.
 - (iii) Adjustment can be made only in the succeeding month or quarter.
 - (iv) The details of self-adjustment should be intimated to the Superintendent of Central Excise within a period of 15 days from the date of such adjustment [Notification No. 1/2007 ST dated 01.03.2007].
- (iv) Rule 7B has been inserted vide Notification No. 1/2007 ST dated 01.03.2007 to allow an assessee to submit a revised return, in Form ST-3, in triplicate, to correct a mistake or omission, within a period of 60 days from the date of submission of the return under rule 7. It has been clarified that where an assessee submits a revised return, the 'relevant date' for the purpose of recovery of service tax, if any, under section 73 of the Act shall be the date of submission of such revised return.

14. Circular No. 83/1/2006 ST dated 04.07.2006 has clarified that services such as transfer of money through money orders, operation of savings accounts, issue of postal orders provided by the Department of Posts are not liable to service tax under banking and other financial services. Banking and other financial services are defined under section 65(12). Such services provided to a customer by a banking company or a financial institution including a non-banking financial company or any other body corporate or any other person to a customer are liable to service tax under section 65(105)(zm). The expression 'any other person' appearing in section 65(105)(zm) is to be read ejusdem generis with the preceding words. The expression 'other financial services' appearing under section 65(12)(a)(ix) is a residuary entry and includes those services which are normally rendered by banks or financial institutions.

Hence, banking and other financial services provided by a banking company or a financial institution or a non-banking financial company or any other service provider similar to a bank or a financial institution are liable to service tax under section 65(105)(zm) of the Finance Act, 1994. Department of Posts is not similar to a bank or a financial institution and hence does not fall within the category of any other similar service provider.

Note: The Finance Act, 2007 has substituted the words "or any other person" in the definition of banking and other financial services provided under section 65(12) with the words "or commercial concern". This amendment has come into effect from 11.05.2007.

15. Circular No. 84/2/2006 ST dated 19.09.2006 has clarified that any club or association that enjoys exemption under the provisions of Income Tax Act on the ground of being a public charitable institution does not automatically get excluded from levy of service tax under section 65(105)(zzze) read with section 65(25a) of the Finance Act, 1994 as exemption under the Income Tax Act on the ground of being a public charitable institution is of no consequence to levy of service tax. Levy of service tax is entirely governed by the provisions contained in the Finance Act, 1994 and the rules made thereunder.
16. Circular No. 85/3/2006 ST dated 17.10.2006 has clarified following issues in respect of levy of service tax on international journey by aircraft:

Sl.No.	Issue	Clarification
1.	In the case of international journey commencing from an Indian airport involving stopover/transfer at intermediate airports outside India before reaching the destination (say Mumbai-Dubai-London-New York), whether service tax would be leviable on the value indicated in the ticket or on the value attributable to the first sector (Mumbai-Dubai)?	International journey is from Mumbai to New York. Stopover/transfer at intermediate airports is incidental or part of the main journey. Stop over/transfer at intermediate airports outside India is of no relevance or consequence for levy of service tax under section 65(105)(zzzo) read with section 66 of the Finance Act, 1994. Service tax is leviable on the total value of the ticket representing the consideration of a single composite service.
2.	In case the international journey also includes travel in a domestic sector as part of the international journey (say Delhi-Mumbai-London), whether service tax is leviable excluding the value attributable to the domestic sector or on the total value of the ticket treating the domestic sector as integral part of international journey?	Service tax is leviable on the total value of the ticket.
3.	In the case of round trip/return ticket, whether service tax is leviable on the total value of the ticket or only on half the value of the ticket?	Service tax is leviable on the total value of the ticket.
4.	In the case of journey commencing from an airport outside India and completed at an airport outside India but including a sector wherein the passenger disembarks and subsequently embarks at an Indian airport as part of international journey (say Sydney-Mumbai-Dubai-Singapore-Sydney), whether service tax is leviable for Mumbai-Dubai sector only or on the total value of the ticket?	Service tax is not leviable in such cases.
5.	Whether ticket issued outside India for an international journey commencing from India (say Delhi-London) is leviable to service tax?	Service tax is payable by the service provider for the taxable service provided. Place of purchase/issue of ticket is of no relevance or consequence to determine the levy of service tax under section 65(105)(zzzo) read with section 66 of the Finance Act, 1994.

17. Circular No. 86/4/2006 ST dated 01.11.2006 has clarified that institutes like IITs or IIMs are not liable to pay service tax prior to 1.5.2006 under the category of "manpower recruitment or supply service". As regards the period after 1.5.2006, decision should be taken after taking into account all material facts on case to case basis.
18. Circular No. 87/05/2006 ST dated 06.11.2006 has clarified following issues relating to authorized motor vehicle dealers and service stations:

Sl.No.	Issue	Clarification
1.(a)	Whether the mark-up (profit) on the spare parts sold by a service station during the servicing of vehicles is liable to payment of service tax?	As regards, the issue relating to sale of spare parts and consumables, Notification No. 12/2003 ST dated 20.06.2003, exempts service tax to the extent of value of the goods and materials sold by the service provider to the service recipient, if documentary proof of such sale exists and no credit of excise duty paid on such spares or consumables have been taken.
1.(b)	Whether exemption can be claimed on the cost of consumables that get consumed during the course of providing service?	It may, however be pertinent to note that for availing such exemption, the goods must be sold and consequently, they must be available (whether independently or as a part used for repair of a vehicle) for sale. In other words, the exemption would not be available to such consumables which have been consumed during the process of providing service and are not available for sale.
2.	Whether 'free services' given by the authorized dealers (for which they are reimbursed by the vehicle manufacturers) are subjected to service tax?	As regards 'free servicing' (where the customer does not pay any charges) of the motor vehicles, normally the service charges are reimbursed by the vehicle manufacturers, who promises such a facility to attract customer. As the law does not in any way restricts the levy of service tax only on the service charges received from the recipient of the service, therefore, such reimbursements are subject to service tax.
3.	Whether the commission received by the automobile dealers from Banks/Non Banking Financial Companies (NBFC), for introducing the customers seeking finances/loans to such banks/NBFCs is subjected to service tax? Further, in case part of these incentives are passed on by the dealers to the customers, whether tax would be leviable only on that part of incentive, which is retained by the dealers or whether it would be on full amount?	In some cases, the automobile dealers help the buyers of the vehicles for arranging the finances. For this, they have a tie-up with Banks/Non-banking Finance Companies. The customers are advised by the dealers to approach such financial companies for taking loans. The automobile dealers get commission from such financial companies for directing the customers to the latter. By this activity, the automobile dealers 'promote or market the services provided by their customer (i.e., the financial institution) and are therefore covered under "taxable business auxiliary service". The tax is payable on the gross commission received by the automobile dealer. In some cases, the dealers share part of their commission with their customers to attract them. However, this is an independent transaction between the automobile dealer and the purchaser of the vehicle and does not involve the service rendered by the automobile dealer to the finance company. Therefore, the tax payable by the dealer would be on the gross amount received from the financial company and not on the balance amount, i.e., after excluding the amount that he passes on to the customer.

4.	Whether service tax is chargeable on the amounts received for servicing/repair of the commercial vehicles?	As regards 'authorized service stations', the taxable service means any service provided or to be provided to a customer by an authorized service station in relation to any service, repair, reconditioning or restoration of motor cars, light motor vehicles or two wheeled motor vehicles, in any manner. Further, a 'light motor vehicle' means any motor vehicle constructed or adapted to carry more than 6 messengers, but not more than 12 passengers, excluding driver. Similarly, as per the 'Motor Vehicle Act', a 'motor car means any motor vehicle other than a transport vehicle, omnibus, road-roller, tractor, motor cycle or invalid carriage'. In other words, servicing, repair, reconditioning or restoration of specified types of vehicles (whether they are used for commercial purposes or not) fall under the category of taxable services. However, servicing of vehicles like trucks is not within the ambit of service tax.
----	--	---

19. Circular No. 89/7/2006 ST dated 18.12.2006 has clarified that service tax shall not be leviable on fee collected by Public Authorities while performing statutory functions/duties under the provisions of a law. However, if such authority performs a service, which is not in the nature of statutory activity and the same is undertaken for a consideration not in the nature of statutory fee/levy, then in such cases, service tax would be leviable, if the activity undertaken falls within the ambit of a taxable service.

A number of sovereign/public authorities (i.e. an agency constituted/set up by government) perform certain functions/duties, which are statutory in nature. These functions are performed in terms of specific responsibility assigned to them under the law in force. For example, the Regional Reference Standards Laboratories (RRSL) undertake verification, approval and calibration of weighing and measuring instruments; the Regional Transport Officer (RTO) issues fitness certificate to the vehicles; the Directorate of Boilers inspects and issues certificate for boilers; or Explosive Department inspects and issues certificate for petroleum storage tank, LPG/CNG tank in terms of provisions of the relevant laws. Fee as prescribed is charged and the same is ultimately deposited into the Government Treasury.

The Circular explains that the activities performed by the sovereign/public authorities under the provision of law are in the nature of statutory obligations which are to be fulfilled in accordance with law. The fee collected by them for performing such activities is in the nature of compulsory levy as per the provisions of the relevant statute, and it is deposited into the Government treasury. Such activity is purely in public interest and it is undertaken as mandatory and statutory function. These are not in the nature of service to any particular individual for any consideration. Therefore, such an activity performed by a sovereign/public authority under the provisions of law does not constitute provision of taxable service to a person and, therefore, no service tax is leviable on such activities.

20. Circular No. 91/2/2007 ST dated 12.03.2007 has been issued regarding levy of service tax on interconnect usage charges (IUC) on interconnection service provided by one telecom operator to another. The interconnection service is provided by one telegraph authority to another to enable the telephone subscribers of these telegraph authorities to connect with each other. Interconnection in technical terms means the commercial and technical arrangements under which service providers connect their equipment, networks, and services to enable their customers to have access to the customers, services, and networks of other service providers. For providing interconnection, the telegraph authority collects interconnect usage charges (IUC).

The Finance Act, 2007 has incorporated a new definition of 'telecommunication service' vide clause (104) of section 65 of the Finance Act, 1994 and IUC has been specifically incorporated in the definition of 'telecommunication service' to make it a taxable service. Further, any service provided or to be provided, to any person, by a telegraph authority in relation to 'telecommunication service' has been made taxable. This amendment has come into effect from 01.06.2007. Therefore, after this amendment comes into effect, service tax would be applicable to IUC charges. It has therefore been clarified that for the period prior to the date when the amended definition of "telecommunication service" comes into effect, service tax is not applicable to IUC.

21. Service tax is leviable on foreign exchange (forex) broking service under the category of 'banking and other financial service'. In terms of the provisions of the Finance Act, 1994, foreign exchange broker includes a money changer (authorized dealer of foreign exchange). Circular No. 92/3/2007 ST dated 12.03.2007 has been issued to answer the question as to whether the service provided by a money changer in relation to exchange of foreign currency is a forex broking service for applicability of service tax levy under 'banking and other financial services'.

It has been noted that 'money changing' and 'foreign exchange broking' are two distinct activities. Money changing is an activity of sale and purchase of foreign exchange at the prevalent market rates. On the other hand, foreign exchange broking is the activity performed as an intermediary, on a commission/brokerage basis, for facilitating the clients who wish to buy or sell foreign exchange. The foreign exchange broker providing foreign exchange broking service does not hold title to the foreign exchange. Accordingly, Board is of the view that service tax is not leviable on money changing per se, as such activity does not fall under the category of foreign exchange broking.

PAPER – 6A : INFORMATION TECHNOLOGY

QUESTIONS

1. Define the following terms briefly:

(a) Server	(b) Seek Time	(c) Bubble Memory
(d) Boot Record	(e) Microprocessor	(f) Voice Recognition
(g) Internet Explorer	(h) String	(i) Linked List
(j) Full Duplex	(k) Gopher Server	(l) URL
(m) ISP	(n) Web Browser	(o) Bit or Binary
(p) CRT	(q) MIS	(r) Redundancy Check
(s) Spooling	(t) Router.	
2. Differentiate between the following:
 - (a) Floppy Diskettes & Magnetic Diskettes
 - (b) First Generation & Second Generation
 - (c) OCR & OMR
 - (d) Dot Matrix & Daisywheel Printer
 - (e) Multitasking & Multiprocessing
 - (f) Primary Key & Secondary Key
 - (g) Network Database & Relational Database
 - (h) Star Topology & Bus Topology
 - (i) Serial & Parallel Transmission
 - (j) Database Server & Application Server
 - (k) Smart Card & Credit Card.
3. Convert the following from one number system to another number system along with the working notes:
 - (1) $(1596)_{10} = ()_2$
 - (2) $(10011011)_2 = ()_{10}$
 - (3) $(252.50)_{10} = ()_2$
 - (4) $(101110.101)_2 = ()_{10}$
4.
 - (a) Describe different categories of the computer system that is used at every level of system operation in brief.
 - (b) What is CPU? Briefly describes the each features of CPU.
 - (c) What is computer? Describe the advantages and disadvantages of the computer system in brief.
5.
 - (a) Define various types of storage devices in brief.
 - (b) What is Optical Laser Disk? How the data is stored on Optical Laser Disk?
6.
 - (a) Describe various types of computer terminal and their uses in brief.
 - (b) Define different generation of languages in brief.
7.
 - (a) What is language translators? Describe in brief each of the language translators.
 - (b) Describe the component used to create the expert system in brief.
8.
 - (a) Describe Index-Sequential file organization in brief.

- (b) Describe the various views of database architecture.
 - (c) Describe the various database components in brief.
9. (a) What are the different issues related with the backup and recovery of the databases.
- (b) Differentiate between data mining and warehousing? Describe the component used in data warehousing in brief.
10. (a) Define computer network? What are the benefits of using computer network? Describe in brief.
- (b) Describe the different components of a network in brief.
- (c) How an e-commerce can be classified? Describe in brief with example.
11. (a) What are different factors that determine good CRM program? Describe in brief.
- (b) What is EDI? Explain? Explain how EDI works.
- (c) What are different tools available to protect the system against intrusion? Describe in brief.
12. (a) What are the advantages and disadvantages of using flow chart in programming.
- (b) What are the different components of decision table? Describe in brief.
- (c) What are the advantages and disadvantages of using decision tables in brief?
13. A company has 2,500 employees. Their salaries are stored as J(s), 1, 2, ---- 2500. The salaries are divided in four categories as under :
- (i) Less than Rs. 1,000 (ii) Rs. 1,000 to Rs.2,000
 - (iii) Rs. 2,001 to Rs. 5,000 (iv) Above Rs. 5,000.
- Draw a flow chart for finding the percentage of the employees in each category.
14. A shop owner allows credit facility to his customers if they satisfy any one of the following conditions:
- 1. Holding the present job for more than 3 years and residing in the same place for more than 5 years.
 - 2. Monthly Salary exceeds Rs. 1500 and holding the present job for more than 3 years.
 - 3. Residing in the same place for more than 5 years and monthly salary exceeds Rs. 1500.
- The facility is rejected for all other customers. Prepare a decision table of the above procedure.
15. Write short notes on the following:
- (a) Mother Board
 - (b) Buses
 - (c) Digital Video Disk (DVD)
 - (d) Touch Screen
 - (e) Non-impact Printer
 - (f) Application Software
 - (g) Chat Server
 - (h) Extranet
 - (i) Mobile Commerce
 - (j) Bluetooth
 - (k) EFT.

