

THEORY

(May1996, Nov1999, May2002)

Q:1 What are the basic considerations in installation of Cost Accounting System?

Ans:

- i. **Size of the organization** with a view to finding out the manner on which the system could be introduced
- ii. **Areas of functioning** wherein the management's action will be most beneficial.
- iii. **Management's policies and expectations** should be designed after a careful study.
- iv. **Methods & procedures in vogue** for purchase, receipts, storage and issue of material, methods of wage payment etc.
- v. **Technical aspects** of the business should be studied thoroughly by the designers.
- vi. The **maximum amount of information** that would be sufficient should be secured.
- vii. **Various forms** to be used by costing system for various data collection and dissemination.
- viii. The **degree of accuracy** of data to be supplied by the system and how verification of such data can be brought about.
- ix. The manner in which the **benefits** of installation of the cost accounting system should be explained.
- x. The manner in which an **integral system of accounts** can be devised so as to automatically reconcile financial profit with costing profit with the help of control accounts.
- xi. **Information requirements** of management, the nature of reports to be generated through the cost accounting system
- xii. The **objective of costing system** i.e whether it is for price fixation or for cost control or for a particular management decision.

(May2004)

Q: 2 What are the main objectives of cost accounting?

Ans: The Main objectives of Cost Accounting are

1. Ascertainment of cost.
2. Determination of selling price.
3. Cost control and cost reduction.
4. Ascertaining the project of each activity.
5. Assisting management in decision-making.
6. Determination of break-even point.

(Nov.1993, May1996, Nov.1999, May2004, Nov2005)

Q:3 State 'Essentials of good cost accounting system? OR

Enumerate the factors which should be considered before installing a cost accounting system?

Ans:

1. Cost accounting system should be **taylor-made, practical, simple and capable of meeting the requirements of a business concern.**
2. The data to be used by the Cost Accounting system should be **accurate.**
3. **Necessary co-operation and participation** from various departments of the concern is essential for development of a good system of cost accounting.
4. The cost of installing and operating the system should **justify the results.**
5. The system of costing should **not sacrifice the utility** by introducing meticulous and unnecessary details.
6. **A carefully phased programme** should be prepared by using network analysis for the introduction of the system.

(May1994, Nov.2001, May2003)

Q: 4 Enumerate difference between Cost Control & Cost Reduction?

Ans:

Cost Control	Cost Reduction
1. It represents efforts made towards achieving a <i>target</i> or a goal.	1. It represents achievement of reduction of cost.
2. The process of cost control is to Set-up a target, investigate the variations and take remedial action.	2. Cost reduction is not contended merely with the maintenance of performance with standards.
3. It assumes <i>existence of norms</i> or Standards which are not challenged.	3. It assumes that the <i>standards can be improved.</i>
4. It is <i>preventive function.</i>	4. It is a <i>corrective function.</i>
5. Sometimes, it <i>lacks a dynamic approach.</i>	5. It is <i>continuous process</i> of analysis of all the factors affecting cost.

Q:5 Define the Following?

Ans: (May03, Nov00, May05)

(i) Conversion cost: It is the cost incurred to convert raw materials into finished goods. It is the sum of direct wages, direct expenses and manufacturing overheads.

(May03, Nov00, May05)

(ii) Sunk cost: Historical costs or the costs incurred in the past are known as sunk cost. They play no role in the current decision making process and are termed as irrelevant costs. For example, in the case of a decision relating to the replacement of a machine, the written down value of the existing machine is a sunk cost, and therefore, not considered.

(May03, Nov00, May05)

(iii) Opportunity cost:

It refers to the value of sacrifice made or benefit of opportunity foregone in accepting an alternative course of action. For example, a firm financing its expansion plan by withdrawing money from its bank deposits. In such a case the loss of interest on the bank deposit is the opportunity cost for carrying out the expansion plan.

(Nov.2000)

(iv) Pre-production Costs:

These costs form the part of development cost, incurred in making a trial production run, preliminary to formal production. These costs are incurred when a new factory is in the process of establishment or a new project is undertaken or a new product line or product is taken up, but there is no established or formal production to which such costs may be charged. These costs are normally treated as deferred revenue expenditure (except the portion which has been capitalised) and charged to the costs of future production.

(Nov.1998)

(v) Research and Development Costs:

Research costs are the costs incurred for the discovery of new ideas or processes by experiment or otherwise and for using the results of such experimentation on a commercial basis. Research costs are defined as the costs of searching for new or improved products, new applications of materials, or improved methods, processes, systems or services.

Development costs are the costs of the process which begins with the implementation of the decision to produce a new or improved product or to employ a new or improved method and ends with the commencement of formal production of that product by that method.

(Nov.2000)

(vi) Training Costs:

Usually there is a service cost centre, known as the Training Section, to which all the training costs are allocated. The total cost of training section is thereafter apportioned to production centers. Training Costs comprises of- wages and salaries of the trainees or learners pay and allowances of the training and teaching staff, payment of fees etc. All these costs are booked under separate standing order numbers for the various functions.

(Nov2001/2006, May2001/2003/2008)

(vii) Controllable costs: These are the costs which can be influenced by the action of a specified member of the undertaking. Controllable costs incurred in a particular responsibility centre can be influenced by the action of the executive heading that responsibility centre.

(Nov2001/2006, May2001/2003/2008)

(viii) Uncontrollable costs: These are the costs which cannot be influenced by the action of a specified member of an undertaking.

(May2001/2005,2007)

(ix) Explicit costs: These are also known as **out of pocket costs**. They refer to those costs which involves immediate payment of cash. Salaries, wages, postage and telegram, interest on loan etc. are some examples of explicit costs.

(May2001/2005)

(x) Implicit costs. Implicit costs do not involve any immediate cash payment. These are also known as **imputed costs or economic costs**. Implicit costs are not recorded in the books of account but yet, they are important for certain types of managerial decisions such as equipment replacement and relative profitability of two alternative courses of action.

(May2006/2009)

(xi) Period and Discretionary costs:

There are the costs, which are not assigned to the products but are charged as expenses against the revenue of the period in which they are incurred. All non-manufacturing costs such as general and administrative expenses, selling and distribution expenses are period costs.

Such costs are not tied to a clear cause and effect relationship between inputs and outputs. They arise from periodic decisions regarding the maximum outlay to be incurred. Examples are – advertising, public relations, training etc.

(Nov.2007)

(xii) Relevant costs: These are those **expected future cost** which are essential but differ for alternative course or action. **For example**

- (a) Historical cost or sunk costs are irrelevant as they do not play any role in the decision making process.
- (b) Variable costs which will not differ under various alternatives are irrelevant.

(May2006/2009)

(xiii) Product Cost: These are the cost which are assigned to the product and included in inventory valuation. These are also known as inventoriable costs.

(Nov.2002)**Q.6 What is meant by 'Cost Centre'?**

Ans: A Cost Centre refers to a section, segment or subdivision of an organization of which costs are charged. For example a cost centre may be

- i. Allocation e.g. departments sales
- ii. A person e.g. machine operators, salesman etc.

Cost Centre can be classified as under:

- a. **Based on Type:**
 - i. Personal Cost Centre
 - ii. Impersonal Cost Centre
- b. **Based on Role:**
 - i. Production Cost Centre
 - ii. Service Cost Centre
- c. **Based on Activity:**
 - i. Operation Cost Centre
 - ii. Process Cost Centre

(May 2011)**Q.7 Distinguish between Cost Unit & Cost Centre**

Ans: Cost Centre: It refers to a section, segment or subdivision of an organization of which cost are charged.

It is defined as a location, person, an item of equipment or a group of these for which cost are ascertained & used for cost control.

Cost Unit: It is a unit of product, service or time (or combination of these) in relation to which costs may be ascertained or expressed.

Cost units are usually the units of physical measurement like number, weight, area, volume, length, time and value. A few typical examples of cost units are given below:

Industry or Product	Cost Unit Basis
Automobile	Number
Cement	Tonne/per bag etc.

(May 2000, Nov.2002, May 2006, May 2007)**Q: 8 Enumerate the factors that cause difference in profits as shown in Financial Accounts and Cost Accounts?**

Ans: (a) **Items included in financial accounts but not in cost accounts** such as:

Interest received on bank deposits, loss/profit on sale of fixed assets and investments, dividend, rent received.

(b) **Items included in cost accounts on notional basis** such as rent of owned building, interest on own capital etc.

(c) Items whose **treatment is different** in the two sets of accounts such as inventory valuation.

Q:9 What are the difference between Financial Accounts and Cost Accounts?

Ans:

Bases	Financial accounts	Cost accounts
Requirement	Compulsory	Voluntary (Except some Manufacturing concerns)
Accuracy	Required	Less required
Users	External like Investor, Creditors etc.	Internal like Management, director etc.
Time of making	At the yearend	Time to time with reasonable gap.
Activities related	Concerned with past activity	Concerned with past as well as future activity

(Nov.2007)

Q:10 Explain, why the Last in First out (LIFO) is better than First in First out (FIFO) or any other method of pricing material issues?