SUGGESTED ANSWERS/HINTS

1. (a) **Server:** A server is a computer system that provides services to other computing systems called clients over a network. The typical server is a computer system that operates continuously on a network and waits for requests for services from other computers on the network.
- (b) **Seek Time:** This is the time required to position a movable read-write head over the recording track to be used. If the read-write head is fixed, this time will be zero.
- (c) **Bubble Memory:** Bubble memory is composed of small magnetic domains (bubbles) formed on a thin single-crystal film of synthetic garnet. These magnetic bubbles, which are actually magnetically charged cylinders, only a few thousands of a centimeter in size, can be moved across the garnet film by electric charges. The presence or absence of a bubble can be used to indicate whether a bit is "on" or "off".
- (d) **Boot Record:** It is a small program that runs when the computer is started. This program determines whether the disk has the basic components of DOS or Windows that are necessary to run the operating system successfully. If it determines that the required files are present and the disk has a valid format, it transfers control to one of the operating system programs that continues the process of starting up.
- (e) **Microprocessor:** A microprocessor is a programmable digital electronic component that incorporates the functions of a central processing unit (CPU) on a single semiconducting integrated circuit (IC). The microprocessor was born by reducing the word size of the CPU from 32 bits to 4 bits, so that the transistors of its logic circuits would fit onto a single part.
- (f) **Voice Recognition:** Translating voice to text is a capability known as voice recognition (or speech recognition). With it, one can speak to the computer rather than having to type. The user can also control the computer with oral commands, such as "shut down" or "print status report". Voice recognition software takes the smallest individual sounds in a language, called phonemes, and translates them into text or commands.
- (g) **Internet Explorer:** Windows Internet Explorer commonly abbreviated to IE, is a series of proprietary graphical web browsers developed by Microsoft and is used to browse the information on WWW.
- (h) **Strings:** A data type consisting of a sequence of contiguous characters that represent the characters themselves rather than their numeric values. A String can include letters, numbers, spaces, and punctuation. The String data type can store fixed-length strings ranging in length from 0 to approximately 63K characters and dynamic strings ranging in length from 0 to approximately 2 billion characters. The codes for String characters range from 0–255.
- (i) **Linked List:** A linked List is a group of data records arranged in an order, which is based on embedded pointers. An embedded pointer is a special data field that links one record to another by referring to the other record. The field is embedded in the first record, i.e. it is a data element within the record.
- (j) **Full Duplex:** A full duplex connection can simultaneously transmit and receive data between two stations. A full duplex line is faster, since it avoids the delay that occur in a half-duplex mode each time the direction of transmission is changed.
- (k) **Gopher Server:** Gopher is an Internet application that uses multiple Gopher servers to locate images, applications, and files stored on various servers on the Internet. Gopher offers menu choices to prompt users for information that interests them, and then establishes the necessary network connections to obtain the resource.
- (l) **URL:** It is the standard way to give the address of any resources on the Internet that is part of the World Wide Web(WWW).
<http://www.icai.org/IT.htm>

- (m) ISP: An Internet service provider is a business or organization that provides to consumers access to the Internet and related services. ISP makes Internet access available on a local telephone call and helps user avoid direct long distance or international calls to connect to computers in other parts of the world.
 - (n) Web Browser: A Web browser is a software application that enables a user to display and interact with text, images, and other information typically located on a Web page at a website on the World Wide Web or a local area network. Text and images on a Web page can contain hyperlinks to other Web pages at the same or different website. Web browsers allow a user to quickly and easily access information provided on many Web pages at many websites by traversing these links.
 - (o) Bit: The binary symbol 0 or 1 is commonly called a bit, which is a contraction of the term binary digit. In the binary system, all numbers are expressed as groups of binary digits (bits), that is, as groups of 0s and 1s. The values are based on the right to left position of digits in a binary number, using the power of 2 as position values. For example, consider the binary number 10100.
 - (p) CRT: Cathode Ray Tube (CRT) use a large tube-type element that looks like the picture tube in a standard TV set. Inside the tube is a gun that lights up the phosphorescent pixels on the screen surface. Glass envelope containing an electron gun (a source of electrons) and a fluorescent screen, usually with internal or external means to accelerate and deflect the electrons. When electrons strike the fluorescent screen, light is emitted.
 - (q) MIS: Management Information Systems (MIS) is a general name covering the application of people, technologies, and procedures collectively called information systems to solve business problems. MIS are distinct from regular information systems in that they are used to analyze other information systems applied in operational activities in the organisation.
 - (r) Redundancy Check: A check based on the transfer of more bits or characters than the minimum number required to express the message itself, the added bits or characters having been inserted systematically for checking purposes. The most common type of redundancy check is parity check.
 - (s) Spooling: Computer processing technique under which input and output files originating on and destined for slow-speed devices are written to high-speed storage devices prior to and following processing. Thus, processing can take place at high speeds while input and output can be handled separately at relatively slow speeds.
 - (t) Router: A special purpose computer (or software package) that handles the connection between 2 or more networks. Routers spend all their time looking at the destination addresses of the packets passing through them and deciding which route to send them on.
2. (a) Floppy Diskettes consisted of a circular piece of thin plastic material, approximately eight inches in diameter, that was coated with an oxide material. The circular piece of plastic, called a disk, is enclosed in a square protective jacket with a cut out so that the magnetic surface is exposed. When inserted in the appropriate hardware device, the disk is rotated inside the protective jacket, allowing keyed data or data from main computer memory to be stored on the rotating disk. Once data is stored on the disk, it can be read from the disk into main computer. This medium for input and auxiliary storage is called a floppy disk or diskette. The surfaces of diskettes (or disks/tapes discussed later) are coated with millions of tiny iron particles so that the data can be stored on them. Each of these particles can act as a magnet, taking on a magnetic field when subjected to an electromagnet. The read/write heads of a diskette drive (or a hard disk/ tape drive) contain electromagnets, which generate magnetic field in the iron on the storage medium as the head passes over the diskette (or disk or tape)

Magnetic Diskettes stores the data in tracks that are divided into sectors. Physically, however, hard disks look quite different from diskettes. A hard disk is a stack of one or more metal platters that spin on one spindle like a stack of rigid diskettes. Each platter is coated with iron oxides, and the entire unit is encased in a sealed chamber. Unlike diskettes, where

the disk and drive are separate, the hard disk and drive is a single unit. Hard disks have become the primary storage device for PCs because they are convenient and cost-efficient. A high-density 3.5-inch diskette can store 1.44 MB of data. Hard disks, in contrast, range in capacity from about 20 GB onward. Two important physical differences between hard disks and diskettes account for the differences in performance. First, hard disks are sealed in a vacuum chamber, and second, the hard disk consists of a rigid metal platter (usually aluminum), rather than flexible Mylar.

- (b) First Generation electrical computers employed vacuum tubes. These computers were large in size and required air conditioning. The input and output units were the punched card reader and the card punches. Because of the inherently slow speed of these input/output units, the power of the CPU was subjugated to their speed. IBM-650 was however, the most popular first generation computer and was introduced in 1950 with magnetic drum memory and punched cards for input and output.

Second Generation computers employed transistors and other solid state devices. Their circuits were smaller than the vacuum tubes, and generated less heat. Hence the second-generation computers required less power, were faster and more reliable. IBM 1401 was the most popular second-generation computer. They employed magnetic tape as the input/output media. Second generation computers successfully displaced the unit record equipment on cost benefit grounds in many installations.

For more details of the above points, students are advised to refer to the study material Chapter-1.1.

- (c) OCR employs a set of printing characters with standard font that can be read by both human and machine readers. The machine reading is done by light scanning techniques in which each character is illuminated by a light source and the reflected image of the character is analysed in terms of the light-dark pattern produced. Optical character readers can read upper and lower case letters, numerics and certain special characters from handwritten, typed and printed paper documents. The specific characters that can be read and whether the characters must be handwritten, typed or printed depends upon the type of OCR being used.

OMR are commonly used for scoring tests. It is marked by the person taking the test, and can be read by the optical mark page reader. The optical mark reader when on-line to the computer systems, can read up to 2,000 documents per hour. Seemingly this rate is slow but the fact that transcription has been eliminated, the overall time is less than those of the conventional file media. OMR can also be used for such applications as order writing, payroll, inventory control, insurance, questionnaires, etc.

For more details of the above points, students are advised to refer to the study material Chapter-1.2.

- (d) Dot Matrix Printers are small, compact printers offered high speed, relatively low price and greater programmability for graphics and illustrations due to their method of character generation. They became the standard printers for many minicomputers and nearly all microcomputers and, consequently, were also used for word processing requirements. Dot matrix printers utilise wire needles or pins which strike the ribbon against the paper in the pattern necessary to produce each character image. The printing head is a matrix block which consists of rows and columns of holes through which pins appear. The characters being printed are formed by activating the printing head so that certain pins appear through the holes to form a pattern which resembles each character. The pins are formed into the shape of the character to be printed, then pressed against an inked ribbon and the pattern printed on the paper. The character, whether they are letters, numbers or grammatical symbols are printed as a series of dots which merge together to form the character.

Daisywheel printers works in a similar manner to an electronic typewriter. The major difference is that they use a new type of printing element called a 'daisywheel'. This is a molded metal or plastic disc-shaped printing element which looks very much like a daisy -

hence the name. It is about 65 m.m. in diameter and has a number of stalks or petals which radiate from a central core. On the end of each stalk is a type character set in a similar manner to the keys as on a typewriter. This type of printer works by rotating the print element until the required character is positioned in front of the sheet of paper at the point where it will be printed. A small hammer hits the back of the stalk forcing that character against an inked ribbon and through onto the paper.

- (e) Multi-tasking refers to the operating system's ability to execute two or more of a single user's tasks concurrently. Multitasking operating systems are often contrasted with single-user operating systems. Single-user operating systems have traditionally been the most common type of operating system for microcomputers. These only allow the user to work on one task at a time. For microcomputers, multi-tasking operating systems provide single users with multiprogramming capabilities. This is often accomplished through foreground/background processing.

Multiprocessing (or parallel processing) refers to the use of two or more central processing units, linked together, to perform coordinated work simultaneously. Instructions are executed simultaneously because the available CPUs can execute different instructions of the same program or of different programs at any given time. Multiprocessing offers data-processing capabilities that are not present when only one CPU is used. Many complex operations can be performed at the same time. CPU can function on complementary units to provide data and control for one another. Multiprocessing is used for nation's major control applications such as rail road control, traffic control, or airways etc.

- (f) Primary Key of any table is any candidate key of that table which the database designer arbitrarily designates as "primary". The primary key may be selected for convenience, comprehension, performance, or any other reasons. It is entirely proper to change the selection of primary key to another candidate key.

Secondary Key can be defined for each table to optimize the data access. They can refer to any column combination and they help to prevent sequential scans over the table. Like the primary key, the secondary key can consist of multiple columns. A candidate key which is not selected as a primary key is known as Secondary Key.

- (g) Network Database Structure views all records in sets. Each set is composed of an owner record and one or more member records. This is analogous to the hierarchy's parent-children relationship. Thus, the network model implements the one-to-one and the one-to-many record structures. However, unlike the hierarchical mode, the network model also permits a record to be a member of more than one set at one time. The network model would permit the equipment records to be the children of both the room records and the vendor records. The network model also allows us to create owner records without member records. The network model requires that record relationships be established in advance because these relationships are physically implemented by the DBMS when allocating storage space on disk.

Relational database structure is a series of two-dimensional tables. The important things to notice are that the relationships, or links, do not need to be specified in advance and that whole tables or files are manipulated. Relational databases allow the manager flexibility in conducting database queries and creating reports. Queries can be made and new tables created using all or part of the data from one or more tables. The links between data elements in a relational database do not need to be made explicit at the time the database is created since new links can be structured at any time. The relational database structure is more flexible than hierarchical or network database structures and provides the manager with a rich opportunity for ad hoc reports and queries. However, because they do not specify the relationships among data elements in advance, relational databases do not process large batch applications with the speed of hierarchical or network databases.

- (h) Star Topology consists of processing nodes in a star network interconnect directly with a central system. Each terminal, small computer, or large main frame can communicate only

with the central site and not with other nodes in the network. If it is desired to transmit information from one node to another, it can be done only by sending the details to the central node, which in turn sends them to the destination. A star network is particularly appropriate for organisations that require a centralized data base or a centralized processing facility. For example, a star network may be used in banking for centralized record keeping in an on-line branch office environment.

Bus Topology is a single network cable runs in the building or campus and all nodes are linked along with this communication line with two endpoints called the bus or backbone.

For more details of the above points, students are advised to refer to the study material Chapter-3.5

- (i) Serial Transmission is the bits of each byte are sent along a single path one after another. It is a cheap mode of transferring data . It is suitable to transmit data over long distance. This mode is not efficient (i.e. slow) as it transfers data in series.

Parallel Transmission is separate, parallel path corresponding to each bit of the byte so that all character bits are transmitted simultaneously. Example of this transmission is the parallel port (Centronic port) used for printer. Parallel Transmission offers faster transfer of data. However, it is not practical for long distance communication as it uses parallel path, so cross talk occurs. Hence, the cable length is made limited to minimize cross talk.

- (j) Database Server allowing the user interface software to run on each user's PC (the client), and running the database engine in a separate machine (the database server) shared by all users. This approach can increase database performance as well as overall LAN performance because only selected records are transmitted to the user's PC, not large blocks of files. Database servers offer real potential for remote database access and distributed databases. Because the database server only returns selected database record(s) to the client machine (instead of large blocks of data), remote access over relatively slow telephone lines can provide acceptable performance. In addition, a client computer can make requests of multiple servers regardless of physical location.

Application Server is a server program that resides in the server (computer) and provides the business logic for the application program. The server can be a part of the network, more precisely the part of the distributed network. The server program is a program that provides its services to the client program that resides either in the same computer or on another computer connected through the network. Application servers are mainly used in Web-based applications that have a 3-tier architecture. The application server is a second/middle tier of the three-tier architecture. In other words, application servers are now an integral part of the three-tier architecture.

- (k) Smart Cards have an embedded microchip instead of magnetic strip. The chip contains all the information a magnetic strip contains but offers the possibility of manipulating the data and executing applications on the card. Three types of smart cards Contact Cards, Contactless Cards, Combi Cards are available for use.

Credit Cards allows the consumer to present preliminary proof of his ability to pay by presenting his credit card number to the merchant. The merchant can verify this with the bank, and create a purchase slip for the consumer to endorse. The merchant then uses this purchase slip to collect funds from the bank, and, on the next billing cycle, the consumer receives a statement from the bank with a record of the transaction.

For more details of the above points, students are advised to refer to the study material Chapter-4.12

3. (i) $(1296)_{10} = ()_2$

2	1296	
2	648	0
2	324	0
2	162	0
2	81	0
2	40	1
2	20	0
2	10	0
2	5	0
2	2	1
2	1	0
	0	1

$$(1296)_{10} = (10100010000)_2$$

(ii) $(10011011)_2 = ()_{10}$

$$= 1 \times 2^7 + 0 \times 2^6 + 0 \times 2^5 + 1 \times 2^4 + 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$$

$$= 128 + 0 + 0 + 16 + 8 + 0 + 2 + 1$$

$$(10011011)_2 = (155)_{10}$$

(iii) $(252.50)_{10} = ()_2$

To convert the given number from Decimal number system to Binary number system, first we will convert mantissa part, then the fractional part into Binary number system.

Step – I

2	252	
2	126	0
2	63	0
2	31	1
2	15	1
2	7	1
2	3	1
2	1	1
	0	1

$$(252)_{10} = (11111100)_2$$

Step – II

$$.50 \times 2 = 1.0$$

So,

$$(252.50)_{10} = (11111100.1)_2$$

(iv) $(101110.101)_2 = ()_{10}$

$$= 1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 0 \times 2^0 + 1 \times 2^{-1} + 0 \times 2^{-2} + 1 \times 2^{-3}$$

$$= 32 + 0 + 8 + 4 + 2 + 0 + \frac{1}{2} + 0 + \frac{1}{8}$$

$$\begin{aligned}
 &= 46.625 \\
 (101110.101)_2 &= (46.625)_{10}
 \end{aligned}$$

4. (a) Computer systems are often categorized into super computers, mainframes, minis, and micros. These days computers are also categorized as servers and workstations.
 1. Super Computers: These are the largest and fastest computers available but are typically not used for commercial data processing. Instead they are used in specialized areas such as in Defence, aircraft design and computer generated movies, weather research. This analysis has to be done in a very short time. In the medical field, super computers are used to study the structure of viruses, such as those causing AIDS. Designing an aircraft involves simulating and analyzing the airflow around the aircraft. Some of the super computers are CRAY, CDC, Fujitsu, Intel Corporation, Thinking Machine Corporation, NEC, SGI, Hitachi, IBM and Sun Microsystems, etc. Super computers can process 64 bits or more at a time. Their processing speed ranges from 10,000 million instructions per second (MIPS) to 1.2 billion instructions per second. They can support up to 10,000 terminals at a time.
 2. Mainframe Computers: Mainframes are less powerful and cheaper than Super computers. However, they are big general-purpose computers capable of handling all kinds of scientific and business applications. Mainframes can process at several million instructions per second. A Mainframe can support more than 1,000 remote terminals. Mainframes have large on-line secondary storage capacity. A number of different types of peripheral devices like magnetic tape drive, hard disk drive, visual display units, plotters, printers and telecommunication terminals can be attached with Mainframe computers. They have high-speed cache memory which enables them to process applications at a faster rate than Mini or Microcomputers. They also offer the facility of multiprogramming and time-sharing. A typical application of these computers is airline reservation or railway reservation system.
 3. Mini Computers: This type of computer performs data processing activities in the same way as the Mainframe but on a smaller scale. The cost of Minis is lower. Data is usually input by means of a keyboard. As the name implies, a Mini computer is small compared with a Mainframe and may be called a scaled-down Mainframe as the processor and the peripherals are physically smaller. These systems can serve as information processors in small-to-medium sized firms or as processors in computer networks for large firms. Primary storage capacity starts at about 640K and can go as high as few mega bytes (MB). A Mini computer system consists of a CPU, several disk drives, a high-speed printer, perhaps a few magnetic tape units, and number of terminals. Programming languages include BASIC, PASCAL, COBOL, C and FORTRAN.
 4. Micro Computers: A Micro computer is a full-fledged computer system that uses a microprocessor as its CPU, these are also called personal computer systems. A microprocessor is a product of the microminiaturization of electronic circuitry; it is literally a "computer on a chip". Chip refers to any self-contained integrated circuit. A microprocessor, however, is not a computer. It only provides a part of CPU circuitry. This chip must be mounted together with memory, input and output chips on a single circuit board to make it a Micro Computer. Thus, a Micro Computer often called a Micro is a small computer consisting of a processor on a single silicon chip which is mounted on a circuit board with other chips containing the computer's internal memory in the form of read-only-memory (ROM) and random-access-memory (RAM). The terms Micro Computer and Personal Computer are interchangeable; however, PC - which stands for personal computer has a more specific meaning. Micro Computer systems are used by even the smallest of business, however their primary market is the personal home computer market.
 5. Workstations: Between Mini Computers and Micro Computers - in terms of

processing power - is a class of computers known as workstations. A workstation looks like a personal computer and is typically used by one person. Although workstations are still more powerful than the average personal computer, - the differences in the capabilities of these types of machines are growing smaller. Workstations differ significantly from microcomputer in two areas. Internally, workstations are constructed differently than microcomputers. They are based on different architecture of CPU called reduced instruction set computing (RISC), which results in faster processing of instructions.

6. Server: A server is a computer system that provides services to other computing systems called clients over a network. The typical server is a computer system that operates continuously on a network and waits for requests for services from other computers on the network. Servers frequently host hardware resources that they make available on a controlled and shared basis to client computers, such as printers (print servers) and file systems (file servers) This sharing permits better access control (and thus better security) and can reduce costs by reducing duplication of hardware.

For more details of the above points, students are advised to refer to the study material Chapter-1.2

- (b) The heart of any computer is the central processing unit (CPU). It is this central processor that makes comparisons, performs calculations, reads, interprets and controls the execution of the instructions.

Various features of the Central Processing Unit

- ◆ Clock Speed: The clock speed is the speed at which the processor executes instructions. Clock speed is measured in megahertz (MHz)—which is a million cycles per second. Higher the clock's speed, the faster the processor, the better the system performance.
- ◆ Cache: Processors incorporate their own internal cache memory. The cache acts as temporary memory and boosts processing power significantly. The cache that comes with the processor is called Level One (L1) cache. This cache runs at the processor's clock speeds, and therefore is very fast. The L1 cache is divided into 2 sections—one for data, the other for instructions. Generally, more the L1 cache, faster the processor.
- ◆ Architecture: The CPUs architecture determines the manner in which it processes data. CPUs employ multi-staged pipelines for transmitting data. To ensure proper data flow through these lines, the CPU includes a kind of prediction and error correction mechanism.
- ◆ Slot: Different processors use different sockets or slots to fit onto the motherboard. Based on the type of processors, there are two main types of slots for connecting to the motherboard—Socket 7 and Slot 1.
- ◆ Density: A CPU is made up of millions of small transistors. A CPU performs all the calculation and manipulation operations by synchronising between the transistors. Therefore, the shorter the distance between two transistors on a CPU, the faster the performance.
- ◆ MMX: MMX stands for Multimedia Extensions—a set of instructions built in to the CPU, specifically intended for improving the performance of multimedia or graphic applications—mainly games. However, one needs to have applications specifically designed to take advantage of MMX.

- (c) Advantages of Computer System

- ◆ Speed: The smallest unit of time in the human experience is, realistically, the second. Computer operations are measured in milliseconds, microseconds, nanoseconds, and picoseconds.

- ◆ Accuracy: Errors do occur in computer-based information systems, but precious few can be directly attributed to the computer system itself. The vast majority can be traced to a program logic error, a procedural error, or erroneous data. These are human errors.
- ◆ Reliability: Computer systems are particularly adept at repetitive tasks. They don't take sick days and coffee breaks, and they seldom complain. Anything below 99.9% uptime, the time when the computer system is in operation, is usually unacceptable.
- ◆ Memory Capability: Computer systems have total and instant recall of data and an almost unlimited capacity to store these data.
- ◆ Versatility: The computer can be used for a variety of jobs-calculations, data retrieval, controlling machines, entertainment etc.

Limitations of Computer systems

- ◆ Program must be reliable: by using the program's branching ability, the computer may be able to modify its behavior according to the success or failure of past decisions. But a program that has operated flawlessly for months can suddenly produce nonsense.
- ◆ Application logic must be understood: The computer can only process jobs which can be expressed in a finite number of steps leading to a specify goal. Each step must be clearly defined. If the steps in the solution cannot be precisely stated, the job cannot be done. This is why the computer may not be helpful to people in areas where subjective evaluations are important.

5. (a) Types of storage

Computer System usually contains several kinds of storage, each with an individual purpose.

- (i) Primary storage: Primary storage is directly connected to the central processing unit of the computer. It must be present for the CPU to function correctly. Primary storage typically consists of three kinds of storage:
 - ◆ Processor registers are internal to the central processing unit. Registers contain information that the arithmetic and logic unit needs to carry out the current instruction. They are technically the fastest of all forms of computer storage, being switching transistors integrated on the CPU's silicon chip, and functioning as electronic "flip-flops".
 - ◆ Main memory contains the programs that are currently being run and the data on which the programs are operating. The arithmetic and logic unit can very quickly transfer information between a processor register and locations in main storage, also known as a "memory addresses".
 - ◆ Cache memory is a special type of internal memory used by many central processing units to increase their performance or "throughput". Some of the information in the main memory is duplicated in the cache memory, which is slightly slower but of much greater capacity than the processor registers, and faster but much smaller than main memory.
- (ii) Secondary, tertiary and off-line storage: Secondary storage requires the computer to use its input/output channels to access the information, and is used for long-term storage of persistent information. Secondary storage is also known as "mass storage", is typically of much greater capacity than primary storage (main memory), but it is also very much slower. In modern computers, hard disks are usually used for mass storage. The time taken to access a given byte of information stored on a hard disk is typically a few thousandths of a second, or milliseconds. By contrast, the time taken to access a given byte of information stored in random access memory is measured in thousand-millionths of a second, or nanoseconds.
 - ◆ Tertiary storage Tertiary storage is used in the realms of enterprise storage and scientific computing on large computer systems and business computer networks,

and is something a typical personal computer user never sees firsthand.

- ♦ Off-line storage is a system where the storage medium can be easily removed from the storage device. Off-line storage is used for data transfer and archival purposes. In modern computers, floppy disks, optical discs and flash memory devices including "USB drives" are commonly used for off-line mass storage purposes
- (iii) Network storage: Network storage is any type of computer storage that involves accessing information over a computer network. Network storage arguably allows to centralize the information management in an organization, and to reduce the duplication of information.
 - ♦ Network-attached storage is secondary or tertiary storage attached to a computer which another computer can access over a local-area network, a private wide-area network, or in the case of online file storage, over the Internet.
 - ♦ Network computers are computers that do not contain internal secondary storage devices. Instead, documents and other data are stored on a network-attached storage.
- (b) A storage medium from which data is read and to which it is written by lasers. Optical disks can store much more data -- up to 6 gigabytes (6 billion bytes) -- than most portable magnetic media, such as floppies.

Optical laser disk storage is capable of storing vast amount of data. With this technology, the read/write head used in magnetic storage is replaced by two lasers. One laser beam writes to the recording surface by scoring macroscopic pits in the disk, and another laser reads the data from the light sensitive recording surface. A light beam is easily deflected to the desired place on the optical disk, so a mechanical access arm is not needed.

There are three basic types of optical disks:

1. CD-ROM: Like audio CDs, CD-ROMs come with data already encoded onto them. The data is permanent and can be read any number of times, but CD-ROMs cannot be modified.
2. WORM: Stands for write-once, read -many. With a WORM disk drive, you can write data onto a WORM disk, but only once. After that, the WORM disk behaves just like a CD-ROM.
3. Erasable: Optical disks that can be erased and loaded with new data, just like magnetic disks. These are often referred to as EO (erasable optical) disks.

For more details of the above points, students are advised to refer to the study material Chapter-1.7.3 and web link http://en.wikipedia.org/wiki/Optical_disc#

6. (a) A computer terminal is an electronic or electromechanical hardware device that is used for entering data into, and displaying data from, a computer or a computing system. Typically it provides a text terminal interface over a serial line. A computer terminal or video display terminal (VDT), generally combines input and output functions. It consists of a QWERTY keyboard for inputting information direct to the computer, and either a printer or a TV screen for displaying information from the computer. Terminals are most commonly found in settings that are remote from the main computer and they interact with the computer through communications lines or networks.

Types of terminals

- (a) Dumb Terminal is an input/output (I/O) device that provides for data entry and information exit when connected to a computer but has no additional capability.
- (b) Intelligent Terminal has an in-built processing capability. It is also user-programmable. It contains not only a storage area but also a microprocessor. The terminal can be programmed to communicate with and instruct the user who is entering

data. Intelligent terminals cost several times more than non-intelligent terminals but the savings they provide for many companies is much more than their cost.

- (c) Smart Terminals additionally, contain a microprocessor and some internal storage. They have data editing capability and can consolidate input data before sending it to CPU. These terminals are non-programmable by users.
 - (d) Remote Job Terminal (also referred to as Remote Job Entry or RJE), groups data into blocks for transmission to a computer from a remote site. Some RJE terminals have the capability of receiving back and printing the results of the application program. Such a unit is in itself a small computer, which can be used either as job entry terminal or as a stand-alone computer.
 - (e) Hard-wired Terminals terminals linked to the computer system by a direct cable are known as. However, for remote terminals, communication to the main system can be established via telecommunication lines such as ordinary telephone lines.
 - (f) Keyboard Printer Terminal: The keyboard printer terminal or teletypewriter consists of a keyboard for sending information to the computer and a printer, for providing a copy of the input and for receiving information from the computer.
 - (b) The programming languages are part of the software or programming aids provided by the manufacturer. A programming language is a language used in writing programs to direct processing steps to be carried out by a computer.
- (b) Hierarchy of Programming Languages
- (a) Machine Language or First Generation Languages: All programs were written in machine codes. Each particular computer model has a machine language, which is based on the internal engineering architecture of the equipment, and which is developed and provided to user by the computer manufacturer. Simply a machine level language is the language of the computer, the only language the computer understands without translation. Programs written in machine-level language can only be used on the computer model for which that language is written. That is why this language is called machine-oriented. The earlier machine language employed the binary code i.e., the instructions were codified in series of 1's and 0's in accordance with the bit pattern of the instruction to be performed.
 - (b) Assembler Languages or Second Generation Languages: Assembler Languages are at the next level in improvement over the machine languages. They are also known as symbolic languages because they employ symbols for both arithmetic and logical operations and even location addresses. Since mnemonic symbols are being used, this eases up the programmer's task greatly. But the computer follows its machine language only and the program written in the assembler language has to be translated. This is accomplished by a special program usually supplied by the computer manufacturer and known as the assembler. The assembler simply translates each instruction in symbolic language to its machine language equivalent. Thus, there is a one-for-one correspondence between the two languages. Another advantage possessed by the assembly language is that of flexibility. The principal advantage of assembler language is that a program can be written which is very efficient in terms of execution time and main memory usage. Additionally, an assembler language programmer will normally have to write a large number of statements to solve a given problem than will a programmer using other high-level programming languages.
 - (c) Compiler Languages (High-level-languages) or Third Generation Languages: Compiler languages are also known as high level languages or procedural languages. They are procedure oriented (viz., a business application oriented language COBOL and a scientific application oriented language FORTRAN. They employ plain English like and mathematical expressions. Since they are procedure oriented and detached from the machine design, instructions of these languages may be equivalent to more than one instructions in a machine language. An instruction in these languages is

usually called a statement.

A computation $X + Y = Z$ would be written as below in FORTRAN (Formula Translation) and COBOL (Common Business Oriented Language) :

FORTRAN : $Z = X + Y$ X, Y, Z designate

COBOL : COMPUTE $Z = X + Y$ storage locations.

Translating to machine language for the computer on hand which is accomplished by an especial program known as the compiler, written and provided by the computer manufacturer. Thus, programs written in high-level language are cheaper than the low level languages in terms of learning and writing programs but this advantage is offset to an extent by more time on translation.

Besides FORTRAN and COBOL there are several more high-level languages such as BASIC, PASCAL and C-language etc.

- (d) The Fourth Generation Languages (4GLs) : There are two types of 4GLs :

(i) Production Oriented 4GLs

(ii) User Oriented 4GLs

The features of a 4GL include English like instructions, limited mathematical manipulation of data, automatic report formatting, sequencing (sorting) and record selection by the user given criteria. However, 4GLs are less efficient than third generation languages. 4GLs require more computer capacity to perform a particular operation and users end up fitting their problems to the capabilities of the software. When being executed, 4GL programs often consume significantly more machine cycles than 3GL program that perform the same task. This may result in slow response time. Faster and more powerful processors, along with 4GL product refinement, are likely to compensate for these deficiencies over time.

- (e) Object -Oriented Languages and Programming: an object-oriented language (OOL)

An object is a predefined set of program code that, after having been written and tested, will always behave the same way, so that it can be used for other applications. All programs consist of specific tasks such as saving or retrieving data and calculating totals. In object-oriented programming, an object is written for each specific task and saved in a library so that anyone can use it. Using object-oriented programming (OOP), objects are combined and the small amount of code necessary for finishing the program is written. Rather than writing a program line by line, programmers select objects by pointing to a representative icon and then linking these objects together. The advantages of OOP are its graphical interface, ease of use, faster program development, and enhanced programmer productivity (up to tenfold increases) The programs produced by OOP are more reliable and contain fewer errors, since the modules being used have already been extensively tested. Its disadvantages are its steep initial development costs and a more extensive start-up time. OOP produced large programs are slower, and use more memory and other computer resources than traditional methods. Some common object-oriented languages are small talk, C++ , Visual Basic, and Java.

7. (a) A language translator or language processor is a general term used for any assembler, compiler or other routine that accepts statements in one language and produces equivalent statements in another language. The language processor reads the source language statements one at a time and prepares a number of machine instructions to perform the operations specified or implied by each source statement. The three most widely used types of language translators are compilers, interpreters, and assemblers.

- (a) Compilers: A compiler translates the entire program into machine language before the program is executed. Compilers are most commonly used to translate high-level languages such as COBOL, FORTRAN, and Pascal. Compilers typically result in programs that can be executed much more swiftly than those handled by interpreters. Since either a compiler or an interpreter can be developed to translate most

languages, compilers would be preferred in environments where execution speed is important.

The program submitted for compilation is called a source program (or source module). The compiler then translates the program into machine language, producing an object program (or object module). Then, another software program called a Linker Editor binds the object module of this program to object modules of any subprograms that must be used to complete processing. The resultant program, which is ready for computer execution, is called a load program (or load module). It is the load program that the computer actually executes. The entire process is sometimes referred to as "compile/link-edit/go," corresponding to the compilation, link-editing, and execution stages that the user must go through to get a program processed.

- (b) **Interpreters:** Whereas compilers translate programs into machine language all at once before programs are run, interpreters translate programs a line at a time as they are being run. With an interpreter, each statement is translated into machine language just before it is executed. No object module or storable load module is ever produced.

To compare Compiler and Interpreter, first they are usually easier and faster to use, since the user is not bothered with distinct and time-consuming compile, link-edit, and execution stages. Second, they typically provide users with superior error messages. When a program contains an error and "blows up," the interpreter knows exactly which statement triggered the error – the one it last translated. Third, an interpreter for a 3GL typically requires less storage space in primary memory than a compiler for that language. So they may be ideal for programming environments in which main memory is limited, such as on low-end microcomputers. Fourth, interpreters are usually less expensive than compilers.

- (c) **Assemblers:** Assemblers are used exclusively with assembly languages. They work similarly to compilers, translating an assembly language program into object code. Because assembly language programs are usually more machine efficient than those written in high-level languages, a two-step translation process may take place. First, the high-level language is translated to assembly language; then, using an assembler, it is converted to machine language.

- (b) **An expert system,** also known as a knowledge based system, is a computer program that contains some of the subject-specific knowledge, and contains the knowledge and analytical skills of one or more human experts. The most common form of expert systems is a program made up of a set of rules that analyze information (usually supplied by the user of the system) about a specific class of problems, as well as providing mathematical analysis of the problem(s), and, depending upon their design, recommend a course of user action in order to implement corrections. It is a system that utilizes what appear to be reasoning capabilities to reach conclusions.