Ans: LIFO has following advantages:

- (a) The cost of the material issued will be reflecting the current market price.
- (b) The use of the method during the period of rising prices does not reflect high profit in the income statement because the cost is also high.
- (c) In the case of falling price, profit rise due to less cost, yet the finished goods at market price. I.e. low price. The profit will decrease.
- (d) During the period of inflation, LIFO will show the correct profit.

(May 1999)

Q.11 What is Just in Time (JIT) purchases? What are the advantages of such purchases?

Ans: Just in time (JIT) purchases means that the inventories whether of raw materials, work in process or finished goods are received in time..

Advantages of JIT purchases:

Main advantages of JIT purchases are as follows:

1. Storage space used for inventories can be made available for other products.
2. JIT purchases results in cost savings.
3. Due to frequent purchases of raw materials, its issue price is likely to be very close to the replacement price.

4. The chances of pilferage, leakage, spoilage etc of the materials/inventories are reduced to the minimum.

(May 2000, Nov.2004/2005, May2008)

Q: 12 Discuss ABC analysis as a technique of inventory control?

Ans: It is a **system of inventory control**. In this system the items are divided into three categories namely "A", "B" and "C" according to their importance, cost, and percentage of usage.

- **'A' category** of items (units) consists of only a **small percentage** i.e. about 10% of **total items** (units) handles by the stores but require **heavy investment** about 70% of inventory value, because of their high price or heavy requirement or both.
- **'B' category** of items (units) are relatively less important – **20% of the total items** (units) of material handled by stores and % of investment required is about **20% of total investment** in inventories.
- **'C' category** – **70% of total items** (units) handled and **10% of value**.

For 'A' category items (units), stocks levels and EOQ are used and effective monitoring is done.

For 'B' category same tools as in 'A' category are applied

For 'C' category of items, there is no need of exercising constant control. Orders for items in this group may be placed after 6 months or once in a year, after ascertaining consumption requirement.

Q: 13 Write short notes on Assumptions in calculating EOQ quantity?

Ans:

- It is assumed that **carrying costs** are **based** on the **average inventory**.
- The **annual usage is known** and is assumed to be **constant**.
- The **ordering cost per order** remains **constant** and it varies directly with the number of orders.
- The **cost per unit** to be purchased is **known in advance** and is assumed to be constant during the year.

(May 1999, Nov.2007)

Q: 14 What is blanket overhead rate? In which situations, blanket rate is to be used and why?

Ans: Blanket overhead rate is one single overhead absorption rate for the whole factory. It may be computed by using the following formulae:

$$\text{Blanket overhead rate} = \frac{\text{Overhead costs for the whole factory}}{\text{Total units of the selected base}}$$

Situation for using blanket rate:

- i. Where only one major product is being produced.
- ii. Where several products are produced, but
 - All products pass through all departments and
 - All products are processed for the same time duration in each department.

(May1999/2000/2002/2003, Nov.2004)

Q.15 Distinguish clearly between Bin Cards and Stores Ledgers?

Ans: Both Bin cards and stores ledger are perpetual inventory records. None of them is a substitute for the other. These two records may be distinguished from the following points of view:

- (i) Bin card is **maintained by the store keeper**, while the stores ledger is maintained by the **cost accounting department**.
- (ii) Bin card is the **stores recording document** whereas the stores ledger is an **accounting record**.
- (iii) Bin card contains **information with regard to quantities** i.e. their receipt, issue and balance while the stores ledger contains **both quantitative and value information** in respect of their receipts, issue and balance.
- (iv) In the Bin card entries are made at the time when **transaction takes place**. But in the stores ledger entries are made only after the **transaction has taken place**.
- (v) **Inter departmental transfer** of materials appear only in stores ledger.
- (vi) Bin cards **record each transaction** but stores ledger records the same information in **summarized form**.

(May 2000, May2003, Nov2003, May2005, May2007)

Q: 16 Discuss the treatment of spoilage and defectives?

Ans: Spoilage: It arises when products are damaged in manufacturing operation. It cannot be rectified economically; therefore it has to be disposed off in the same condition. Spoilage can be of two types: Normal and abnormal

Normal spoilage is included in cost by charging the loss to the production or charging it to production overhead.

The cost of **abnormal spoilage** is charged to **costing P&L account**.

Defectives: Defective work signifies those units of production which can be rectified and turned out as good units by the application of additional material, labour or other service.

Normal defectives can be recovered : **Charged to Production**
: Charged to **general overhead**
: Charged to **department**.

If defectives are **abnormal** and are due to causes beyond the control of organization then they should be charged to **profit and loss account**.

(Nov.1998, May 2004)

Q.17 Discuss the treatment of under-absorbed and over-absorbed factory overheads?

Ans: Treatment of under absorbed and over absorbed factory overheads in cost accounting.

Factory overheads are usually applied to production on the basis pre-determined rate

$$= \frac{\text{Estimated normal overheads for the period}}{\text{Budgeted No. of units during the period}}$$

The possible options for treating under / over absorbed overheads are

- Use supplementary rate in the case of substantial amount of under / over absorption
- Write it off to the costing profit & loss account in the event of insignificant amount /or abnormal reasons.
- Carry toward to accounting period if operating cycle exceeds one year.

(May2001, Nov.2006)

Q.18 Describe perpetual inventory records and continuous stock verification.

Ans: Perpetual Inventory Records:

- i. Stock verification takes place at the end of a financial period, say one year.
- ii. Stock Records are always kept up to date.
- iii. Regular stores procedure like materials receipts, issues etc may have to be stopped to facilitate stock taking.
- iv. All items of stocks are covered in verification.

Continuous Stock Verification:

- i. Stocks are verified at regular intervals during the years.
- ii. Closure of normal functioning is not necessary.
- iii. Discrepancies are ascertained immediately in order to take corrective action.
- iv. It provides stock figure on real time basis. Hence final accounts and interim accounts can be prepared quickly.

(May 2008)

Q.19 Distinguish between cost allocation and cost absorption?

Ans: Cost allocation is the allotment of whole item of cost to a cost centre or a cost unit. In other words, it is the process of identifying, assigning or allowing cost to a cost centre or a cost unit.

Cost absorption is the process of absorbing all indirect costs or overhead costs allocated to apportion over particular cost centre or production department by the units produced

(Nov.1999, Nov.2001, May2008)

Q.20 Distinguish between Job Evaluation and Merit Rating.

Ans: Job evaluation: It can be defined as the process of analysis and assessment of jobs to ascertain reliably their relative worth and to provide management with a reasonably sound basis for determining the basic internal wage and salary structure for the various job positions.

Merit Rating: It is a systematic evaluation of the personality and performance of each employee by his supervisor or some other qualified persons.

Thus the main points of distinction between job evaluation and merit rating are as follows:

1. Job evaluation is the assessment of the relative worth of jobs within a company and merit rating is the assessment of the relative worth of the man behind a job.
2. Job evaluation and its accomplishment are means to set up a rational wage and salary structure whereas merit rating provides scientific basis for determining fair wages for each worker based on his ability and performance.
3. Job evaluation simplifies wage administration by bringing uniformity in wage rates. On the other hand merit rating is used to determine fair rate of pay for different workers on the basis of their performance.

(Nov.2001, May 2003, Nov.2004)

Q: 21 Discuss the treatment of over time premium in cost accounting?

Ans: The overtime premium is treated as follows:

1. If the overtime is resorted to at the **desire of the customer**, then the overtime Premium may be charged to the **job directly**.
2. If overtime is restored at the **desire of producer**, the overtime premium should be treated as overhead cost of the **particular department**.
3. If overtime is worked in a department due to **fault of another department**, the overtime premium should be charged to the department at fault.
4. Overtime worked on account of **abnormal conditions** such as flood, earthquakes, civil disturbance etc. should not be charged to cost but to costing Profit and Loss Account.

(May 2011)

Q. 22 Enumerate the causes of labour turnover.

Ans: The main causes of labour turnover in an organisation/industry can be broadly classified under the following three heads :

- (a) Personal Causes;
- (b) Unavoidable Causes; and
- (c) Avoidable Causes.

Personal causes are those which induce or compel workers to leave their jobs; such causes include the following :

- (i) Change of jobs for betterment.
- (ii) Premature retirement due to ill health or old age.
- (iii) Domestic problems and family responsibilities.

Unavoidable causes are those under which it becomes obligatory on the part of management to ask one or more of their employees to leave the organisation; such causes are summed up as listed below:

- (i) Seasonal nature of the business;
- (ii) Shortage of raw material, power, slack market for the product etc.;
- (iii) Change in the plant location;
- (iv) Disability, making a worker unfit for work;
- (v) Disciplinary measures;
- (vi) Marriage (generally in the case of women).