An expert system (ES) is a computerized information system that allows non-experts to make decisions comparable to those of an expert. Expert systems are used for complex or ill-structured tasks that require experience and specialised knowledge in narrow, specific subject areas. Expert systems typically contain the following components:

1. **Knowledge base:** This includes the data, knowledge, relationships, rules of thumb (heuristics), and decision rules used by experts to solve a particular type of problem. A knowledge base is the computer equivalent of all the knowledge and insight that an expert or a group of experts develop through years of experience in their field.
2. **Inference engine:** This program contains the logic and reasoning mechanisms that simulate the expert logic process and deliver advice. It uses data obtained from both the knowledge base and the user to make associations and inferences, form its conclusions, and recommend a course of action.
3. **User interface:** This program allows the user to design, create, update, use, and

communicate with the expert system.

4. Explanation facility: This facility provides the user with an explanation of the logic the ES used to arrive at its conclusion.
5. Knowledge acquisition facility: Building a knowledge base, referred to as knowledge engineering, involves both a human expert and a knowledge engineer. The knowledge engineer is responsible for extracting an individual's expertise and using the knowledge acquisition facility to enter it into the knowledge base.

For more details of the above points, students are advised to refer to the study material Chapter-1.6.4 and web link http://en.wikipedia.org/wiki/expert_system.

8. (a) Indexed-Sequential File Organisation: The indexed sequential file organisation or indexed sequential access method (ISAM), is a hybrid between sequential and direct access file organisations. The records within the file are stored sequentially but direct access to individual records is possible through an index. It is a method for storing data for fast retrieval. In an ISAM system, data is organized into records which are composed of fixed length fields. Records are stored sequentially, originally to speed access on a tape system. A secondary set of hash tables known as indexes contain "pointers" into the tables, allowing individual records to be retrieved without having to search the entire data set. The key improvement in ISAM is that the indexes are small and can be searched quickly, allowing the database to then access only the records it needs. To locate a record, the cylinder index is searched to find the cylinder address, and then the track index for the cylinder is searched to locate the track address of the desired record.

Advantages of Indexed Sequential Files

- ◆ Permits the efficient and economical use of sequential processing techniques when the activity ratio is high.
- ◆ Permits direct access processing of records in a relatively efficient way when the activity ratio is low.

Disadvantages of Indexed Sequential Files

- ◆ These files must be stored on a direct-access storage device. Hence, relatively expensive hardware and software resources are required.
- ◆ Access to records may be slower than direct files.
- ◆ Less efficient in the use of storage space than some other alternatives.

For more details of the above points, students are advised to refer to the study material Chapter-2.6 and web link http://en.wikipedia.org/wiki/Index_sequential_file

- (b) A Database Architecture has 3 levels:

- (i) External or User View,
- (ii) Conceptual or Global View,
- (iii) Physical or Internal View.

External or User View

- (i) It is at the highest level of the database abstraction,
- (ii) It includes only those portion of database or application programs which is of concern to the users,
- (iii) It is described by means of a scheme, called the external schema,
- (iv) It is defined by the users or written by the programmers.

an external view in its Logical Record 1 may indicate employee name, employee address and in its Logical Record 2 may indicate employee name, employee address and employee code and employee salary.

Global or Conceptual View

All database entities and relationships among them are included,

- (i) Single view represents the entire database,
- (ii) It is defined by the conceptual schema,
- (iii) It describes all records, relationships and constraints or boundaries,
- (iv) Data description to render it independent of the physical representation.

A conceptual view may define employee code as a string of characters, employee address also as a string, employee code as a key and employee salary as an integer.

Physical or Internal View

- (i) It is at the lowest level of database abstraction,
- (ii) It is closest to the physical storage method,
- (iii) It indicates how data will be stored,
- (iv) It describes data structure,
- (v) It describes access methods,
- (vi) It is expressed by internal schema.

The internal view instead, may define employee name is comprised of 30 characters, employee address is also comprised of 30 characters, employee code is comprised of 5 characters and employee salary is comprised of 12 numbers.

(c) Various Database Components are:

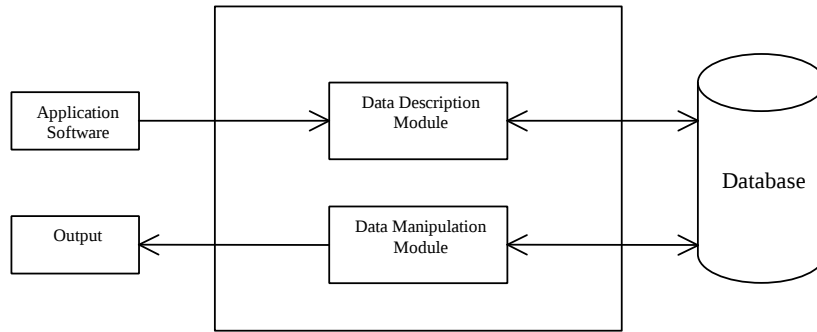
- (i) Data Definition Language (DDL) that defines the conceptual schema providing a link between the logical (the way the user views the data) and physical (the way in which the data is stored physically) structures of the database. A sub schema is the way a specific application views the data from the database.

Following are the functions of Data Definition Language (DDL) –

- (a) They define the physical characteristics of each record, field in the record, field's data type, field's length, field's logical name and also specify relationships among the records,
- (b) They describe the schema and subschema,
- (c) They indicate the keys of the record,
- (d) They provide means for associating related records or fields,
- (e) They provide for data security measures,
- (f) They provide for logical and physical data independence.

(ii) Data Manipulation Language (DML)

- (a) They provide the data manipulation techniques like deletion, modification, insertion, replacement, retrieval, sorting and display of data or records,
- (b) They facilitate use of relationships between the records,
- (c) They enable the user and application program to be independent of the physical data structures and database structures maintenance by allowing to process data on a logical and symbolic basis rather than on a physical location basis,
- (d) They provide for independence of programming languages by supporting several high-level procedural languages like, COBOL, PL/1 and C++.



9. (a) 'Backup' is a utility program used to make a copy of the contents of database files and log files. The database files consist of a database root file, log file, mirror log file, and other database files called dbspaces.

'Recovery' is a sequence of tasks performed to restore a database to some point-in-time. Recovery is performed when either a hardware or media failure occurs. Hardware failure is a physical component failure in the machine, such as, a disk drive, controller card, or power supply. Media failure is the result of unexpected database error when processing data.

Certain issues related with Database Backup and Recovery

A Transaction Log is a file that records database modifications. Database modifications consist of inserts, updates, deletes, commits, rollbacks, and database schema changes.

A Mirror Log is an optional file and has a file extension of .mlg. It is a copy of a transaction log and provides additional protection against the loss of data in the event the transaction log becomes unusable.

An Online Backup is performed by executing the command-line or from the 'Backup Database' utility. When an online backup process begins the database engine externalizes all cached data pages kept in memory to the database file(s) on disk. This process is called a checkpoint. The database engine continues recording activity in the transaction log file while the database is being backed up. The log file is backed up after the backup utility finishes backing up the database. The log file contains all of the transactions recorded since the last database backup. For this reason the log file from an online full backup must be 'applied' to the database during recovery.

An Offline Backup does not have to participate in recovery but it may be used in recovery if a prior database backup is used.

A Live Backup is carried out by using the BACKUP utility with the command-line option. A live backup provides a redundant copy of the transaction log for restart of your system on a secondary machine in the event the primary database server machine becomes unusable.

A Full Backup is the database backup utility copies the database and log.

An Incremental Backup uses the DBBACKUP utility to copy the transaction log file since the most recent full backup. When you perform an incremental backup the mirror log is not backed up.

Developing a Backup and Recovery Strategy

The steps suggested in the development of a backup and recovery strategy consist of the following:

- ◆ Understand what backup and recovery means to your business
- ◆ Management commits time and resources for the project
- ◆ Develop, test, time, document, health check, deploy, and monitor
- ◆ Beware of any external factors that affect recovery
- ◆ Address secondary backup issues.

- (b) A Data Warehouse is a computer database that collects, integrates and stores an organization's data with the aim of producing accurate and timely management information and supporting data analysis. As a result, separate computer databases began to be built that were specifically designed to support management information and analysis purposes. These data warehouses were able to bring in data from a range of different data sources, such as mainframe computers, minicomputers, as well as personal computers and office automation software such as spreadsheets and integrate this information in a single place. This capability, coupled with user-friendly reporting tools, and freedom from operational impacts has led to a growth of this type of computer system. As technology improved (lower cost for more performance) and user requirements increased (faster data load cycle times and more functionality).

A Data Mining is concerned with the analysis of data and the use of software techniques for finding patterns and regularities in sets of data. It is the computer, which is responsible for finding the patterns by identifying the underlying rules and features in the data. The idea is that it is possible to strike gold in unexpected places as the data mining software extracts patterns not previously discernable or so obvious that no-one has noticed them before.

Data Mining analysis tends to work from the data up and the best techniques are those developed with an orientation towards large volumes of data, making use of as much of the collected data as possible to arrive at reliable conclusions and decisions. The analysis process starts with a set of data, uses a methodology to develop an optimal representation of the structure of the data during which time knowledge is acquired. Once knowledge has been acquired this can be extended to larger sets of data working on the assumption that the larger data set has a structure similar to the sample data.

Components of a Data Warehouse

- ◆ Data Sources
- ◆ Data Transformation
- ◆ Data Warehouse
- ◆ Reporting Metadata
- ◆ Operations.
- ◆ Optional Components

The following components also exist in some data warehouses:

1. Dependent Data Marts
2. Logical Data Marts
3. Operational Data Store

For more details of the above points, students are advised to refer to the study material Chapter-2.17

10. (a) A computer network is a collection of computers and terminal devices connected together by a communication system. The set of computers may include large-scale computers, medium scale computers, mini computers and microprocessors. The set of terminal devices may include intelligent terminals, "dumb" terminals, workstations of various kinds and miscellaneous devices such as the commonly used telephone instruments.

Benefits of Using Networks: As the business grows, good communication between employees is needed. The organisations can improve efficiency by sharing information such as common files, databases and business application software over a computer network.

- (i) Organizations can improve communication by connecting their computers and working on standardized systems, so that:
- ◆ Staff, suppliers and customers are able to share information and get in touch more easily.

- ◆ More information sharing can make the business more efficient - eg networked access to a common database can avoid the same data being keyed multiple times, which would waste time and could result in errors.
 - ◆ as staff are better equipped to deal with queries and deliver a better standard of service as they can share information about customers.
- (ii) Organization can reduce costs and improve efficiency - by storing information in one centralized database and streamlining working practices, so that:
- ◆ staff can deal with more customers at the same time by accessing customer and product databases.
 - ◆ network administration can be centralized, less IT support is required.
 - ◆ costs are cut through sharing of peripherals such as printers, scanners, external discs, tape drives and Internet access.
- (iii) Organizations can reduce errors and improve consistency - by having all staff work from a single source of information, so that standard versions of manuals and directories can be made available, and data can be backed up from a single point on a scheduled basis, ensuring consistency.
- (b) There are five basic components in any network (whether it is the internet, a LAN, a WAN, or a MAN):
1. The sending device
 2. The communications interface devices
 3. The communications channel
 4. The receiving device
 5. Communications software.

For more details of the above points, students are advised to refer to the study material Chapter-3.4.

- (c) Electronic commerce is the process of doing business electronically. It involves the automation of a variety of business-to-business and business-to-consumer transactions through reliable and secure connections.

eCommerce or ecommerce consists primarily of the distributing, buying, selling, marketing and servicing of products or services over electronic systems such as the Internet and other computer networks.

Electronic Commerce is the application of various communications technologies to provide the automated exchange of business information with internal and external customers, suppliers and financial institutions. Examples of these technologies include Electronic Data Interchange (EDI), bar coding, scanning, E-mail and fax, to name a few. The bottom line is that Electronic Commerce requires a paradigm shift in the way corporations do business today. (Electronic Commerce Forum)

There are three distinct general classes of e-commerce applications:

- (a) Business-to-business (B2B)
- (b) Business-to- consumer (B2C)
- (c) Consumer-to-consumer (C2C).

Business-to-Business (B2B): It is a short form of business-to-business, the exchange of services, information and/or products from one business to another, as opposed to between a business and a consumer. Business-to-business electronic commerce (B2B) typically takes the form of automated processes between trading partners and is performed in much higher volumes than business-to-consumer (B2C) applications.

For example, a company that makes cattle feed would sell it to a cattle farm, another company, rather than directly to consumers. An example of a B2C transaction would be a consumer buying grain-fed cattle at a grocery store. B2B can also encompass marketing activities between businesses, and not just the final transactions that result from marketing.

Business-to-Customer (B2C): It is a short form of business-to-consumer, the exchange of services, information and/or products from a business to a consumer, as opposed to between one business and another. Business-to-consumer electronic commerce (B2C) is a form of electronic commerce in which products or services are sold from a firm to a consumer.

Two Classifications of B2C E-Commerce are –

- (a) **Direct Sellers:** Companies that provide products or services directly to customers are called direct sellers. There are two types of direct sellers: E-tailers and Manufacturers.
 - (i) E-tailers
 - (ii) Manufacturers
- (b) **Online Intermediaries:** Online intermediaries are companies that facilitate transactions between buyers and sellers and receive a percentage. There are two types of online intermediaries: brokers and infomediaries.
 - (i) Brokers
 - (ii) Infomediaries.

Consumer-to-consumer (C2C): Consumer-to-consumer electronic commerce (abbreviated C2C) is an internet-facilitated form of commerce that has existed for the span of history in the form of barter, flea markets, swap meets, yard sales and the like. Most of the highly successful C2C examples using the Internet take advantage of some type of corporate intermediary and are thus not strictly good examples of C2C.

11. (a) **Customer Relationship Management (CRM)** includes the methodologies, technology and capabilities that help an enterprise manage customer relationships. The general purpose of CRM is to enable organizations to manage their customers in a better way through the introduction of reliable systems, processes and procedures. Customer Relationship Management is a corporate level strategy which focuses on creating and maintaining lasting relationships with its customers.

To be effective, the CRM process needs to be integrated end-to-end across marketing, sales, and customer service. A good CRM program needs to:

- (i) Identify customer success factors
 - (ii) Create a customer-based culture
 - (iii) Adopt customer-based measures
 - (iv) Develop an end-to-end process to serve customers
 - (v) Recommend what questions to ask to help a customer solve a problem
 - (vi) Recommend what to tell a customer with a complaint about a purchase
 - (vii) Track all aspects of selling to customers and prospects as well as customer support.
- (b) The term electronic data interchange has many definitions. American National Standards Institute (ANSI) has defined it as:

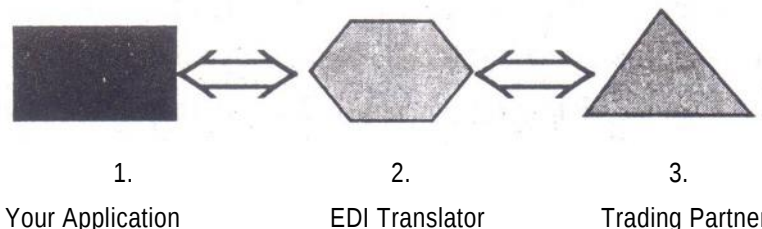
Electronic Data Interchange (EDI) is the transmission, in a standard syntax, of unambiguous information of business or strategic significance between computers of independent organisations. The users of EDI do not have to change their internal data bases. However, users must translate this information to or from their own computer system formats, but this translation software has to be prepared only once.

In simple terms, EDI is computer-to-computer communication using a standard data format to exchange business information electronically between independent organisations.

EDI no longer merely aids in transmitting documents, but dynamically moves data between companies' computer systems. The computer-to-computer transfer can be direct, between two companies using an agreed upon data protocol, or it can be performed by a third-party service vendor. Users can transmit business documents such as purchase orders, price quotes, shipping notices, and even payment orders electronically to customers and suppliers. Design documents, electronic funds transfers, and database transactions can all come under the EDI umbrella. The format for data transmission between trading partners via common carrier, is governed by a predetermined and institutionally agreed upon set standards.

How EDI Works

EDI is the electronic exchange of business documents such as invoices, purchase orders, and shipping notices in a standard, machine-processable data format. EDI automates the transfer of data between dissimilar computer systems. This is a 3-step process. Looking at an outgoing scenario:



- ◆ Data from your application is translated into a standard format.
- ◆ Then, it is transmitted over communication lines to your trading partner.
- ◆ Finally, it is re-translated by your trading partner's application.

(The process works in reverse when your trading partner wishes to send an EDI transaction to you.)