Avoidable causes are those which require the attention of management on a continuous basis so as to keep the labour turnover ratio as low as possible. The main causes under this case are indicated below :

- (1) Dissatisfaction with job, remuneration, hours of work, working conditions, etc.,
- (2) Strained relationship with management, supervisors or fellow workers;
- (3) Lack of training facilities and promotional avenues;
- (4) Lack of recreational and medical facilities;
- (5) Low wages and allowances.

(Nov.1999, Nov.2003)

Q.23 Discuss the two types of cost associated with labour turnover.

Ans: Two types of costs which are associated with labour turnover are :

(a) Preventive costs: These include costs incurred to keep the labour turnover at a low level, *i.e.* cost of medical services, welfare schemes and pension schemes. If a company incurs high preventive costs, the rate of labour turnover is usually low.

(b) Replacement costs: These are the costs which arise due to high labour turnover. If men leave soon after they acquire the necessary training and experience of good work, additional costs will have to be incurred on new workers.

(Nov.2007)

Q: 24 Give the important steps to be taken to minimize the labour turnover?

Ans: The following steps are useful for minimizing labour turnover:

(a) Exit interview: An interview be arranged with each outgoing employee to ascertain the reasons of his leaving the organization.

(b) Job analysis and evaluation: to ascertain the requirement of each job.

(c) Organization should make use of a scientific system of placement and **promotion for employees.**

(d) Organization should create **healthy atmosphere**, providing education, medical and housing facilities for workers.

(e) Committee for settling workers disputes.

(May2000, May2003, May 2006, May2009)

Q: 25 Describe the treatment of idle time?

Ans: Idle Time is the time for which workers are receiving payment but not utilized on production. I.e. Wages are paid but no production is done by the worker. Idle Time is of two types.

- **Normal Idle time** is the idle time which cannot be reduced or avoided by management by using other ways. eg: refreshment time, Shift time gap
- **Abnormal Idle time** is the idle time which can be reduced or avoided by management by using other ways. eg: material shortage etc. Machinery breakdown

(May 2008)

Q: 26 Discuss the difference between allocation and apportionment of overhead.

Ans: The following are the differences between allocation and apportionment.

1. **Allocation** costs are directly allocated to cost centre. Overhead which cannot be directly allocated is **apportioned** on **some suitable basis**.
2. Allocation allots **whole amount** of cost to cost centre or cost unit where as apportionment allots **part** of cost to cost centre or cost unit.
3. **No basis** required for allocation. Apportionment is made on the **basis of** area, assets value, number of workers etc.

(May 2007)

Q: 27 Explain briefly the conditions when supplementary rates are used?

Ans: When the amount of under absorbed and over absorbed overhead is important or large, because of differences due to wrong estimation, then the cost of product needs to be adjusted by using supplementary rates (under and over absorption/actual overhead) to avoid wrong impression.

(May 2001, Nov 2004)

Q: 28 Differentiate between Job costing and Batch costing?

Ans: Job Costing

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

Batch costing

1. **Batch costing is a form of job costing**, a lot of units which collectively known as batch may be used as a cost unit for ascertaining job.
2. Such a method of costing is used in case of pharmaceutical industry readymade garments, industries manufacturing parts of TV, radio sets etc.

(Nov.1998)

Q: 29 Compare Job costing and Process Costing?

Ans: Job Costing and Process Costing

1. In Job costing the production is by **specific orders** whereas in the case of Process costing it is in **continuous flow**, the production being homogeneous
2. In Job costing **costs are determined by jobs or batches** of products whereas in process costing costs are compiled on time basis for **each process or department**.

(Nov.2000, May 2002, May 2008)

Q: 30 What are the main advantages of cost plus contract?

Ans: Costs plus contracts have the following advantages:

1. The contractor is assured of a **fixed percentage of profit**. There is no risk of incurring any loss on the contract.
2. It is **useful** especially **when the work to be done is not definitely fixed** at the time of making the estimate.
3. Contractee can **ensure himself about "the cost of the contract"**, as he is empowered to examine the books and document of the contractor to ascertain the veracity of the cost of the contract.

(Nov.2000, May2002, Nov.2007)

Q: 31 Explain the importance of an Escalation Clause in contract cost.

Ans: During the execution of a contract, the prices of materials, or labour etc., may rise beyond a certain limit. In such a case the contract price will be increased by an agreed amount. Inclusion of such a clause in a contract deed is called an Escalation Clause.

(May 2007)

Q: 32 “Operation costing is defined as refinement of Process costing.” Explain it?

Ans: Operation costing is concerned with the determination of the cost of each operation rather than the process:

- In the industries where **process consists of several operations**, the operation costing method is applied.
- It **offers better control** and facilitates the computation of unit operation cost at the end of each operation.

(May 1998, Nov.2001)

Q: 33 Distinction between marginal and absorption costing:

Ans The main points of distinction between marginal costing and absorption costing are as below:

Marginal costing	Absorption costing
Only variable costs are considered for product costing and inventory valuation.	Both fixed and variable costs are considered for product costing and inventory valuation
Fixed costs are regarded as period costs. The Profitability of different products is judged by their P/V ratio.	Fixed costs are charged to the cost of production . Each product bears a share of fixed cost and thus the profitability of a product is influenced by the apportionment of fixed costs.
Cost data presented highlight the total contribution of each product.	Net profit of each product is determined after deducting fixed cost and variable costs
The difference in the magnitude of opening stock and closing stock does not affect the unit cost of production .	The difference in the magnitude of opening stock and closing stock affects the unit cost of production due to the impact of related fixed cost.

(May 1999, Nov.2000)

Q.34 Distinguish between Marginal Costing and Differential Costing?

Ans: Marginal Costing and Differential Costing

Marginal Costing is defined as the ‘Ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs’.

Differential Costing is defined as the technique of costing which uses differential costs and/or differential revenues for ascertaining the acceptability of an alternative. The

technique may be termed as incremental costing when the difference is increase in costs and decremental costing when the difference is decrease in costs.

The main points of distinction between marginal costing and differential costing are as below:

- (a) The technique of marginal costing requires a clear distinction between variable costs and fixed costs whereas no such distinction is made in the case of differential costing.
- (b) In marginal costing, margin of contribution and contribution ratio are the main yard sticks for performance evaluation and for decision making whereas under differential costs analysis, differential costs are compared with the incremental or decremental revenue (as the case may be) for arriving at a decision.
- (c) Differential cost analysis is possible in both absorption costing and marginal costing, where as marginal costing in itself is a distinct technique.
- (d) Marginal cost may be incorporated in the cost accounting system whereas differential costs are worked out separately.

(Nov.2001, Nov.2006, Nov.2007)

Q.35 What are the essential pre-requisites of integrated accounting system?

Ans: The essential pre-requisites of integrated accounting system include the following:

- 1. The management's decision about the extent of integration of the two sets of books. Some concerns find it useful to integrate up to the stage of primary cost or factory cost while other prefer full integration of the entire accounting records.
- 2. A suitable coding system must be made available so as to serve the accounting purposes of financial and cost accounts.
- 3. An agreed routine, with regard to the treatment of provision for accruals, prepaid expenses, other adjustment necessary for preparation of interim accounts.
- 4. Perfect coordination should exist between the staff responsible for the financial and cost aspects of the accounts and an efficient processing of accounting documents should be ensured.

(May 1998, May 1999, May 2002)

Q. 36 Integrated Accounts

Ans: Integrated Accounting is a system of accounting whereby cost and financial accounts are kept in the same set of books. Such a system will have to afford full information required for Costing as well as for Financial Accounts.

The main advantages of Integrated Accounting are as follows:

- (i) Since there is one set of accounts, thus there is one figure of profit. Hence the question of reconciliation of costing profit and financial profit does not arise.
- (ii) There is no duplication of recording of entries and efforts to maintain separate set of books.
- (iii) Costing data are available from books of original entry and hence no delay is caused in obtaining information.

- (iv) The operation of the system is facilitated with the use of mechanized accounting.
- (v) Centralization of accounting function results in economy.

(May 1998)

Q.37 Indicate any five circumstances under which you will permit to fix a price, which is less than the marginal cost of the products?

Ans: Followings are the circumstances under which a firm may fix a price less than the marginal cost of the product:

- i. When goods are of perishable nature.
- ii. When competitors are to be eliminated from the market.
- iii. When a new product is to be introduced in the market.
- iv. To obviate shut-down costs.
- v. When the concern had already purchased huge quantities of raw materials and the prices of these materials is falling considerably in the market.

(May 2001)

Q.38 What are the important decisions making areas where marginal costing technique is used?

Ans: Marginal costing is a useful technique of decision making, using by the management of most of the manufacturing concerns. Some of the important decision making areas where marginal costing technique is used by these concerns are:

1. Fixation of selling price.

- (i) Under normal circumstances
- (ii) For special market (export market) or for a special customer
- (iii) During recession
- (iv) At marginal cost or below marginal cost.

2. Decision relating of the most profitable product mix.

- (i) Selection of optimal products mix
- (ii) Substitution of one dropping of a product line.
- (iii) Discontinuing or dropping of a product line.