For more details of the above points, students are advised to refer to the study material Chapter-4.10

- (c) Several tools are now available to protect information and systems against compromise, intrusion, or misuse:
1. Firewalls are systems that control the flow of traffic between the Internet and the firm's internal LANs and systems. They are usually packaged as turnkey hardware/software packages, and are set up to enforce the specific security policies that are desired. A firewall is a proven, effective means of protecting the firm's internal resources from unwanted intrusion.
 2. Encryption allows information to transit the Internet while being protected from interception by eavesdroppers. There are two basic approaches to encryption:
 - (i) Hardware encryption devices are available at a reasonable cost, and can support high-speed traffic.
 - (ii) Software encryption is typically employed in conjunction with specific applications. Certain electronic mail packages, for example, provide encryption and decryption for message security.
 3. Message Authentication makes sure that a message is really from whom it purports to be and that it has not been tampered with.
 4. Site Blocking is a software-based approach that prohibits access to certain Web sites that are deemed inappropriate by management. For example, sites that contain explicit

objectionable material can be blocked to prevent employee's from accessing these sites from company Internet servers.

12. (a) Benefits of Flowcharts

The benefits of flowcharts are elucidated below:

- ◆ Quicker grasp of relationships: Before any application can be solved, it must be understood, the relationship between various elements of the application must be identified. The programmer can chart a lengthy procedure more easily with the help of a flowchart than by describing it by means of written notes.
- ◆ Effective Analysis: The flowchart becomes a blue print of a system that can be broken down into detailed parts for study. Problems may be identified and new approaches may be suggested by flowcharts.
- ◆ Communication: Flowcharts aid in communicating the facts of a business problem to those whose skills are needed for arriving at the solution.
- ◆ Documentation: Flowcharts serve as a good documentation which aid greatly in future program conversions. In the event of staff changes, they serve as training function by helping new employees in understanding the existing programs.
- ◆ Efficient coding: Flowcharts act as a guide during the system analysis and program preparation phase. Instructions coded in a programming language may be checked against the flowchart to ensure that no steps are omitted.
- ◆ Orderly check out of problem: Flowcharts serve as an important tool during program debugging. They help in detecting, locating and removing mistakes.
- ◆ Efficient program maintenance: The maintenance of operating programs is facilitated by flowcharts. The charts help the programmer to concentrate attention on that part of the information flow which is to be modified.

Limitations of flowcharts

The limitations of flowcharts are as given below:

- ◆ Complex logic: Flowchart becomes complex and clumsy where the problem logic is complex.
- ◆ Modification: If modifications to a flowchart are required, it may require complete re-drawing.
- ◆ Reproduction: Reproduction of flowcharts is often a problem because the symbols used in flowcharts cannot be typed.
- ◆ Link between conditions and actions: Sometimes it becomes difficult to establish the linkage between various conditions and the actions to be taken there upon for a particular condition.
- ◆ Standardization: Program flowcharts, although easy to follow, are not such a natural way of expressing procedures as writing in English, nor are they easily translated into Programming language.
- ◆ The essentials of what is done can easily be lost in the technical details of how it is done.
- ◆ There are no obvious mechanisms for progressing from one level of design to the next e.g., from system flowchart to run flowcharts, program flowchart etc.

(b) Various components of Decision Table

- ◆ Condition Statement: Statement which introduce one or more conditions (i.e., factors to consider in making a decision)
- ◆ Condition Entries: Entries that complete condition statements.

- ◆ Action Statements: Statements which introduce one or more actions (i.e., steps to be taken when a certain combination of conditions exist)
- ◆ Action Entries: Entries that complete the action statements.
- ◆ Rules: Unique combinations of conditions and actions to be taken under those conditions.
- ◆ Header: Title identifying the table.
- ◆ Rule Identifiers: Code (R1, R2, R3,) uniquely identifying each rule within a table.
- ◆ Condition Identifiers: Codes (C1, C2, C3,...) uniquely identifying each condition statements/entry.
- ◆ Action Identifiers: Codes (A1, A2, & A3...) uniquely identifying each action statement/entry

These items are contained within the body of the table which is divided into four major sections by double or heavy vertical and horizontal lines.

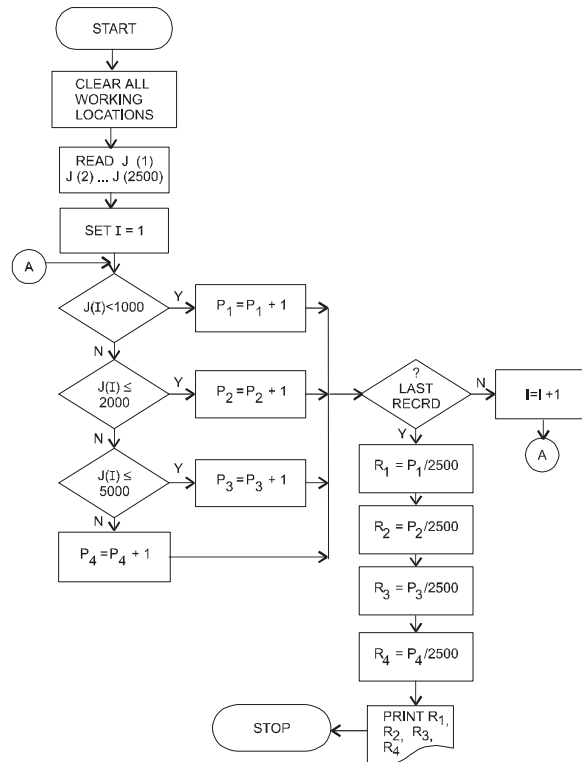
(c) Advantages of Using Decision Table

- ◆ A decision table provides a framework for a complete and accurate statement of processing or decision logic. It forces a discipline on the programmer to think through all possible conditions.
- ◆ A decision table may be easier to construct than a flow chart.
- ◆ A decision table is compact and easily understood making it very effective for communication between analysts or programmers and non-technical users. Better documentation is provided by it.
- ◆ Direct conversion of decision table into a computer program is possible. Software packages are available which take the statement specifying a decision table and compile it into a program.
- ◆ It is possible to check that all test combinations have been considered.
- ◆ Alternatives are shown side by side to facilitate analysis of combinations.
- ◆ The tables show cause and effect relationships.
- ◆ They use standardised format.
- ◆ Typists can copy tables with virtually no question or problems.
- ◆ Complex tables can easily be split into simpler tables.
- ◆ Table users are not required to possess Computer knowledge.

Disadvantages of using decision tables

- ◆ Total sequence: The total sequence is not clearly shown i.e., no overall picture is given by decision tables as presented by flow charts.
- ◆ Logic: Where the logic of a system is simple, flowcharts nearly always serve the purpose better than a decision table.

13.



14.

Decision Table

	Allowing Credit Facility	R1	R2	R3	R4	R5	R6	R7	R8
C1	Holding the present job for more than 3 years	Y	Y	Y	Y	N	N	N	N
C2	Monthly salary exceeds Rs. 1500	Y	Y	N	N	Y	Y	N	N
C3	Residing in the same place for more than 5 years	Y	N	Y	N	Y	N	Y	N
A1	Allow credit facility	X	X	X		X			
A2	Reject credit facility				X		X	X	X

15. (a) **Motherboard:** A Motherboard is the central or primary circuit board making up a complex electronic system, such as a modern computer. It is also known as a mainboard, baseboard, system board, or, on Apple computers, a logic board, and is sometimes abbreviated as mobo.

The basic purpose of the motherboard, like a backplane, is to provide the electrical and logical connections by which the other components of the system communicate. The motherboard or the system board is the main circuit board on the computer. It acts as a direct channel for the various components to interact and communicate with each other. There are various types of motherboards available (depending on the processors that are used).

For more details of the above points, students are advised to refer to the study material Chapter-1.5 and web link <http://en.wikipedia.org/wiki/Motherboard>

- (b) Buses: A bus acts as the system's expressway - it transmits data between the various components on the motherboard. Theoretically, a bus is a collection of wires through which data is transmitted between the various components of a pc. A bus connects the various components of the pc with the CPU and the main memory (RAM) Logically, a bus consists of two parts—an address bus and a data bus.

- ◆ Data Bus: The Data Bus is an electrical path that connects the CPU, memory, and the other hardware devices on the motherboard. Actually, the bus is a group of parallel wires. The number of wires in the bus affects the speed at which data can travel between hardware components, just as the number of lanes on a highway affects how long it takes people to get to their destinations.
- ◆ Address Bus: The second bus that is found in every microcomputer is the address bus. The address bus is a set of wires similar to the data bus that connects the CPU and RAM and carries the memory addresses.
- ◆ Control Bus is (part of) a computer bus, used by CPUs for communicating with other devices within the computer. While the address bus carries the information on which device the CPU is communicating with and the data bus carries the actual data being processed, the control bus carries commands from the CPU and returns status signals from the devices, for example if the data is being read or written to the device the appropriate line (read or write) will be active (logic zero).

For more details of the above points, students are advised to refer to the study material Chapter-1.5.5 and web link [http://en.wikipedia.org/wiki/Control bus](http://en.wikipedia.org/wiki/Control_bus)

- (c) Digital Video Disk: DVD (also known as "Digital Versatile Disc" or "Digital Video Disc") is an optical disc storage media format that can be used for data storage, including movies with high video and sound quality. A video disk can store text, video, and audio data. Video disks can be accessed a frame at a time (to provide still information) or played like a phonograph record (to supply up to an hour of moving action) any of the 54,000 tracks on the surface of typical video disk can be accessed in about three seconds.

A digital video disk (DVD) is a 5 inch plastic disk that uses a laser to encode microscopic pits in its substrate surface. But the pits on a DVD are much smaller and are encoded much closer together than those on a CD-ROM. The advantages of DVDs are therefore self-evident – a huge storage capacity that enables users to archive large amounts of data on a single, lightweight, removable, reliable, easily-transportable medium. Video disks are widely used for training applications

- (d) Touch Screen: An invisible microwave beam 'matrix' criss crosses the screen, emanating from holes along the bottom and sides of the display unit. By pressing the finger against a function or program displayed on the screen, the infrared beam is broken at that intersection and the system activated. Two popular technologies exist for touch screens. In one, the screen is made sensitive to touch and the exact position is detected. In the other, the screen is lined with light emitting devices on its vertical sides, photo-detectors are placed on the horizontal sides. When the user's finger approaches the screen, the light beam is broken and is detected by the photo-detectors. Touch screens are used in information-providing systems. Touch screens are also used in stock exchanges where buying and selling of stock is done.
- (e) Non-impact Printers: A non-impact printer forms characters by chemical or electronic means. However, three types of non-impact printers are worth mentioning because they are expected to become more important in the future, as the technology becomes cheaper. These are thermal printers, ink-jet printers and laser printers. They are fast in operation, printing a page, or even more in a second but currently they are too expensive to be widely used. The laser printer produces very high quality prints from a wide selection of character fonts. Not many business organisations can justify the present high cost of laser printing but costs are falling sharply and laser printing is likely to become more common place.

For more details of the above points, students are advised to refer to the study material Chapter-1.3.1.2

- (f) **Application Software:** Application software is a loosely defined subclass of computer software that employs the capabilities of a computer directly to a task that the user wishes to perform. This should be contrasted with system software which is involved in integrating the computer's various capabilities, but typically does not directly apply them in the performance of tasks that benefit the user. The term application refers to both the application software and its implementation.

User-written software tailors systems to meet the user's specific needs. User-written software includes spreadsheet templates, word processor macros, scientific simulations, graphics and animation scripts. Even email filters are a kind of user software. The program usually solves a particular application or problem. Examples of such programs are payroll, General accounting, sales statistics and inventory control etc.

- (g) **Online Chat:** can refer to any kind of communication over Internet, but is primarily meant to refer to direct one-on-one chat or text-based group chat (formally also known as synchronous conferencing), using tools such as instant messaging applications—computer programs, Internet Relay Chat.

Communication via a server that will allow multiple users to have "real-time" discussions, called "chats" on the Internet. Some chat groups are moderated; most however are unmoderated public discussions. Further, most chat servers allow the creation of "private" chat rooms where participants can "meet" for private discussions. "Chat" is a graphical form of an Internet service called IRC, or Internet Relay Chat. IRC was a replacement for a UNIX command called "talk." Using talk, and even IRC can be cumbersome. Chat clients, on the other hand, are available for all platforms and are graphical in nature, opening up their utility to the majority of Internet users.

- (h) **Extranet:** is an extension of an intranet that makes the latter accessible to outside companies or individuals with or without an intranet. It is also defined as a collaborative internet connection with other companies and business partners. Parts of an intranet are made available to customers or business partners for specific applications. The extranet is thus an extended intranet, which isolates business communication from the internet through secure solutions. Extranets provide the privacy and security of an intranet while retaining the global reach of the internet.

The key characteristics of an Extranet is that it extends the Intranet from one location to another across the Internet by securing data flows using cryptography and authorisation procedures, to another Intranet of a business partner. This way, Intranets of business partners, material suppliers, financial services, distributors, customers, etc. are connected to the Extranets by an agreement between the collaborating parties.

The emphasis is on allowing access to authorised groups through strictly controlled mechanisms. This business paradigm is turning out to be critical for e-commerce, allowing corporations to take advantage of any market opportunity anywhere, anytime and offering customized services and products.

- (i) **M-commerce (mobile commerce):** is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs) Known as next-generation e-commerce, m-commerce enables users to access the Internet without needing to find a place to plug in. The emerging technology behind m-commerce is based on the Wireless Application Protocol (WAP). Using Bluetooth technology, smart phones offer fax, e-mail, and phone capabilities all in one, paving the way for m-commerce to be accepted by an increasingly mobile workforce.

The industries affected by m-commerce include:

- ◆ Financial services, which includes mobile banking (when customers use their handheld devices to access their accounts and pay their bills) as well as brokerage services, in

which stock quotes can be displayed and trading conducted from the same handheld device

- ◆ Telecommunications, in which service changes, bill payment and account reviews can all be conducted from the same handheld device
- ◆ Service/retail, as consumers are given the ability to place and pay for orders on-the-fly
- ◆ Information services, which include the delivery of financial news, sports figures and traffic updates to a single mobile device

- (j) **Bluetooth:** is a telecommunications industry specification that describes how mobile phones, computers, and personal digital assistants (PDAs) can be easily interconnected using a short-range wireless connection. Using this technology, users of cellular phones, pagers, and personal digital assistants can buy a three-in-one phone that can double as a portable phone at home or in the office, get quickly synchronized with information in a desktop or notebook computer, initiate the sending or receiving of a fax, initiate a print-out, and, in general, have all mobile and fixed computer devices be totally coordinated.

Bluetooth requires that a low-cost transceiver chip be included in each device. The transceiver transmits and receives in a previously unused frequency band of 2.45 GHz that is available globally (with some variation of bandwidth in different countries). Connections can be point-to-point or multipoint. The maximum range is 10 meters. Data can be exchanged at a rate of 1 megabit per second (up to 2 Mbps in the second generation of the technology). A frequency hop scheme allows devices to communicate even in areas with a great deal of electromagnetic interference. Built-in encryption and verification is provided.

- (k) **EFT:** stands for "Electronic Funds Transfer" and represents the way the business can receive direct deposit of all payments from the financial institution to the company bank account. Once the user signs up, money comes to him directly and sooner than ever before. EFT is Fast, Safe, and means that the money will be confirmed in user's bank account quicker than if he had to wait for the mail, deposit the cheque, and wait for the funds to become available.

The payment mechanism moves money between accounts in a fast, paperless way.

- ◆ **Automated Teller Machines (ATMs):** Consumers can do their banking without the assistance of a teller, get cash, or to make deposits, pay bills, or transfer funds from one account to another electronically. These machines are used with a debit or EFT card and a code, which is often called a personal identification number or "PIN."
- ◆ **Point-of-Sale (POS) Transactions:** Some debit or EFT cards (sometimes referred to as check cards) can be used when shopping to allow the transfer of funds from the consumer's account to the merchant's. To pay for a purchase, the consumer presents an EFT card instead of a check or cash. Money is taken out of the consumer's account and put into the merchant's account electronically.
- ◆ **Preauthorized Transfers:** This is a method of automatically depositing to or withdrawing funds from an individual's account, when the account holder authorizes the bank or a third party (such as an employer) to do so.
- ◆ **Telephone Transfers:** Consumers can transfer funds from one account to another—from savings to checking, for example—or can order payment of specific bills by phone.