3. Decision relating to make or buy.

4. Shut down or continue of determination or output level in period of recession of depression.

5. Retaining or replacing a machine

6. Selling in the home or in the export market

7. Expanding or contracting

8. Decision relating to price mix.

(Nov 1998)

Q.39 List out the assumption of break even analysis?

Ans: Marginal costing helps in break even analysis, which shows the effect of increasing or decreasing production activity on the profitability of the company;

Break-even point (in units) = fixed cost / contribution per unit

The assumptions of break even analysis are as follows;

- (i) All costs can be separated into fixed and variable.
- (ii) Variable costs vary in proportion to output and fixed costs remain constant.
- (iii) Costs and revenues are linear over the range of activity under consideration.
- (iv) There will be no change in general price level.
- (v) Stocks are valued at marginal cost. Both revenue and cost functions are linear over the range of activity under consideration.
- (vi) In case of multi-product company, the sales mix will remain unchanged.

(Nov.1998, May 2001)

Q.40 What are limitations of marginal costing? Explain.

Ans: 1.Difficult to classify: It is difficult to classify exactly the expenses into fixed and variable category. Most of the expenses are neither totally variable nor wholly fixed.

2. Contribution is not final: Contribution of a product itself is not a guide for optimum profitability unless it linked with the key factor.

3. Wrong pricing decisions: Sales staff may mistake marginal cost for total cost and sell at a price, which will result in loss or low profits. Hence, sales staff should be cautioned against incorrect pricing decisions, while giving them information on marginal cost.

4. Stock valuation: Overheads of fixed nature cannot altogether be excluded particularly in large contracts, while valuing the work in progress. In order to show the correct position, fixed overheads may also have to be included in work in progress. This aspect is not considered in marginal costing.

5. Native assumptions: Some assumption regarding the behavior of revenues and cost not necessarily true in a realistic situation. For example, additional output can be sold only by reducing sales prices.

6. Ignores time value: Marginal costing ignores time factor and investment. For example, the marginal cost of two jobs may be the same but the time taken for their completion and the cost of machines used may differ.

(May 2001)

Q.41 What is cost-volume-profit analysis and what are its objectives.

Ans: (1) Cost-volume-profit analysis is the analysis of three variables viz., cost, volume and profit, which explores the relationship existing amongst costs, revenue, activity levels and the resulting profit.

(2) It aims at measuring variations of profits and costs with volume, which is significant to business profit planning.

(3) CVP analysis makes use of principles of marginal costing. It is an important tool of planning for making short-run decisions.

Objectives of cost-volume-profit analysis: The main objectives cost-volume-profit analyses are as below:

(i) It aims at measuring variation in cost with volume.

(ii) It enables business managers to fulfill the objective of profit planning.

(iii) It facilitates in making short-run tactical decisions such as acceptance of special order, shift working; choice of sale mix etc.

(Nov 1998)

Q.42 State four limitation of the budgetary control system?

Ans: 1. Budgets may or may not be true, as they are based on estimates. The assumption about future events may or may not actually happen.

2. Budgets are considered as rigid document.

3. Mere budgeting cannot lead to profitability. Budgets cannot be executed automatically. It may create a false sense of security that everything has been taken care of in the budgets.

4. Staff co-operation is usually not available during budgetary control exercise.

5. The introduction and implementation of the system may be expensive.

(Nov 2000)

Q.43 Explain: Performance budgeting

Ans: The concept of performance budgeting is used extensively in the Government and public sector undertaking. A performance budget is essentially a projection of the Government activities and expenditure thereon for the budget period. It shows budgeted expenses classified by functions and activities and wherever practical, unit cost also.

In comparison to other budget forms the objectives of performance budgeting are to provide a closer linkage between planning and action and to provide a more common basis for review, control and reporting.

The basic issues involved in the preparation of performance budgeted are that of developing work programmes and performance expectations by assigning responsibilities necessary for the attainment of the goals and objective of the enterprise. It also involves establishment of well defined centre of responsibility; establishment of targets for each responsibility centre in term of physical units so that actual performance can be measured against.

(Nov 2008)

Q.44 Explain briefly the concept of “flexible budget”.

Ans: It is a budget, which by recognizing the difference between fixed, semi-variable and variable cost, is designed to change in relation to level of activity.

The need for the preparation of flexible budgets arises in the following circumstances:

- (a) Seasonal fluctuations in sales and / or production.
- (b) Introduction of new products, product designs and versions on a frequent basis;
- (c) Industries engaged in make-to-order business like shipbuilding;
- (d) An industry which is influenced by changes in fashion; and
- (e) General changes in sales.
- (f) Flexible budgeting may be resorted to in the following situations

In case of new business venture, due to its typical nature, it may be difficult to forecast the demand of a product accurately.

(May 2009)

Q.45 Discuss the components of budgetary control system.

Ans: It is a system which uses budgets for planning and controlling different activities of business. This system involves:

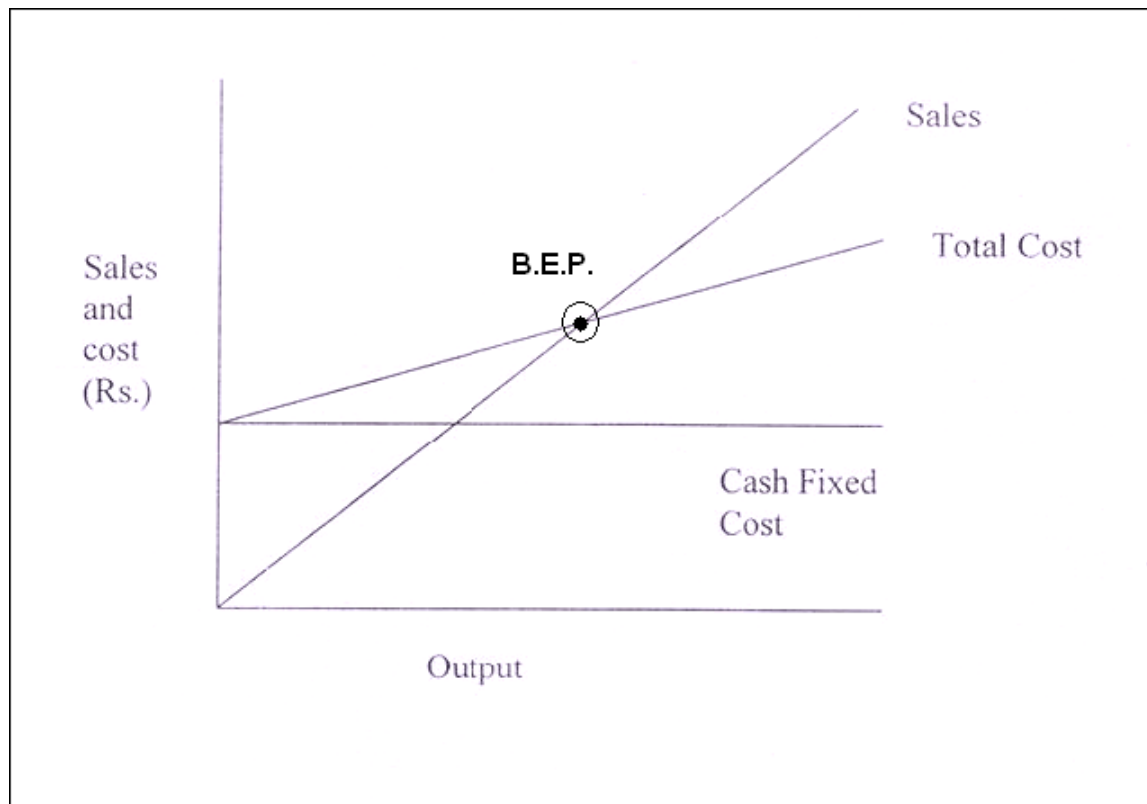
- (i) Division of organization on functional basis into different sections (each section is technically known as a budget centre).
- (ii) Preparation of separate budget for each “budget centre”.
- (iii) Consolidation of all functional budgets to present overall organizational objectives during the forthcoming budget period.
- (iv) Comparison of actual level of performance against budgets.
- (v) Reporting the variance with proper analysis to provide basis for future course of action.

(May 2001)

Q: 46 Explain and illustrate break-even chart?

Ans: In cash break-even chart, only fixed costs are considered. It is computed as under:

$$\text{BEP (Units)} = \frac{\text{Cash Fixed Cost}}{\text{Cost per Units}}$$



MATERIALS COST

(Study Material)

Q.1 Calculate the Economic Order Quantity from the following information. Also state the number of orders to be placed in a year.

Consumption of materials per annum	10,000 kg
Order placing cost per order	Rs. 50/-
Cost per kg of raw materials	Rs.2
Storage Costs	8% on average inventory

Q.2 From the following data, calculate the required information.

Annual Consumption	1,00,000 units
Cost of placing an order	Rs.50/-
Cost per unit of raw materials	Rs.50/-
Insurance, taxes etc per unit per year	Rs.4/-
Annual return on investment	12%

Required:

- i) Economic Order Quantity (EOQ)
- ii) Total Annual Cost including purchase cost.