PAPER – 6B : STRATEGIC MANAGEMENT

1. State with reasons which of the following statements are correct/incorrect:
 - (a) According to Peter F Drucker businesses exist for making profits.
 - (b) Businesses function in an isolated manner.
 - (c) Under Porter's five forces model new entrants are insignificant source of competition.
 - (d) Competition is bad for organisations.
 - (e) Businesses have to respond to hostile environment with strategy.
 - (f) Strategies are not substitute for sound, alert and responsible management.
 - (g) Strategy is partly proactive and partly reactive
2. Briefly answer the following questions in 2-3 sentences each.
 - (a) What do you understand by demographic environment of a business?
 - (b) What is a strategy?
 - (c) What is diversification?
 - (d) Explain key factors for competitive success.
 - (e) What is divestment?
 - (f) Discuss network structure.
 - (g) Explain the concept of benchmarking?
3. Discuss the competitive environment of the business. What are the five forces of competitive analysis that are suggested by Michel Porter?
4. What do you understand by environmental influences on the environment? Discuss the problems associated with the efforts for understanding the environment.
5. What is decision making? What are the major dimensions of strategic decisions?
6. What is strategic vision? What are its elements?
7. Do you think that the companies should manage strategically? Discuss.
8. What is strategic analysis? How TOWS matrix can be used for analysing strategic situation of a company?
9. Discuss expansion as business strategy. What are the broad ways for businesses to expand?
10. Discuss the concept of Marketing Mix
11. Discuss the important areas where human resource manager can play a strategic role.
12. 'A good strategy may fail if it is not implemented properly'. Discuss.
13. Discuss strategic business unit as a form of organisation structure.
14. What is business process reengineering? How can it be implemented in an organisation?
15. Home Ease Ltd is a major manufacturer of home appliances in the country. The company manufactures water purifier, electric ovens, irons, juicers and choppers. Last two years have not been good for the company. It has lost its market share to its competitors and imports. The Chief Executive Officer, Kawaljit, is worried as the company has underperformed in its key financial indicators. Cheap Chinese products have also threatened the survival of the company. Opening of economy has also brought in manufacturers from around the world who also possess new technology and designs. The customers are attracted to these designs.

To discuss the matters Kawaljit called Gopinath, and Premnath to his office. Gopinath is a bright Chartered Accountant and is acting as head of Finance Department in the company. Premnath is an engineer and MBA with twelve years of experience in marketing of electronic goods. He has

joined company around six months back and is acting as head of marketing division and managing things at national level

Premnath felt that the company is facing problems as it has been too complacent. It has not responded to the changing environmental conditions and has not undertaken any formal strategic planning. He also felt that in the past the company has pursued objectives that have been conflicting to each other. In order to bring competitive advantage, Premnath suggested involving people from all levels in the organisation for developing business strategy. He also said that the sales people who are in touch with the customers and retailer should also be involved and greater emphasis should be placed on understanding the external environment. This will help company to assess and formulate ways to have competitive advantage using unique combination of resources, skills and capabilities within the environment.

However, Gopinath outlined the benefits of more formal top down approach to planning. Premnath argued that in the dynamic environment in which the company is operating involving too many people would be waste of time. The company has to incur huge cost and such an approach will only result in more confusion and chaos.

Read the above case and answer the following questions:

- (a) Do you think that involving too many people in the planning exercise would be a waste of time? Discuss.
- (b) If Kawaljit hires you as a consultant which approach will you advocate? Why?

SUGGESTED ANSWERS/HINTS

1. (a) Incorrect: Peter F Drucker was of the view that businesses cannot be explained in terms of profit. The economic criterion of maximising profits for a firm has little relevance in the present times. Profit maximization, in simple terms is selling at a higher price than the cost. Profit maximization is subject to the long-term perspective and includes development of wealth and several non-financial factors such as market position, goodwill, societal factors, relations and so on.
- (b) Incorrect: Businesses function within a whole gambit of relevant environment and have to negotiate their way through it. The extent to which the business thrives depends on the manner in which it interacts with its environment. A business which continually remains passive to the relevant changes in the environment is destined to gradually fade-away in oblivion. To be successful business has to not only recognise different elements of the environment but also respect, adapt to or have to manage and influence them. The business must continuously monitor and adapt to the environment if it is to survive and prosper.
- (c) Incorrect: Porter's model considers new entrant as a significant and powerful source of competition. The new capacity and product range they bring in throw up new competitive pressure. And the bigger the new entrant, the more severe the competitive effect. New entrants also place a limit on prices and affect the profitability of existing players.
- (d) Incorrect: All organizations have competition. Multinationals and large organizations clash directly on every level of product and service. Mid-sized and small business also chase same customers and find that prices and product quality are bounded by the moves of their competitors. Even large public sector monopolies are gradually getting privatised and facing competition.
- (e) A typical dictionary will define the word strategy as something that has to do with war and deception of an enemy. In business organizational context the term is not much different. Businesses have to respond to a dynamic and often hostile environment for pursuit of their mission using strategy.
- (f) Strategy can never be perfect, flawless and optimal. It is in the very nature of strategy that it is flexible and pragmatic; it is art of the possible; it does not preclude second-best choices,

trade-offs, sudden emergencies, pervasive pressures, failures and frustrations. However, in a sound strategy, allowances are made for possible miscalculations and unanticipated events.

- (g) A company's strategy is typically a blend of (1) proactive actions on the part of managers to improve the company's market position and financial performance and (2) as needed reactions to unanticipated developments and fresh market conditions. The biggest portion of a company's current strategy flows from previously initiated actions and business approaches that are working well enough to merit continuation and newly launched managerial initiatives to strengthen the company's overall position and performance. However, things happen that cannot be fully anticipated or planned for.
2. (a) The term demographics denote characteristics of population in an area, district, country or in world. It includes factors such as race, age, income, educational attainment, asset ownership, home ownership, employment status and location. Data with respect to these factors within a demographic variable, and across households, are both of interest, as well as trends over time to businessmen in addition to economist.
 - (b) Businesses have to respond to a dynamic and often hostile environment for pursuit of their mission. Strategy seeks to relate the goals of the organization to the means of achieving them. An organisation's strategy is its long range blueprint of desired image, direction and destination what it wants to be, what it wants to do and where it wants to go.
 - (c) Diversification is defined as entry into new products or product lines, new services or new markets, involving substantially different skills, technology and knowledge. Diversification happens when an established firm introduces a new product which has little or no affinity with its present product line and which is meant for a new class of customers different from the firm's existing customer groups.
 - (d) Key Success Factors (KSFs) are those things that most affect industry members' ability to prosper in the marketplace - the particular strategy elements, product attributes, resources, competencies, competitive capabilities, and business outcomes that spell the difference between profit and loss and, ultimately, between competitive success or failure.
 - (e) Divestment strategy involves the sale or liquidation of a portion of business, or a major division, profit centre or SBU. Divestment is usually a part of rehabilitation or restructuring plan and is adopted when a turnaround has been attempted but has proved to be unsuccessful. The option of a turnaround may even be ignored if it is obvious that divestment is the only answer.
 - (f) A newer and somewhat more radical organizational design, the network structure is an example of what could be termed a "non-structure" by its virtual elimination of in house business functions and outsourcing many of them. A corporation organized in this manner is often called a virtual organization because it is composed of a series of project groups or collaborations linked by constantly changing non-hierarchical, cobweb-like networks.
 - (g) Benchmarking is an approach of setting goals and measuring productivity based on best industry practices. It is a process of continuous improvement in search for competitive advantage. It measures and strives to better a company's products, services and practices against those of its competitors or other acknowledged leaders in their field.
3. All organizations have competition. Multinationals and large organizations clash directly on every level of product and service. Mid-sized and small businesses chase same customers and find that prices and product quality are bounded by the moves of their competitors. For a single business organization the competition spells out freedom of entry and exit in the market and affects its prices and scale of operations. Businesses have to consider competitors' strategies, profits levels, costs, products and services when preparing and implementing their business plans.

Thinking strategically about a company's competitive environment entails using some well defined concepts and analytical tools. Michael Porter provided a framework that models an industry as

being influenced by five forces. This model holds that the state of competition in an industry is a composite of competitive pressures operating in five areas of the overall market:

- ◆ Competitive pressures associated with the market manoeuvring and jockeying for buyer patronage that goes on among rival sellers in the industry.
- ◆ Competitive pressures associated with the threat of new entrants into the market.
- ◆ Competitive pressures coming from the attempts of companies in other industries to win buyers over to their own substitute products.
- ◆ Competitive pressures stemming from supplier bargaining power and supplier-seller collaboration.
- ◆ Competitive pressures stemming from buyer bargaining power and seller-buyer Collaboration.

Students may refer to chapter 1 for elaborate discussion.

4. Businesses function within its relevant environment and have to continuously interact with it. To be successful businesses have to recognise different elements of the environment. They have to adapt or evolve themselves or have to manage and influence the elements. Disturbances in the environment may spell extreme threats or open up new opportunities for the firm. A successful business has to identify, appraise, and respond to the various opportunities and threats in its environment.

Business functions as a part of broader environment. The inputs in the form of human, physical, financial and other related resources are drawn from the environment. The business converts these resources through various processes into outputs of products and/or services. The latter are partly exchanged with the external client groups, say customers. The exchange process brings in some surplus (or profits, reputation, good public image and so on) to the business, which could be stored and used for further development and growth.

In trying to understand the environment, managers face different problems as follows:

- ◆ The environment encapsulates many different influences; the difficulty is in making sense of this diversity in a way which can contribute to strategic decision-making. Listing all conceivable environmental influences may be possible, but it may not be of much use.
- ◆ The second difficulty is that of uncertainty. Managers typically claim that the pace of technological change and the speed of global communications mean more and faster change now than ever before. It is very difficult to understand future external influences on an organization.
- ◆ Managers are no different from other individuals in the way they cope with complexity. They tend to simplify such complexity by focusing on aspects of the environment, which, perhaps, have been historically important, or confirm prior views. These are the natural behaviour of everyone faced with complexity.

Refer to chapter 1.

5. Decision making is a managerial process and function of choosing a particular course of action out of several alternative courses for the purpose of accomplishment of the organizational goals. Decisions may relate to general day to day operations. They may be major or minor. They may also be strategic in nature. Strategic decisions are different in nature than all other decisions which are taken at various levels of the organization during day-to-day working of the organizations. The major dimensions of strategic decisions are given below:

- ◆ Strategic issues require top-management decisions
- ◆ Strategic issues involve the allocation of large amounts of company resources.
- ◆ Strategic issues are likely to have a significant impact on the long term prosperity of the firm.
- ◆ Strategic issues are future oriented.

- ◆ Strategic issues usually have major multifunctional or multi-business consequences.
- ◆ Strategic issues necessitate consideration of factors in the firm's external environment.

Refer to chapter 2.

6. A strategic vision delineates organisation's aspirations for the business, providing a panoramic view of the position where the organisation is going. A strategic vision points an organization in a particular direction, charts a strategic path for it to follow in preparing for the future, and moulds organizational identity. A clearly articulated strategic vision communicates management's aspirations to stakeholders and helps steer the energies of company personnel in a common direction.

A Strategic vision is a road map of a company's future – providing specifics about technology and customer focus, the geographic and product markets to be pursued, the capabilities it plans to develop, and the kind of company that management is trying to create.

There are three elements of a strategic vision as follows:

- ◆ Coming up with a mission statement that defines what business the company is presently in and conveys the essence of "Who we are and where we are now?"
- ◆ Using the mission statement as basis for deciding on a long-term course making choices about "Where we are going?"
- ◆ Communicating the strategic vision in clear, exciting terms that arouse organization wide commitment.

Refer to chapter 2.

7. In today's competitive environment strategic management is must. Strategic management starts with developing a company mission (to give it direction), objectives and goals (to give it means and methods for accomplishing its mission), business portfolio (to allow management to utilize all facets of the organization), and functional plans (plans to carry out daily operations from the different functional disciplines). To meet changing conditions in their industries, companies need to be farsighted and visionary, and must develop long-term strategies. Strategic planning, an important component of strategic management, involves developing a strategy to meet competition and ensure long-term survival and growth. Strategic management provides the framework for all the major business decisions of an enterprise such as decisions on businesses, products and markets, manufacturing facilities, investments and organizational structure. In a successful corporation, strategic planning works as the pathfinder to various business opportunities; simultaneously, it also serves as a corporate defence mechanism, helping the firm avoid costly mistakes in product market choices or investments.

Strategic management has the ultimate burden of providing a business organization with certain core competencies and competitive advantages in its fight for survival and growth.

Refer chapter 2.

8. Refer to chapter 3. Strategy formulation is not a task in which managers can get by with opinions, good instincts, and creative thinking. Judgements about what strategy to pursue need to flow directly from solid analysis of a company's external environment and internal situation. The two most important situational considerations are (i) industry and competitive conditions and (ii) a company's own competitive capabilities, resources, internal strengths and weaknesses, and market position. The analytical sequence is from strategic appraisal of the company's external and internal situation, to evaluation of alternatives, to choice of strategy. Accurate diagnosis of the company's situation is necessary managerial preparation for deciding on a sound long-term direction, setting appropriate objectives, and crafting a winning strategy. Heinz Weihrich has developed a matrix called TOWS matrix by comparing strengths and weaknesses of organization with that of market opportunities and threats.
9. While expanding an organisations seeks significant growth. This growth can be within the current businesses (intensification) or by entering new businesses (diversification). New businesses can

be related or unrelated. Students may refer to chapter 4 and briefly discuss different ways for intensification and diversification.

10. Marketing mix forms an important part of overall competitive marketing strategy. The marketing mix is the set of controllable marketing variables that the firm blends to produce the response it wants in the target market. The marketing mix consists of everything that the firm can do to influence the demand for its product. These variables are often referred to as the "4 Ps." The 4 Ps stand for product, price, place and promotion. An effective marketing program blends all of the marketing mix elements into a coordinated program designed to achieve the company's marketing objectives by delivering value to consumers. The 4 Ps are from a marketer's angle. When translated to buyers angle they may be termed as 4 Cs. Product may be referred as customer solution, price as customer cost, place as convenience and promotion as communication.

- ◆ Product stands for the "goods-and-service" combination the company offers to the target market. Strategies are needed for managing existing product over time adding new ones and dropping failed products. Strategic decisions must also be made regarding branding, packaging and other product features such as warranties.

Products and markets are infinitely dynamic. An organization has to capture such dynamics through a set of policies and strategies. Some products have consistent customer demand over long period of time while others have short and fleeting life spans. There are products that have wide range of quality and workmanship and these also change over time. There are industrial or consumer products, essentials or luxury products, durables or perishables.

Products can be differentiated on the basis of size, shape, colour, packaging, brand names, after-sales service and so on. Organizations seek to hammer into customers' minds that their products are different from others. It does not matter whether the differentiation is real or imaginary. Quite often the differentiation is psychological rather than physical. It is enough if customers are persuaded to believe that the marketers product is different from others.

Organizations formalize product differentiation through christening 'brand names' to their respective products. These are generally reinforced with legal sanction and protection. Brands enable customers to identify the product and the organization behind it. The products' and even firms' image is built around brand through advertising and other promotional strategies. Customers tend to develop strong brand loyalty for a particular product over a period of time.

- ◆ Price stands for the amount of money customers have to pay to obtain the product. Necessary strategies pertain to the location of the customers, price flexibility, related items within a product line and terms of sale. The price of a product is its composite expression of its value and utility to the customer, its demand, quality, reliability, safety, the competition it faces, the desired profit and so on.

In an industry there would be organizations with low cost products and other organizations with high costs. The low cost organizations may adopt aggressive pricing strategy as they enjoy more freedom of action in respect of their prices. They may also afford selective increase in costs to push their sales.

Theoretically, organizations may also adopt cost plus pricing wherein a margin is added to the cost of the product to determine its price. However, in the competitive environment such an approach may not be feasible. More and more companies of today have to accept the market price with minor deviations and work towards their costs. They reduce their cost in order to maintain their profitability.

For a new product pricing strategies for entering a market needs to be designed. In pricing a really new product at least three objectives must be kept in mind.

- (a) Making the product acceptable to the customers.
- (b) Producing a reasonable margin over cost.
- (c) Achieving a market that helps in developing market share.

For a new product an organization may either choose to skim or penetrate the market. In skimming prices are set at a very high level. The product is directed to those buyers who are relatively price insensitive but sensitive to the novelty of the new product. For example call rates of mobile telephony were set very high initially. Even the incoming calls were charged. Since the initial offtake of the product is low, high price, in a way, helps in rationing of supply in favour of those who can afford it. In penetration firm keeps a temptingly low price for a new product which itself is selling point. A very large number of the potential consumer may be able to afford and willing to try the product.

- ◆ Place stands for company activities that make the product available to target consumers. One of the most basic marketing decision is choosing the most appropriate marketing channel. Strategies should be taken for the management of channel(s) by which ownership of product is transferred from producers to customers and in many cases, the system(s) by which goods are moved from where they are produced from they are purchases by the final customers. Strategies applicable to the middleman such as wholesalers and retails must be designed.

The distribution policies of a company are important determinants of the functions of marketing. The decision to utilize a particular marketing channel or channels sets the pattern of operations of sales force. We will learn more about place when we study logistics later in this chapter.

- ◆ Promotion stands for activities that communicate the merits of the product and persuade target consumers to buy it. Strategies are needed to combine individual methods such as advertising, personal selling, and sales promotion into a coordinated campaign. In addition promotional strategies must be adjusted as a product move from an earlier stages from a later stage of its life.