(Study Material, Practice Manual)(Nov.1999)

Q.3 The Complete Gardner is deciding on the economic order quantity for two brands of lawn fertilizer: Super Grow and Nature's Own.

The following information is collected:

	Fertilizers	
	Super Grow	Nature's Own
Annual Demand	2,000 bags	1,280 bags
Relevant Ordering cost per purchase order	Rs.1,400	Rs. 1,200
Annual Relevant carrying cost per bag	Rs.480	Rs. 560

Required:

- i) Compute EOQ for Super Grow and Nature's Own.
- ii) For the EOQ, what is the sum of the total annual relevant ordering costs and total annual carrying costs for Super Grow and Nature's Own?
- iii) For the EOQ, Compute the number of deliveries per year for Super Grow and Nature's Own.

(Study Material, Practice Manual)

Q.4 G Ltd. produces a product which has a monthly demand of 4,000 units. The product requires a component X which is purchased at Rs. 20. For every finished product one unit of

component is required. The ordering cost is Rs. 120/- order and the holding cost is 10% per annum. **You are required to calculate:**

- i) EOQ
- ii) If the minimum lot size to be supplied is 4,000 units, what is the extra cost, the company has to incur?
- iii) What is the Minimum Carrying cost, the company has to incur?

(Nov 1994)

Q.5 A Ltd. a manufacturing company follows the policy of EOQ for one of its components.

The Components details are as follows:

Purchase Price per component	Rs. 200
Ordering Cost	Rs.100 per order
Inventory carrying cost	10% of purchase price
Total cost of carrying and ordering inventory	Rs. 4,000 per annum

The company has been offered a discount of 2% on the price of the component provided the lot size is 2,000 components at a time. **You are required to calculate:**

- i) EOQ
- ii) Advice whether the quantity discount offer can be accepted. **(Assume the inventory carrying cost does not vary according to discount policy).**
- iii) Would you advice differ if the company is offered 5% discount on a single orders.

(Study Material, Practice Manual)(Nov. 1992, Nov 2000)

Q.6 A Ltd. is committed to supply 24,000 bearings p.a. to B Ltd. on a steady basis. It is estimated that it costs 10 paise as inventory holding cost per bearing per month and that the set-up cost per run of bearing manufacture is Rs.324.

- i) What should be the **Optimum Run Size** for bearing manufacture?
- ii) What would be the interval between two consecutive optimum runs?
- iii) Find out the minimum inventory cost per annum?
- iv) Assuming that the Company has a policy of manufacturing 6,000 bearings per run, how much extra costs the company would be incurring as compared to the optimum run suggested in (i) above.

(Study Material, Practice Manual)(May1994, Nov 2004)

Q.7 EXE Limited has received an offer of quantity discount on its order of materials as under:

Price per tone Rs.	Tonnes Nos.
1,200	Less than 500
1,180	500 and less than 1,000
1,160	1,000 and less than 2,000
1,140	2,000 and less than 3,000
1,120	3,000 and above

The annual requirement for the material is 5,000 tonnes. The ordering cost per order is Rs. 1,200 and the stock holding cost is estimated at 20% of the material cost per annum.

Required:

- (i) You are required to advise the EXE Limited the most economical purchase level.**
- (ii) Compute EOQ if there are no quantity discounts and the price per tonne is Rs. 1,500.**

(Nov.2008)

Q.8 The annual demand for a particular material is 50,000 tonnes. The ordering cost per order is Rs. 120 and inventory carrying cost is considered at 5% of material cost per unit per quarter. **You are requested to calculate the most economic purchase level:-**

Material Purchased (tonnes)	(Price per tonne)
Upto-499	120
500-999	115
1000-1999	110
2000-2999	105
3000 & above	100

- i. Calculate EOQ.**
- ii. Calculate order size at which total annual cost (including material cost) will be minimum.**
- iii. What would be the amount of loss if the order size is 2,500 tonnes in place of the size calculated in (2)?**

(Practice Manual, Nov.2001)

Q.9 A Company manufactures a product from a raw material, which is purchased at Rs. 60 per kg. The Company incurs a **handling cost of Rs. 360 plus freight of Rs. 390 per order.** The incremental carrying cost of inventory of raw material is Rs.0.50 per kg per month. In addition the cost of working capital finance on the investment in inventory of raw materials

is Rs. 9 per kg. per month. The annual production of the product is 1,00,000 units and 2.5 units are obtained from one kg of raw material.

Required:

- i. Calculate the economic order quantity of raw materials.
- ii. Advice, how frequently should orders for procurement be placed.
- iii. If the Company proposes to rationalize placement of orders on quarterly basis, what percentage of discount in the price of raw materials should be negotiated?

(Study Material)

Q.10 About 50 items are required everyday for a machine. A fixed cost of Rs. 50/ order is incurred for placing an order. The inventory carrying cost per item amounts to Rs. 0.02 per day. The lead period is 32 days.

Compute:

- i) EOQ
- ii) Re-order Level.

(Practice Manual)

Q.11 The annual carrying cost of material 'Y' is Rs. 3.6 per unit and its total carrying cost is Rs. 9,000 per annum. What would be the Economic Order Quantity for material 'Y', if there is no safety stock of material 'Y'?

(Study Material, May 1995)

Q.12 Two components, A and B are used as follows:

Normal usage	50 per week each
Minimum usage	25 per week each
Maximum usage	75 per week each
Re-order quantity	A: 300; B:500
Re-order period	A: 4 to 6 weeks B: 2 to 4 weeks

Calculate:

- | | |
|--------------------------|-------------------------|
| i) Re-order Level | ii) Minimum stock level |
| iii) Maximum stock level | iv) Average Stock Level |

(Study Material, Practice Manual)

Q.13 A Company uses three raw materials: A, B & C for a particular product for which the following data apply

Raw Materials	A	B	C
Usage per unit of products (kgs.)	10	4	6
Re-order quantity (kgs.)	10,000	5,000	10,000
Price per kg.	0.10	0.30	0.15
Delivery period(in weeks)			
Minimum	1	3	2
Maximum	3	5	4
Average	2	4	3
Re-order Level (kgs.)	8,000	4,750	
Minimum Level			2,000

Weekly production varies from 175 to 225 units, average 200 units of the said product.

Calculate:

- i) Minimum stock of A
- ii) Maximum stock of B
- iii) Re-order level of C
- iv) Average stock level of C
- v) Average stock level of A

(Study Material, Practice Manual, Nov. 1987, Nov2006)

Q.14 PQR Ltd. manufactures a special product, which requires 'ZED'. The following particulars were collected for the year 2005-06:

Monthly demand of ZED	1,000 units
Cost of placing an order	Rs. 100
Annual carrying cost per unit	Rs 15
Normal usage	50 units per week
Minimum usage	25 units per week
Maximum usage	75 units per week
Re-order period	4 to 6 weeks

Required:

- i) Re-order quantity
- ii) Re-order level
- iii) Minimum stock level
- iv) Maximum stock level
- v) Average stock level

(Study Material, Practice Manual, May 2000, Nov 2000, May 1998)

Q.15 M/s. Tubes Ltd. is the manufacturers of picture tubes for T.V. The following are the details of their operation during 2009:

Average monthly market demand	2000 tubes
Ordering cost	Rs.100 per order
Inventory carrying cost	20% per annum
Cost of tubes	Rs. 500 per tube
Normal usage	100 tubes per week
Maximum usage	200 tubes per week
Minimum usage	50 tubes per week
Lead time to supply	6-8 weeks

Compute from the above:

- i) Economic Order Quantity. If the supplier is willing to supply quarterly 1,500 units at a discount of 5%, is it worth accepting?
- ii) Reorder Level
- iii) Minimum Level
- iv) Maximum Level.

(Practice Manual, Nov 2002)

Q.16 A Company manufactures 5000 units of a product per month. The cost of placing an order is Rs. 100. The purchase price of the raw material is Rs. 10 per kg. The re-order period is 4 to 8 weeks. The consumption of raw materials varies from 100 kg to 450 kg per week, the average consumption being 275 kg. The carrying cost of inventory is 20% per annum.

You are required to calculate:

- i) Re-order quantity
- ii) Re-order Level
- iii) Minimum Level
- iv) Maximum Level
- v) Average Stock Level

(May-2005)

Q.17 SK Enterprise manufactures a special product "ZE". The following particulars were collected for the year 2004:

Annual consumption	12,000 units (360 days)
Cost per unit	Re. 1
Ordering cost	Rs. 12 per order
Inventory carrying cost	24%
Normal lead time	15 days

Safety stock

30 days consumption

Required:

- (i) Re-order quantity
- (ii) Re-order level
- (iii) What should be the inventory level (ideally) immediately before the material order is received?