Modern marketing is highly promotional oriented. Organizations strive to push their sales and market standing on a sustained basis and in a profitable manner under conditions of complex direct and indirect competitive situations. Promotion also acts as an impetus to marketing. It is simultaneously a communication, persuasion and conditioning process. There are at least four major direct promotional methods or tools – personal selling, advertising, publicity and sales promotion. They are briefly explained as follows:

- (i) **Personal Selling:** Personal selling is one of the oldest forms of promotion. It involves face-to-face interaction of sales force with the prospective customers and provides a high degree of personal attention to them. In personal selling, oral communication is made with potential buyers of a product with the intention of making a sale. It may initially focus on developing a relationship with the potential buyer, but end up with efforts for making a sale. Personal selling suffers from a very high costs as sales personnel are expensive. They can physically attend only one customer at a time. Thus it is not a cost-effective way of reaching a large number of people.
- (ii) **Advertising:** Advertising is a non-personal, highly flexible and dynamic promotional method. The media for advertisings are several such as pamphlets, brochures, newspapers, magazines, hoardings, display boards, radio, television and internet. Choice of appropriate media is important for effectiveness of the message. The media may be local, regional, or national. The type of the message, copy, illustration are a matter of choice and creativity. Advertising may be directed towards consumers, middlemen or opinion leaders. Advertising is likely to succeed in promoting the sales of an organization but its effectiveness in respect to the expenditure can not be directly measured. Sales is a function of several variables out of which advertising is only one.
- (iii) **Publicity:** Publicity is also a non-personal form of promotion similar to advertising. However, no payments are made to the media as in case of advertising. Organizations skillfully seek to promote themselves and their product without payment. Publicity is communication of a product, brand or business by placing information about it in the media without paying for the time or media space directly. Thus it is way of reaching

customers with negligible cost. Basic tools for publicity are press releases, press conferences, reports, stories, and internet releases. These releases must be of interest to the public.

- (iv) Sales promotion: Sales promotion is an omnibus term that includes all activities that are undertaken to promote the business but are not specifically included under personal selling, advertising or publicity. Activities like discounts, contests, money refunds, installments, kiosks, exhibitions and fairs constitute sales promotion. All these are meant to give a boost to the sales. Sales promotion done periodically may help in getting a larger market share to an organization.

Expanded Marketing Mix: Typically, all organizations use a combination of 4 Ps in some form or the other. However, the above elements of marketing mix are not exhaustive. Few more elements may form part of an organizational marketing mix strategy:

- ◆ People: all human actors who play a part in delivery of the market offering and thus influence the buyer's perception, namely the firm's personnel and the customer.
- ◆ Physical evidence: the environment in which the market offering is delivered and where the firm and customer interact.
- ◆ Process: the actual procedures, mechanisms and flow of activities by which the product / service is delivered.

(Note: The answer is elaborate and includes pre examination note on the topic)

11. The human resource strategy of business should reflect and support the corporate strategy. An effective human resource strategy includes the way in which the organization plans to develop its employees and provide them suitable opportunities and better working conditions so that their optimal contribution is ensured. Strategic human resource management may be defined as the linking of human resource management with strategic goals and objectives to improve business performance and develop organizational culture that fosters innovation and flexibility. The success of an organization depends on its human resources. The prominent areas where the human resource manager can play strategic role are as follows:

- (i) Providing purposeful direction.
- (ii) Creating competitive atmosphere .
- (iii) Facilitation of change.
- (iv) Diversion of workforce.
- (v) Empowerment of human resources.
- (vi) Building core competency.
- (vii) Development of works ethics and culture.

Refer to chapter 5.

12. Refer to chapter 6. Strategy implementation concerns the managerial exercise of putting a freshly chosen strategy into place. Strategy execution deals with supervising the ongoing pursuit of strategy, making it work, improving the competence with which it is executed and showing measurable progress in achieving the targeted results. Strategic implementation is concerned with translating a decision into action, with presupposes that the decision itself (i.e., the strategic choice) was made with some thought being given to feasibility and acceptability. The allocation of resources to new courses of action will need to be undertaken, and there may be a need for adapting the organization's structure to handle new activities as well as training personnel and devising appropriate system.

There are situations where an organisation formulates a very competitive strategy, but is showing difficulties in implementing it successfully. This can be due to various factors, such as the lack of experience, the lack of necessary resources, missing leadership and so on. Unless corrective actions are taken the strategy will fail.

13. As the number, size, and diversity of divisions in an organization increase, controlling and evaluating divisional operations become increasingly difficult for strategists. Increases in sales often are not accompanied by similar increases in profitability. The span of control becomes too large at top levels of the firm. In these instances, the SBU structure is appropriate. Also in multidivisional organizations, an SBU structure can greatly facilitate strategy implementation efforts. The SBU structure is composed of operating units where each unit represents a separate business to which the top corporate officer delegates responsibility for day-to-day operations and business unit strategy to its managers. Refer to chapter 6.
14. Business process reengineering (BPR) refers to the analysis and redesign of workflows and processes both within and between the organizations. The orientation of the redesign effort is radical, i.e., it is a total deconstruction and rethinking of a business process in its entirety, unconstrained by its existing structure and pattern. Its objective is to obtain quantum gains in the performance of the process in terms of time, cost, output, quality, and responsiveness to customers. The approach to BPR can be classified in the following steps:
 - (i) Determining objectives and framework.
 - (ii) Identify customers and determine their needs.
 - (iii) Study the existing process.
 - (iv) Formulate a redesign process plan.
 - (v) Implement the redesign.
15. This case is for your practise. Remember, there is no rigid solution to a case problem. You can arrive at your own solutions. The opinions differ and your approach will also be different. However, you must offer supporting evidence for your views and judgements. You should draw inferences from theoretical concepts of strategic management and integrate them in the decisions. You should not rely upon unsupported opinions and over generalisations and clearly demonstrate that your interpretations are reasonable, logical and objective.



The Institute of Chartered Accountants of India

FINAL (NEW) COURSE

SYLLABUS

GROUP I

- Paper – 1 : Financial Reporting
- Paper – 2 : Strategic Financial Management
- Paper – 3 : Advanced Auditing and Professional Ethics
- Paper – 4 : Corporate and Allied Laws

GROUP II

- Paper – 5 : Advanced Management Accounting
- Paper – 6 : Information Systems Control and Audit
- Paper – 7 : Direct Tax Laws
- Paper – 8 : Indirect Tax Laws

PAPER – 1 : FINANCIAL REPORTING
(One paper – Three hours – 100 marks)

Level of Knowledge: Advanced knowledge

Objectives:

- (a) To gain ability to analyze financial statements including consolidated financial statements of group companies and financial reports of various types of entities,
- (b) To gain ability to apply valuation principles,
- (c) To familiarise with recent developments in the area of financial reporting,
- (d) To gain ability to solve financial reporting and valuation cases.

Contents:

1. Accounting Standards, Accounting Standards Interpretations and Guidance Notes on various accounting aspects issued by the ICAI and their applications.
2. Overview of International Accounting Standards (IAS)/International Financial Reporting Standards (IFRS), Interpretations by International Financial Reporting Interpretation Committee (IFRIC), Significant difference vis-a-vis Indian Accounting Standards.
Understanding of US GAAP,
Applications of IFRS and US GAAP.
3. Corporate Financial Reporting - Issues and problems with special reference to published financial statements.
4. Accounting for Corporate Restructuring (including inter-company holdings).
5. Consolidated Financial Statements of Group Companies Concept of a Group, purposes of consolidated financial statements minority interest, Goodwill, Consolidation procedures – Minority interests, Goodwill, Treatment of pre- acquisition and post-acquisition profit.
Consolidation with two or more subsidiaries, consolidation with foreign subsidiaries.
Consolidated profit and loss account, balance sheet and cash flow statement.
Treatment of investment in associates in consolidated financial statements.
Treatment of investments in joint ventures in consolidated financial statements.
6. Accounting and Reporting of Financial Instruments
Meaning, recognition, derecognition and offset, compound financial instruments
Measurement of financial instruments
Hedge accounting
Disclosures
7. Share based payments
Meaning, Equity settled transactions, Transaction with employees and non- employees
Determination of fair value of equity instruments
Vesting conditions
Modification, cancellation and settlement
Disclosures
8. Financial Reporting by Mutual funds, Non-banking finance companies, Merchant bankers, Stock and commodity market intermediaries.
9. Valuation
(a) Concept of Valuation

- (b) Valuation of Tangible Fixed Assets
 - (c) Valuation of Intangibles including Brand Valuation and Valuation of Goodwill
 - (d) Valuation of Liabilities
 - (e) Valuation of Shares
 - (f) Valuation of Business
10. Developments in Financial Reporting
- (a) Value Added Statement
 - (b) Economic Value Added, Market Value Added, Shareholders' Value Added
 - (c) Human Resource Reporting
 - (d) Inflation Accounting

Note: If either old Accounting Standards (ASs), Accounting Standards Interpretations (ASIs), Guidance Notes (GNs), Announcements and Limited Revisions to ASs are withdrawn or new ASs, GNs, Announcements and Limited Revisions to AS are issued by the Institute of Chartered Accountants of India in place of existing ASs, ASIs, GNs, Announcements and Limited Revisions to AS, the syllabus will accordingly include/exclude such new developments in the place of the existing ones with effect from the date to be notified by the Institute.

PAPER – 2 : STRATEGIC FINANCIAL MANAGEMENT

(One paper – Three hours – 100 marks)

Level of Knowledge: Advanced knowledge

Objective:

To apply financial management theories and techniques for strategic decision making.

Contents:

1. Financial Policy and Corporate Strategy
 - Strategic decision making framework
 - Interface of Financial Policy and strategic management
 - Balancing financial goals vis-à-vis sustainable growth.
2. Project Planning and Capital Budgeting
 - Feasibility study
 - Cash flow Projections – Impact of taxation, depreciation, inflation and working capital
 - Capital Budgeting Decisions - Certainty Equivalent approach, Evaluation of Risky Investment Proposals, Risk and Return analysis, Simulation and decision tree analysis, Sensitivity analysis, Capital Rationing, Adjusted Net Present Value, Replacement decisions, Application of Real Options in capital budgeting, Impact of inflation on capital budgeting decisions
 - Preparation of Project Report
 - Social cost benefit analysis.
3. Leasing decision including cross border leasing
4. Dividend Decisions
 - Dividend theories, Determinants of dividend policies.
5. (a) Indian Capital Market including role of various primary and secondary market institutions

- (b) Capital Market Instruments
 - Financial derivatives – stock futures, stock options, index futures, index options
 - Option valuation techniques : Binomial model, Black Scholes Option Pricing Model, Greeks – Delta, Gamma, Theta, Rho and Vega
 - Pricing of Futures – Cost of carry model
 - Imbedded derivatives
- (c) Commodity derivatives
- (d) OTC derivatives -Swaps, Swaptions, Forward Rate Agreements (FRAs), Caps, Floors and Collors.
- 6. Security Analysis
 - Fundamental analysis - Economic analysis, Industry analysis and Company Analysis
 - Bond valuation, Price Yield relationship, Bond Price forecasting – application of duration and convexity, Yield curve strategies
 - Technical Analysis – market cycle model and basic trend identification, different types of charting, support and resistance, price patterns, moving averages, Bollinger Bands, momentum analysis.
- 7. Portfolio Theory and Asset Pricing
 - Efficient Market Theory – Random walk theory ; Markowitz model of risk return optimization
 - Capital Asset Pricing Model (CAPM)
 - Arbitrage Pricing Theory (APT)
 - Sharpe Index Model
 - Portfolio Management - Formulation, Monitoring and Evaluation
 - Equity Style Management
 - Principles and Management of Hedge Funds
 - International Portfolio Management.
- 8. Financial Services in India
 - Investment Banking
 - Retail Banking
 - On Line Share Trading
 - Depository Service.
- 9. (a) Mutual Funds: Regulatory framework, formulation, monitoring and evaluation of various schemes of Mutual funds, Money market mutual funds.
 - (b) Exchange Traded Funds.
- 10. Money Market operations
- 11. (a) Foreign Direct Investment, Foreign Institutional Investment.
 - (b) International Financial Management
 - Raising of capital abroad - American Depository Receipts, Global Depository Receipts, External Commercial Borrowings and Foreign Currency Convertible Bonds
 - International Capital Budgeting
 - International Working Capital Management.
- 12. Foreign Exchange Exposure and Risk Management
 - Exchange rate determination, Exchange rate forecasting
 - Foreign currency market

Foreign exchange derivatives – Forward, futures, options and swaps

Management of transaction, translation and economic exposures

Hedging currency risk.

13. Mergers, Acquisitions and Restructuring

Meaning of mergers and acquisition, categories, purposes

Process of mergers and acquisition – Identification and valuation of the target, acquisition through negotiation, due diligence, post – merger integration

Legal and regulatory requirements

Merger and Acquisition agreement

Reverse merger

Potential adverse competitive effects of mergers

Corporate Takeovers: Motivations, Co-insurance effect, Cross-border takeovers, Forms of takeovers, Takeover defenses

Going Private and Other Control Transactions: Leveraged Buyouts (LBOs), Management Buyouts (MBOs), Spin Offs and Asset Divestitures

Corporate Restructuring : Refinancing and rescue financing, reorganizations of debtors and creditors, Sale of assets, targeted stock offerings, downsizing and layoff programmes, negotiated wage give-backs, employee buyouts.

PAPER – 3 : ADVANCED AUDITING AND PROFESSIONAL ETHICS

(One Paper- Three hours - 100 marks)

Level of Knowledge: Advanced knowledge

Objectives:

- (a) To gain expert knowledge of current auditing practices and procedures and apply them in auditing engagements,
- (b) To develop ability to solve cases relating to audit engagements.

Contents:

1. Auditing Standards, Statements and Guidance Notes

Auditing and Assurance Standards (AASs); Statements and Guidance Notes on Auditing issued by the ICAI; Significant differences between Auditing and Assurance Standards and International Standards on Auditing.

2. Audit strategy, planning and programming

Planning the flow of audit work; audit strategy, planning programme and importance of supervision: review of audit notes and working papers; drafting of reports; principal's ultimate responsibility; extent of delegation; control over quality of audit work; reliance on the work of other auditor, internal auditor or an expert.

3. Risk Assessment and Internal Control

Evaluation of internal control procedures; techniques including questionnaire, flowchart; internal audit and external audit, coordination between the two.

4. Audit under computerized information system (CIS) environment

Special aspects of CIS Audit Environment, need for review of internal control especially procedure controls and facility controls. Approach to audit in CIS Environment, use of computers for internal and management audit purposes: audit tools, test packs, computerized audit programmes; Special Aspects in Audit of E-Commerce Transaction.

5. Special audit techniques
 - (a) Selective verification; statistical sampling; Special audit procedures; physical verification of assets, direct confirmation of debtors and creditors
 - (b) Analytical review procedures
 - (c) Risk-based auditing.
6. Audit of limited companies

Statutory requirements under the Companies Act 1956; Audit of branches: joint audits; Dividends and divisible profits % financial, legal, and policy considerations.
7. Rights, duties, and liabilities of auditors; third party liability.
8. Audit reports; qualifications, notes on accounts, distinction between notes and qualifications, detailed observations by the statutory auditor to the management vis-a-vis obligations of reporting to the members.
9. Audit Committee and Corporate Governance
10. Audit of Consolidated Financial Statements, Audit Reports and Certificates for Special Purpose engagements; Certificates under the Payment of Bonus Act, import/export control authorities, etc.; Specific services to non-audit clients; Certificate on Corporate Governance.
11. Special features of audit of banks, insurance companies, co-operative societies and non-banking financial companies.
12. Audit under Fiscal Laws, viz, Direct and Indirect Tax Laws.
13. Cost audit
14. Special audit assignments like audit of bank borrowers, audit of stock and commodity exchange intermediaries and depositories; inspection of special entities like banks, financial institutions, mutual funds, stock brokers.
15. Special features in audit of public sector companies. Directions of Comptroller and Auditor General of India under Section 619; Concepts of propriety and efficiency audit.
16. Internal audit, management and operational audit Nature and purpose, organisation, audit programme, behavioural problems; Internal Audit Standards issued by the ICAI; Specific areas of management and operational audit involving review of internal control, purchasing operations, manufacturing operations, selling and distribution, personnel policies, systems and procedures. Aspects relating to concurrent audit.
17. Investigation and Due Diligence.
18. Concept of peer review
19. Salient features of Sarbanes – Oxley Act, 2002 with special reference to reporting on internal control.
20. Professional Ethics

Code of Ethics with special reference to the relevant provisions of The Chartered Accountants Act, 1949 and the Regulations thereunder.

PAPER – 4 : CORPORATE AND ALLIED LAWS

(One paper – Three hours – 100 marks)

Section A : Company Law (70 Marks)

Level of Knowledge: Advanced knowledge

Objective:

To be able to analyze and apply various provisions of the Companies Act in practical situations

Contents:

1. The Companies Act, 1956, Rules and Regulations thereunder in its entirety with specific reference to
 - (a) Accounts and audit
 - (b) Dividend
 - (c) Directors - powers, managerial remuneration
 - (d) Meetings, powers of the Board and related party transactions
 - (e) Inspection and Investigation
 - (f) Compromises, Arrangements and Reconstructions
 - (g) Prevention of Oppression and Mismanagement
 - (h) Revival and Rehabilitation of Sick Industrial Companies
 - (i) Corporate Winding up and Dissolution
 - (j) Producer Companies
 - (k) Companies incorporated outside India
 - (l) Offences and Penalties
 - (m) E-governance
2. Corporate Secretarial Practice – Drafting of Resolution, Minutes, Notices and Reports

Section B : Allied Laws (30 Marks)

Objective:

To develop ability to analyse the requirements of laws stated in the Section.

Contents:

3. An overview of the following laws –
 - (a) The Securities and Exchange Board of India Act, 1992, Rules, Regulations and Guidelines issued thereunder.
 - (b) The Securities Contracts (Regulation) Act, 1956
 - (c) The Foreign Exchange Management Act, 1999
 - (d) The Competition Act, 2002
 - (e) The Banking Regulation Act, 1949, The Insurance Act, 1938. The Insurance Regulatory and Development Authority Act, 1999. The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002
 - (f) The Prevention of Money Laundering Act, 2002
4. Interpretation of Statutes, Deeds and Documents.

PAPER – 5 : ADVANCED MANAGEMENT ACCOUNTING

(One paper – Three hours – 100 marks)

Level of Knowledge: Advanced knowledge

Objective:

To apply various management accounting techniques to all types of organizations for planning, decision making and control purposes in practical situations.

To develop ability to apply quantitative techniques to business problems

1. Cost Management

- (a) Developments in the business environment; just in time; manufacturing resources planning; (MRP); automated manufacturing; synchronous manufacturing and back flush systems to reflect the importance of accurate bills of material and routings; world class manufacturing; total quality management.
- (b) Activity based approaches to management and cost analysis
- (c) Analysis of common costs in manufacturing and service industry
- (d) Techniques for profit improvement, cost reduction, and value analysis
- (e) Throughput accounting
- (f) Target costing; cost ascertainment and pricing of products and services
- (g) Life cycle costing
- (h) Shut down and divestment.

2. Cost Volume Profit Analysis

- (a) Relevant cost
- (b) Product sales pricing and mix
- (c) Limiting factors
- (d) Multiple scarce resource problems
- (e) Decisions about alternatives such as make or buy, selection of products, etc.

3. Pricing Decisions

- (a) Pricing of a finished product
- (b) Theory of price
- (c) Pricing policy
- (d) Principles of product pricing
- (e) New product pricing
- (f) Pricing strategies
- (g) Pricing of services
- (h) Pareto analysis

4. Budgets and Budgetary Control

The budget manual, Preparation and monitoring procedures, Budget variances, Flexible budgets, Preparation of functional budget for operating and non-operating functions, Cash budgets, Capital expenditure budget, Master budget, Principal budget factors.

5. Standard Costing and Variance Analysis

Types of standards and sources of standard cost information; evolution of standards, continuous - improvement; keeping standards meaningful and relevant; variance analysis; disposal of variances.

- (a) Investigation and interpretation of variances and their inter relationship
- (b) Behavioural considerations.
- 6. Transfer pricing
 - (a) Objectives of transfer pricing
 - (b) Methods of transfer pricing
 - (c) Conflict between a division and a company
 - (d) Multi-national transfer pricing.
- 7. Cost Management in Service Sector
- 8. Uniform Costing and Inter firm comparison
- 9. Profitability analysis - Product wise / segment wise / customer wise
- 10. Financial Decision Modeling
 - (a) Linear Programming
 - (b) Network analysis - PERT/CPM, resource allocation and resource leveling
 - (c) Transportation problems
 - (d) Assignment problems
 - (e) Simulation
 - (f) Learning Curve Theory
 - (g) Time series forecasting
 - (h) Sampling and test of hypothesis

PAPER – 6 : INFORMATION SYSTEMS CONTROL AND AUDIT

(One Paper – Three hours – 100 marks)

Level of knowledge: Advanced knowledge

Objective:

To gain application ability of necessary controls, laws and standards in computerized Information system.

Contents:

1. Information Systems Concepts
 - General Systems Concepts – Nature and types of systems, nature and types of information, attributes of information.
 - Management Information System – Role of information within business
 - Business information systems –various types of information systems – TPC, MIS, DSS, EIS, ES
2. Systems Development Life Cycle Methodology
 - Introduction to SDLC/Basics of SDLC
 - Requirements analysis and systems design techniques
 - Strategic considerations : Acquisition decisions and approaches
 - Software evaluation and selection/development
 - Alternate development methodologies- RAD, Prototype etc
 - Hardware evaluation and selection
 - Systems operations and organization of systems resources

Systems documentation and operation manuals
 User procedures, training and end user computing
 System testing, assessment, conversion and start-up
 Hardware contracts and software licenses
 System implementation
 Post-implementation review
 System maintenance
 System safeguards
 Brief note on IS Organisation Structure

3. Control objectives

(a) Information Systems Controls

Need for control
 Effect of computers on Internal Audit
 Responsibility for control – Management, IT, personnel, auditors
 Cost effectiveness of control procedure
 Control Objectives for Information and related Technology (COBIT)

(b) Information Systems Control Techniques

Control Design: Preventive and detective controls, Computer-dependent control, Audit trails, User Controls (Control balancing, Manual follow up)
 Non-computer-dependent (user) controls: Error identification controls, Error investigation controls, Error correction controls, Processing recovery controls

(c) Controls over system selection, acquisition/development

Standards and controls applicable to IS development projects
 Developed / acquired systems
 Vendor evaluation
 Structured analysis and design
 Role of IS Auditor in System acquisition/selection

(d) Controls over system implementation

Acceptance testing methodologies
 System conversion methodologies
 Post implement review
 Monitoring, use and measurement

(e) Control over System and program changes

Change management controls
 Authorization controls
 Documentation controls
 Testing and quality controls
 Custody, copyright and warranties
 Role of IS Auditor in Change Management

- (f) Control over Data integrity, privacy and security
 - Classification of information
 - Logical access controls
 - Physical access controls
 - Environmental controls
 - Security concepts and techniques – Cryptosystems, Data Encryption Standards (DES), Public Key Cryptography & Firewalls
 - Data security and public networks
 - Monitoring and surveillance techniques
 - Data Privacy
 - Unauthorised intrusion, hacking, virus control
 - Role of IS Auditor in Access Control
- 4. Audit Tests of General and Automated Controls
 - (a) Introduction to basics of testing (reasons for testing);
 - (b) Various levels/types of testing such as: (i) Performance testing, (ii) Parallel testing, (iii) Concurrent Audit modules/Embedded audit modules, etc.
- 5. Risk assessment methodologies and applications: (a) Meaning of Vulnerabilities, Threats, Risks, Controls, (b) Fraud, error, vandalism, excessive costs, competitive disadvantage, business, interruption, social costs, statutory sanctions, etc. (c) Risk Assessment and Risk Management, (d) Preventive/detective/corrective strategies
- 6. Business Continuity Planning and Disaster recovery planning: (a) Fundamentals of BCP/DRP, (b) Threat and risk management, (c) Software and data backup techniques, (d) Alternative processing facility arrangements, (e) Disaster recovery procedural plan, (f) Integration with departmental plans, testing and documentation, (g) Insurance
- 7. An over view of Enterprise Resource Planning (ERP)
- 8. Information Systems Auditing Standards, guidelines, best practices (BS7799, HIPPA, CMM etc.)
- 9. Drafting of IS Security Policy, Audit Policy, IS Audit Reporting - a practical perspective
- 10. Information Technology Act, 2000

PAPER – 7: DIRECT TAX LAWS

(One paper – Three hours – 100 marks)

Level of Knowledge: Advanced knowledge

Objectives:

- (a) To gain advanced knowledge of the provisions of direct tax laws,
- (b) To acquire the ability to apply the knowledge of the provisions of direct tax laws to various situations in actual practice.

Contents:

- I. The Income-tax Act, 1961 and Rules thereunder (90 marks)
- II. The Wealth-tax Act, 1957 and Rules thereunder (10 marks)

While covering the direct tax laws, students should familiarise themselves with considerations relevant to tax management. These may include tax considerations with regard to specific management decisions, foreign collaboration agreements, international taxation, amalgamations,

tax incentives, personnel compensation plans, inter-relationship of taxation and accounting, with special reference to relevant accounting standards and other precautions to be observed to maximise tax relief. Further, they should have a basic understanding about the ethical considerations in tax management and compliance with taxation laws.

Note – If new legislations are enacted in place of the existing legislations relating to income tax and wealth tax, the syllabus will accordingly include such new legislations in the place of the existing legislations with effect from the date to be notified by the Institute.

PAPER – 8 : INDIRECT TAX LAWS
(One paper – Three hours – 100 marks)

Level of Knowledge: Advanced knowledge

Objectives:

- (a) To gain expert knowledge of the principles of the laws relating to central excise customs and service tax,
- (b) To acquire the ability to apply the knowledge of the provisions of the above-mentioned laws to various situations in actual practice.

Contents:

Section A : Central Excise (40 marks)

Central Excise Act, 1944 and the related Rules, Circulars and Notifications; Central Excise Tariff Act, 1985 and the related Rules.

Section B : Service tax & VAT (40 marks)

Law relating to service tax as contained in the Finance Act, 1994 as amended from time to time and the related Rules, Circulars and Notifications.

Issues related to Value Added Tax:

1. Backdrop for State-Level VAT in India
2. Taxonomy of VAT
3. Input tax credit, tax invoices
4. Small dealers and composition scheme
5. VAT procedures
6. VAT in relation to incentive schemes, works contract, lease transactions and hire purchase transactions.
7. VAT and Central Sales Tax

Section C : Customs (20 marks)

Customs Act, 1962 and the related Rules, Circulars and Notifications; Customs Tariff Act, 1975 and the related Rules.

While covering the above laws, students should familiarize themselves with the inter-relationship of accounting with excise, customs and service tax and also the ethical considerations involved in the compliance of these laws.

Note – If new legislations are enacted in place of the existing legislations relating to central excise, customs and service tax, the syllabus will accordingly include such new legislations in place of the existing legislations with effect from the date to be notified by the Institute. Students shall not be examined with reference to any particular State VAT Law.

RECENT PUBLICATIONS OF THE BOARD OF STUDIES

	English Rs.	Hindi Rs.	Postal Charges By Registered Parcel	
			English Rs.	Hindi Rs.
I. STUDY MATERIALS				
COMMON PROFICIENCY TEST (CPT)				
Fundamentals of Accounting	200	140		
Mercantile Laws	50	40		
General Economics	100	70		
Quantitative Aptitude	250	150		
Self Assessment CD	<u>40</u>	<u>40</u>		
	<u>640</u>	<u>440</u>	145	145
PROFESSIONAL COMPETENCE COURSE (PCC)				
Group I				
Advanced Accounting Vol. I & Vol. II	500	500		
Auditing and Assurance Vol. I	175	175		
Auditing & Assurance Standards & Guidance Note (English) Vol. II	100			
Law, Ethics and Communication	<u>275</u>	<u>275</u>		
	<u>1050</u>	<u>950</u>	215	215
Group II				
Cost Accounting & Financial Management	300	300		
Taxation	200	200		
Information Technology	150	150		
Strategic Management	<u>100</u>	<u>100</u>		
	<u>750</u>	<u>750</u>	180	180
Both Groups	<u>1800</u>	<u>1700</u>	395	395
FINAL (NEW COURSE)				
Group I				
Financial Reporting	600			
Strategic Financial Management	260			
Advanced Auditing and Professional Ethics	520			
Corporate and Allied Laws	<u>200</u>			
	<u>1580</u>		320	
Group II				
Advanced Management Accounting	240			
Information Systems Control and Audit	150			
Direct Tax Laws	340			
Indirect Tax laws	<u>290</u>			
	<u>1020</u>		225	
Both Groups	2600		540	
Information Technology Training Course Material				
Information Technology Training Programme - Modules I & II	500		90	
II. COMPILATIONS OF SUGGESTED ANSWERS				
Professional Education (Course-II)				
Paper 1: Accounting (November, 1994 – November, 2006)	60		40	
Paper 2: Auditing (May, 2000 – November, 2006)	40		40	
Paper 3: Business and Corporate Laws (May, 2000 – November, 2006)	60		40	

Paper 4 A: Cost Accounting (May, 1981 – November, 2006)	60	40
Paper 4 B: Financial Management (May, 1996 – November, 2006)	60	40
Final		
Paper 1: Advanced Accounting (May, 1996 – November, 2006)	70	40
Paper 3: Advanced Auditing (May, 2000 – November, 2006)	60	40
IV. REVISION TEST PAPERS FOR MAY 2007		
Professional Education (Course –I)	40	40
Professional Education (Course –II) (Group I & II)	80	55
Final (Group I & II)	80	55
V. PROSPECTUS		
1. Common Proficiency Test – A Simplified Entry to the Chartered Accountancy Course	100	40
2. Professional Competence Course – First Stage of Theoretical Education of the Chartered Accountancy Course inclusive of conversion form		
– With Form Nos. 102 and 103	100	40
– Without Form Nos. 102 and 103	50	40
VI. MISCELLANEOUS		
1. Model Test paper Vol. I for CPT	250	68
2. Model Test Paper Vol. I for PCC	50	36
3. Students Guide to Accounting Standard 28: Impairment of Assets	25	36
4. Supplementary Study Paper-2006 Income tax & Central Sales Tax for PE(Course-II)	30	40
5. Supplementary Study Paper -2006 Direct tax and Indirect tax for Final Course	60	40
6. Select cases Direct and Indirect Taxes – 2006 For Final Course	40	40
7. Supplementary Study paper – 2007 Advanced Auditing for Final Course	60	40
8. Training Guide	80	40
9. Information Brochure about Common Proficiency Test – A Simplified Entry to the Chartered Accountancy Course Both in English and Hindi		Available free of cost in all Decentralised Offices and Branches of the Institute
10. Information Brochure about Professional Competence Course – First Stage of Theoretical Education of the Chartered Accountancy Both in English and Hindi		
11. Information Brochure on 100 Hours Information Technology Training		
12. Information Brochure about Chartered Accountancy - Global Career Opportunities through a premier Professional Institute Both in English and Hindi		
VII. COMPACT DISCS (CDs) New Series		
1. Membership in Company - PE-II	50	40
2. Capital Gains (Part I and Part II) - Final	50	40
3. Insurance Claims - PE-I / CPT	50	40
4. Hire Purchase and Instalment Payment - PE-II/PCC	50	40
5. Taxation of Salaries - PE-II/ PCC	50	40
6. Foreign Currency Translation-Part I - Final	50	40
7. Foreign Currency Translation-Part 2 - Final	50	40
8. Impairment of Assets - Final	50	40
9. Standard Costing – Part 1 - Final	50	40
10. Standard Costing – Part 2 - Final	50	40

Applicability of various Publications for Professional Competence Examination to be held in November, 2007

Paper 1 : Advanced Accounting

Accounting Standards 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 16, 19, 20, 26, 29 are covered in the PCE syllabus.

For the topic of Accounts of Insurance Companies, the Insurance Regulatory and Development Authority (Preparation of Financial Statements and Auditor's Report of Insurance Companies) Regulations, 2002 will be applicable.

The study material reprinted as on May, 2007 is relevant for November, 2007 Examination.

Paper 2 : Auditing and Assurance

Auditing and Assurance Standards issued by ICAI AAS 1– AAS 30 and AAS 34; Guidance Note(s) on Audit of Fixed Assets, Audit of Inventories, Audit of Investments, Audit of Debtors, Loans and Advance, Audit of Cash and Bank Balances, Audit of Miscellaneous Expenditure, Audit of Liabilities, Audit of Revenue, Audit of Expenses.

Paper 3 : Law, Ethics and Communication

May, 2007 Edition is relevant for the November, 2007 Examination.

Paper 5 : Taxation

Study Material for Taxation (as amended by Finance Act, 2006) – reprinted in May 2007. The relevant assessment year for Income-tax is A.Y.2007-08.

Note – For the purposes of setting the questions in Taxation, study material for A.Y.2007-08 containing the law as amended by the Finance Act, 2006 should be taken into account. This study material contains amendments made by notifications/circulars/other legislations up to 30.04.2006. The amendments made between 1.05.2006 and 30.4.2007 would be published in the Revision Test Papers for November, 2007 examination. All these amendments are relevant for November, 2007 examination and hence should be taken into account for the purpose of setting questions for this exam.