(Practice Manual, PCC May-2008)

Q.18 Zed Company supplies plastic crockery to fast food restaurants in metropolitan city. One of its products is a special bowl, disposable after initial use, for serving soups to its customers. Bowls are sold in pack of 10 pieces at a price of Rs. 50 per pack.

The demand for plastic bowl has been forecasted at a fairly steady rate of 40,000 packs every year. The company purchases the bowl direct from manufacturer at Rs. 40 per pack within a three days lead time. The ordering and related cost is Rs. 8 per order. The storage cost is 10% per annum of average inventory investment.

Required:

- i) Calculate Economic Order Quantity.
- ii) Calculate number of orders needed every year.
- iii) Calculate the total cost of ordering and storage bowls for the year.
- iv) Determine when the next order to be placed should. (Assuming that the company does maintain a safety stock and that the present inventory level is 333 packs with a year of 360 working days.

(Study Material, Nov 1987, May 1996))**Q.19 From the following details given below, calculate:**

- i) Re-order level
- ii) Maximum level
- iii) Minimum level
- iv) Danger level

Reorder quantity is to be calculated on the basis of following information:

- | | | |
|------|--|-------------|
| i. | Cost of placing an order | Rs.20 |
| ii. | Number of units to be purchased during the year | 5,000 units |
| iii. | Purchase price per unit inclusive of transportation cost | Rs. 50 |
| iv. | Annual cost of storage per units | Rs 5 |
| v. | Details of Lead time | |
| | a) Average | 10 days |
| | b) Maximum | 15 days |

c) Minimum	6 days
d) Emergency	4 days
vi. Rate of consumptions	
a) Average	15 units per day
b) Maximum	20 units per day

(Practice Manual, May 2002)

Q.20 The quarterly production of a company's product which has a steady market is 20,000 units. Each unit of a product requires 0.5kg of raw materials. The cost of placing one order for raw materials is Rs. 100 and the inventory carrying cost is Rs. 2 per kg. per annum. The lead time for procurement of raw material is 36 days and a safety stock of 1,000 kg. of raw material is maintained by the company. The company has been able to negotiate the following discount structure with the raw material supplier:

Order Quantity (in kgs)	(Discount in Rs.)
Upto- 6000	Nil
6000-8000	400
8000-16000	2000
16000-30000	3200
30000-45000	4000

You are required to:

- Calculate the re-order point taking 30 days in a month.
- Prepare a statement showing the total cost of procurement and storage of raw materials after considering the discount if the company elects to place one, two or six order in the year.
- State the number of order which the company should placed to minimize the costs after taking EOQ also into consideration.

Q.21 The annual demand for raw material is 4,000 units and the purchase price is expected to be Rs.90 per unit. The relevant incremental cost of processing an order is Rs.135 and the relevant cost of storage is estimated to be Rs.12 per unit.

- What is the optimum order quantity & the total relevant cost of this order quantity?
- Suppose that the Rs.135 estimated of the incremental cost of processing an order is incorrect & should have been Rs.80. Assume that all other estimates are correct. What is the cost of this prediction error? Assuming that the solution to part (a) is implemented for one year?
- Assume at the start of the period that a supplier offers 4,000 units at a price of Rs.86. The materials will be delivered immediately and placed in the stores. Assume that the

incremental cost of placing this order is zero and the original estimate of Rs.135 for placing an order for the economic batch size is correct. Should the order be accepted?

(Practice Manual, May 2001)

Q.22 A Company has the option to procure a particular material from two sources:

- **Source I** assures that defectives will not be more than 2% of supplied quantity.
- **Source II** does not give any assurance, but on the basis of past experience of supplies received from it, it is observed that defective percentage is 2.8%.

The material is supplied in lots of 1,000 units. Source II supplies the lot at a price, which is lower by Rs. 100 as compare to Source I. The defective units of materials can be rectified for use at a cost of Rs. 5/- unit.

You are required to find out which of the two sources is more economical.

(Practice Manual, May 2004)

Q.23 IPL Limited uses a small casting in one of its finished products. The castings are purchased from a foundry. IPL Limited purchases 54,000 castings per year at a cost of Rs. 800 per casting. The castings are used evenly throughout the year in the production process on a 360 day per year basis. The company estimates that it costs Rs. 9,000 to place a single purchase order and about Rs. 300 to carry one casting in inventory for a year. The high carrying costs result from the need to keep the castings in carefully controlled temperature and humidity conditions, and from the high cost of insurance. Cost of stock out is 1,500 per unit.

Delivery from the foundry generally takes 6 days, but it can take as much as 10 days. The days of delivery time and percentage of their occurrence are shown in the following tabulation:

Delivery time (days)	:	6	7	8	9	10
Percentage of occurrence	:	75	10	5	5	5

Required:

- a. Compute the economic order quantity (EOQ)
- b. Assume the company is will to assume a 15% risk of being out of stock. What would be the safety stock? The re-order point?
- c. Assume the company is willing to assume a 5% risk of being out of stock. What would be the safety stock? The re-order point?

- d. Assume 5% stock- out risk. What would be the total cost of ordering and carrying inventory for one year?
- e. Refer to the original data; assume that using process re-engineering the company reduces its cost of placing a purchase order to only Rs.600. In addition, company estimates that when the waste and inefficiency caused by inventories are considered, the true cost of carrying a unit in stock is Rs. 720per year.
 - i. Compute the new EOQ.
 - ii. How frequently would the company be placing an order, as compared to the old purchasing policy?

INVENTORY TURNOVER RATIO

(Study Material, Nov 1997)

Q.24 The following data are available in respect of material X for the year ended 31st March, 2009.

	Rs.
Opening Stock	90,000
Purchase during the year	2,70,000
Closing Stock	1,10,000

Calculate:

- (i) Inventory turnover ratio
- (ii) The number of days for which the average inventory is held.

(Study Material)

Q.25 From the following data for the year ended 31st December, 2008, calculate the inventory turnover ratio of the two items and put forward your comments on them.

	Material A	Material B
Opening Stock 1.1.2008	10,000	9,000
Purchase during the year	52,000	27,000
Closing Stock 31.12.2008	6,000	11,000

VALUATION OF MATERIAL RECEIPTS

(Study Material)

Q.26 An invoice in respect of a consignment of chemicals A and B provides the following information:

	Rs.
Chemical A: 10,000 lbs @ 10 per lb	1,00,000
Chemical B: 8,000 lbs @ 13 per lb	1,04,000
Sales tax @ 10%	20,400
Railway Freight	3,840
Total Cost	2,28,240

A shortage of 500 lbs. in chemical A and 320 lbs. in Chemical B is noticed due to normal breakages. You are required to determine the rate per lb. of each chemical, assuming a provision of 2% for further deterioration.

(Nov 1991)

Q.27 A manufacture of Surat purchased three chemical A, B and C from Mumbai. The invoice gave the following information:

	(Amount in Rs.)
Chemical A: 3,000 kg @ Rs. 4.20 per kg	12,600
Chemical B: 5,000 kg @ Rs. 3.80 per kg	19,000
Chemical C: 2,000 kg @ Rs. 4.75 per kg	9,500
Sales Tax	2,055
Railway Freight	1,000
Total	44,155

A shortage of 200 kg in Chemical A, of 280 kg in Chemical B and of 100 kg in Chemical C was noticed due to breakages. At Surat, the manufacturer paid Octrio duty @ Re.0.10 per kg. He also paid cartage Rs 22 for Chemical A, Rs.63.12 for Chemical B and Rs. 31.80 for Chemical C.

Calculate the stock rate that you would suggest for pricing issue of chemicals assuming a provision of 5% towards further deterioration.

(Study Material, Nov. 1995)

Q.28 At what price per unit would Part No. A 32 be entered in the Stores Ledger, if the following invoices were received from a supplier:

	Rs.
Invoice	1,000
200 units Part No. A 32 @ Rs. 5	200
Less-20% discount	800
Add: Excise duty @ 15%	<u>120</u>
	920
Add: Packing Charges (5 non returnable boxes)	<u>50</u>
	<u>970</u>

Notes:

1. A 2 % discount will be given for payment in 30 days.
2. Documents substantiating payment of excise duty is enclosed for claiming

MODVAT credit.

Q.29 The following details are available in respect of a consignment of 1,250 kg of material X.

- a) Invoice Price Rs. 20 per Kg.
- b) Excise Duty 25% on Net Invoice Price
- c) Sales Tax 8% of Net Invoice Price including Excise Duty
- d) Trade discount 10% on Invoice Price
- e) Insurance 1% on Net Invoice Price
- f) Delivery Charges Rs. 250
- g) Cost of containers @ Rs. 60 per container for 50 per kg of material. Rebate is allowed @ Rs. 40 per container if returned within 6 weeks, which is a normal feature.
- h) One container load of material was rejected on inspection and not accepted.
- i) Cost of unloading and handling @ Rs. 0.25 per kg of the cost of materials ultimately accepted.

On the basis of above you are required to find out the landed cost of per kg of material X.

(CS)

Q.30 One Parcel containing two important materials was received by a factory and the invoice pertaining to the same discloses the following information: **Rs.**

Material I-500 lbs @ Rs. 2 per lb	1,000.00
Material II- 600 lbs @ Rs. 1.60 per lb	960.00
Insurance	39.20
Sales Tax	98.00
Freight	55.00

Due to mishandling in the factory's store a loss of 10 units of material-I and 6 units of material-II was noted. **What rate would you adopt, for issuing these vital components' to the jobs? Also give your changed rate, if a provision of 10% is to be kept for probable risk of obsolescence.**

VALUATION OF MATERIAL ISSUES**(Study Material)**

Q.31 The following information is provided by **SUNRISE INDUSTRIES** for the fortnight of April, 2009.

Material EXE

Stock on 1.04.2009	100units @ 5 per unit
Purchases	
5.04.09	300units @ 6 per unit
8.04.09	500units @ 7 per unit
12.04.09	600units @ 8 per unit
Sales	
6.04.09	250units
10.04.09	400units
14.04.09	500units

Required:**A. Calculate using FIFO and LIFO methods of pricing issues:**

- The value of materials consumed during the period
- The value of stock of materials on 15.04.09

B. Explain why the figures in (a) and (b) in part of this question are different under the two methods of pricing of material issues used. You need not draw up the Store Ledgers.

(Practice Manual, PE-II Nov2008)

Q.32 The following are the details of receipts and issues of a material of stores in a manufacturing company for the period of three months ending 30th June, 2008.

Receipts:

Date	Quantity (kgs)	Rate per kg(Rs.)
April 10	1,600	5
April 20	2,400	4.90
May 5	1,000	5.10
May 17	1,100	5.20
May 25	800	5.25
June 11	900	5.40
June 24	1,400	5.50

There was 1,500 kgs in stock at April 1, 2008 which was valued at Rs. 4.80 per kg.

Issues:

Date	Quantity (kgs)
April 4	1,100
April 24	1,600
May 10	1,500
May 26	1,700
June 15	1,500
June 21	1,200

Issues are to be priced on the basis of weighted average method. The stock verifier of the company reported a shortage of 80 kgs on 31st May, 2008 and 60 kgs on 30th June, 2008. The shortage is treated as inflating the price of remaining material on account of shortage.

You are required to prepare a Store Ledger Account.

Q.33 Prepare a Store Ledger account on the basis of FIFO method from the following information available for the month of March, 2009.

1	Opening balance 500tonnes @ Rs. 200	20	Received 240tonnes @ Rs. 195
3	Issue 70tonnes.	24	Issue 300tonnes.
4	Issue 100tonnes.	25	Received 320tonnes @ Rs. 200
8	Issue 80tonnes.	26	Issue 115tonnes.
13	Received 200tonnes @ Rs. 190	27	Returned from dept Q 35tonnes
14	Returned from dept P 15tonnes	28	Received 100tonnes @ Rs. 200
16	Issue 180tonnes.		

ABC ANALYSIS

(Study Material)(Nov. 1998)

Q.34 A factory uses 4,000 varieties of inventory. In terms of inventory holding and inventory usage, the following information is compiled:

No. of varieties of inventories	%	% value of inventory holding (average)	% of inventory usage (in end-product)
3875	96.875	20	5
110	2.750	30	10
15	0.375	50	85
4,000	100.00	100.00	100.00

Classify the items of inventory as per ABC analysis with reasons.

LABOUR

Differential Piece Rate System

(Practice Manual, PCC May2007)

Q.1 Using Taylor's differential piece rate system; find the earning of A from the following particulars:

Standard time piece	12 minutes
Normal rate per hour(in a 8 hours day)	Rs.20
'A' produced	37 units

(Study Material)

Q.2 Using Taylor's differential piece rate system; find the earnings of the Amar, Akbar and Ali from the following particulars:

Standard time per piece	20 minutes
Normal rate per hour	Rs.9.00

In a 8 hours day

Amar produced	23 units
Akbar produced	24 units
Ali produced	30 units

Q.3 The following information is available about a work process:

Standard time allowed	5 units per hour
Normal time wage rates per hour	Rs.5

Differential piece rates to be applicable:

83% of piece rates when output is below standard.

125% of piece rates when output is above standard.

In a 8 hour day:

Worker A produces	35 units
Worker B produces	45 units

Calculate the wages payable to A and B for the day under Taylor's differential piece rate.

Q.4 (a) If the basic wages rate is Rs 2 per unit and standard task is 25 units. Compute the wages payable, under Merrick's Multiple Piece Rate System, to A, B & C who produces 18 units, 24 units and 26 units respectively

(Practice Manual, May 1998)

(b) Calculate the earnings of workers A, B & C under Straight Piece Rate System & Merrick's Piece Rate System from the following particulars:

Normal Rate per hour Rs 5.40

Standard Time per unit 1 Minute

Output per day is as follows:

Worker A- 390 Units

Worker B-450 units

Worker C-600 units

Working hours per day are 8

Halsey & Rowan Premium Plan

(Nov.1998)

Q.5 Calculate the earnings of a worker under; **Halsey Plan and Rowan plans from the following particulars:**

- (1) Hourly rate of wages guaranteed 0.50 per hour.
- (2) Standard time for producing one dozen articles – 3 hours
- (3) Actual time taken by the worker to produce 20 dozen articles-48 hours

(Study Material, Practice Manual, May 1991)

Q.6 (a) Bonus paid under the **Halsey** Plan with bonus at 50% for the time saved equals the bonus paid under the Rowan System. When will this statement hold good?

(Your answer should contain the proof).

(b) The time allowed for a job is 8 hours. The hourly rate is Rs. 8. Prepare a statement showing:

- i. The bonus earned
- ii. The total earnings of labour and
- iii. Hourly Earnings

Under the Halsey System with 50% bonus for time saved and Rowan System for each hour saved progressively.

(Practice Manual)

Q.7 'Under the Rowan Plan, a less efficient worker can obtain same bonus as a highly efficient worker'. Discuss with suitable examples.

(Study Material, Practice Manual)

Q.8 Wage negotiations are going the recognized Labour Union and the Management wants you as the Cost Accountant of the company to formulate an incentive scheme with a view to increase productivity.

The case of three typical workers Achyuta, Ananta and Govinda who produce respectively 180, 120 and 100 units of the company's product in a normal day of 8 hours is taken up for study.

Assuming that day wages would be guaranteed at 75 paise per hour and the piece rate would be based on a standard hourly output of this 10 units, **calculate the earnings of each of the three workers and the labour cost per 100 pieces under**

- (i) Day wages,
- (ii) Piece rate,
- (iii) Halsey scheme and
- (iv) Rowan scheme.

Also calculate under the above schemes the average cost of labour for the company to produce 100 pieces.

(Practice Manual, May, 1977)

Q.9 During the first week of April, 2010 the workman Mr. A manufactures 300 articles. He receives wages for a guaranteed 48 hours week at the rate of Rs. 4 per hour. The estimated time to produce one article is 10 minutes and under incentive scheme the time allowed is increased by 20%.

Calculate his gross wages according to:

- a) Piece Work with a guaranteed weekly wages,
- b) Rowan premium bonus, and
- c) Halsey premium bonus; 50% to workman.

(Study Material, Practice Manual, Nov. 1999)

Q.10 A skilled worker in XYZ Ltd. is paid a guaranteed wage rate of Rs.30 per hour. The standard time per unit for a particular product is 4 hours. P, a machine man, has been paid wages under the Rowan Incentive Plan and he had earned an effective hourly rate of Rs.37.50 on the manufacture of that particular produced.

What could have been his total earning and effective hourly rate, had been out on Halsey Incentive Scheme (50%)?

(Study Material)

Q.11 The company has a suggestion of box scheme and an award equivalent to one and a half months saving in labour cost is passed on to the employee whose suggestion is accepted.

Suggestion of an employee to use a Jig for a manufacturing operation of a component is accepted. The cost of the Jig which has a life of one year is Rs. 1,000 and the use of the Jig will reduce the standard time by 8 minutes.

Compute from the following data the amount of award payable to the employee who has given the suggestion.

- (i) Number of pieces to be produced in the year : 15,000
- (ii) Standard time per piece before use of Jig : 80 minutes
- (iii) Average wage rate of workmen Rs. 160 per day of 8 hours.
- (iv) Average efficiency of workmen: 80%.

(Practice Manual, May 1996)

Q.12 An article passes through five hand operations as follows:

Operation No.	Time per article	Grade of worker	Wages rate per hour
1	15 Minutes	A	Rs.0.65
2	25 Minutes	B	Rs.0.50
3	10 Minutes	C	Rs.0.40
4	30 Minutes	D	Rs.0.35
5	20 Minutes	E	Rs.0.30

The factory works 40 hours in a week and the production target is 600 dozens per week.

Prepare a statement showing for each operation and in total the number of operators required, the labour cost per dozen and the total labour cost per week to produce the total targeted output.

(Practice Manual, May 1988, Nov.2007, May2009)

Q.13 Two workmen 'X' & 'Y', produce the same product using the same material. Their normal wages rate is also the same. 'X' is paid bonus as per the Rowan system, while 'Y' is paid bonus as per the Halsey system. The time allowed to make the product is 100 hours. 'X' takes 60 hours while 'Y' takes 80 hour to complete the product. The factory overhead rate is Rs.10 per men hour actually worked. The factory cost for the product for 'X' is Rs.7,280 and for 'Y' it is Rs.7, 600.

- i. Find the normal rate of wages.
- ii. Find the cost of material.

- iii. Prepare a statement comparing the factory cost of the product as made by two workers.

(Study Material, Nov.1997)

Q.14 A job can be executed either through workman A or B. A takes 32 hours to complete the job while B finishes it in 30 hours. The standard time to finish the job is 40 hour.

The hourly wage rate is same for both the workers. In addition workman A is entitled to receive bonus according to Halsey plan (50% sharing) while B is paid bonus as per Rowan plan. The work overheads are absorbed on the job at Rs.7.50 per labour hour worked. The factory cost of the job comes to Rs.2, 600 irrespective of the workman engaged.

Find out the hourly wage rate and cost of raw materials input. Also show cost against each element of cost included in factory cost.

(Practice Manual, May1993/2004)

Q.15 Z Ltd. is working by employing 50 skilled workers. It is considering the introduction of some incentive scheme-either Halsey scheme (50% bonus) or Rowan scheme of wages payment **for increasing the labour productivity to cope up the increasing demand for the product by 40%**. It is believed that proposed incentive scheme could bring about **an average 20% increase over the present earning of the workers**; it could act as sufficient incentive for them to produce more.

As a result of this scheme, the increase in productivity has been observed as revealed by the following figures for the month of April, 2004.

Hour the rate of wages (guaranteed)	Rs. 30
Average time for producing 1unit by one worker at the previous performance (This may be taken as time allowed)	1.975 hours
No. Of working hours per day of each worker	8
No. Of working days in month	24
Actual production during the month	6,120 units

You are required to calculate:-

- (i) Effective rate of earning per hour under Halsey & Rowan scheme.
- (ii) Saving to the Z Ltd. in terms of direct labour cost per piece.
- (iii) Advice Z Ltd. about the selection of the scheme to fulfill his assurance

(Practice Manual, May 2002)

Q.16 The finishing shop of a company employs 60 direct workers. Each workers is paid Rs.400 as wages per week of 40 hours. When necessary, **overtime is worked up to a maximum of 15 hours per week per worker at time rate plus one-half as premium.** The current output on an average is 6 units per man hour which may be regarded as standard output. **If bonus scheme is introduced, it is expected that the output will increase to 8 units per man hour.** The worker will, if necessary continue to work overtime up to the specified limit although no premium on incentives will be paid.

The company is considering introduction of either Halsey scheme or Rowan scheme of wage incentive system. The budgeted weekly output is 19,200 units. The selling price is Rs.11 per unit and the direct material cost is Rs.8 per unit. The variable overheads amount to Rs.0.50 per direct labour hour and the fixed overhead is Rs.9, 000 per week.

Prepare a statement to show the effect on the Company's weekly profit of the proposal to introduce (a) **Halsey scheme** and (b) **Rowan scheme.**

(Practice Manual, Nov 2002)

Q.17 A company is undecided as to what kind of wage scheme should be introduced. The following particulars have been compiled in respect of three systems, which are under consideration of the management:

Worker			
	A	B	C
Actual hours worked in a week	38	40	34
Hourly rate of wages Rs.	6	5	7.20
Production in units:			
Product P	21	-	60
Product Q	36	-	135
Product R	46	25	-
Standard time allowed per unit each product is:	P	Q	R
Minutes	12	18	30

For the purpose of piece rate, each minute is valued at Rs.10

You are required to calculate the wages of each worker under:

- Guaranteed hourly rates basis.
- Piece work earning basis, but guaranteed at 75% of basic pay (guaranteed hourly rates) if his earning are less than 50% of basic pay.

(c) Premium bonus basis where the worker receives bonus based on Rowan scheme.

Q.18 In a factory bonus hours are credited to the employee in the proportion to time which time saved bears to time allowed. Jobs are carried forward from one week to another. No overtime is worked and payment is paid in full for all units worked on, including those subsequently rejected.

Calculate for each employee:-

- i. The bonus hours and the amount of bonus earned.
- ii. The total wages cost, and
- iii. The wages cost of each 100 good units produced.

Employees	A	B	C
Basic wages rate per hour (Rs.)	3.00	4.80	3.60
Units produced	2,500	2,200	3600
Time allowed per 100 units	2 hrs 36 mnts	3 hrs	1hrs 30mnts
Time taken (hrs)	52	75	48
Reject (units)	100	40	400

(Study Material, Practice Manual)(Nov.2005)

Q.19 The existing Incentive system of Alpha Limited is as under:

Normal working week 5 days of 8 hours each plus 3 late shifts of 3 hours each

Rate of Payment **Day Work:** Rs. 160 per hour

Late Shift: Rs. 225 per hour

Average output per operator for 49-hours week i.e. including 3 late shifts.

=120 articles

In order to Increase output and eliminate Overtime, it was decided to switch on to a system of payment by results. The following Information is obtained:

Time-rate (as usual)	Rs. 160 per hour
Basic time allowed for 15 articles	5 hours
Piece-work rate	Add 20% to basic piece-rate
Premium Bonus	Add 50% to time.

Required:

(i) Prepare a **Statement showing hours worked, weekly earnings, number of articles produced and labour cost per article for one operator** under the following systems:

(a) Existing time-rate

- (b) Straight piece-work
- (c) Rowan system
- (d) Halsey premium system

Assume that 135 articles are produced in a 40-hour week under straight piece work, Rowan Premium system, and Halsey premium system above and worker earns half the time saved under Halsey premium system.

Gantt Task & Bonus System: This system is a combination of time and piecework system. According to this system a high standard or task is set and payment is made at time rate to a worker for production below the set standard. Wages payable to workers under the plan are calculated as under:

Output	Payment
i. Output below standard	Guaranteed time rate
ii. Output at standard	Time rate plus bonus of 20% of time rate
iii. Output over standard	High piece rate

(Study Material)

Q.20 In a factory the standard time allowed for completing a given task (50 units), is 8 hours. The guaranteed time wages are Rs.20 per hour. If a task is completed in less than the standard time, the high rate of Rs.4 per unit is payable. Calculate the wages of a worker, **under the Gantt system**, if he completes the task in 10 hours; (ii) 8 hours, and (iii) in 6 hours. Also ascertain the comparative rate of earnings per under the three situation.

Emerson Efficiency System: Under this system minimum time wages are guaranteed. But beyond a certain efficiency level, bonus in addition to minimum day wages is given. Earning is calculated as follows:

Efficiency	Payments
i. Below 66.67%	No Bonus, only guaranteed time rate is paid
ii. 66.67% to 100%	Normal Time wages + Bonus. Bonus rate can be up to 20%
iii. Above 100%	120% of Time wages +additional bonus of 1% for each 1% increase in efficiency.

(Study Material)

Q.21 From the following information you are required to calculate the bonus and earnings under **Emerson Efficiency system**. The relevant information is as under:

Standard working hours	:	8 hours a day
Standard output per hour in units	:	5
Daily wage rate	:	Rs.50

Actual output in units

Worker A	25 units
Worker B	40 units
Worker C	45 units

(Study Material, Practice Manual)(May 1999)

Q.22 During audit of account of G Company, your assistant found errors in the calculation of the wages of factory workers and he wants you to verify his work.

He has extracted the following information:

- (i) The contract provides that the **minimum wage for a worker is his base rate**. It is also paid for downtime i.e., the machine is under repair or the worker is without work. The standard work week is 40 hours. For overtime production, workers are paid 150 percent of base rate
- (ii) **Straight Piece Work**-The worker is paid at the rate of 20 paisa per piece.
- (iii) **Percentage Bonus Plan**-standard quantities of production per hour are established by the engineering department. The workers' average hourly production, determined from his total hours worked and his production, is divided by the standard quantity of production to determine his efficiency ratio. The efficiency ratio is then applied to his base rate to determine his hourly earnings for the period.
- (iv) **Emerson Efficiency Plan**-A minimum wages is paid for production up to 66-2/3% of standard output or efficiency. When the workers production excess 66-2/3% of the standard output, he is paid bonus as per the following table:

Efficiency Level	Bonus
Up to 66 2/3%	Nil
Above 66 2/3% to 79%	10%
80%-99%	20%
100%-125%	45%

Your assistant has produced the following pertaining to certain workers of a weekly pay roll:

Workers	Wage Incentive Plan	Total hours	Down time hours	Units produced	Std Units	Base Rate	Gross Wages as per books (Rs.)
Rajesh	Straight piece work	40	5	400	-	1.80	85
Mohan*	Straight piece work	46	-	455	-	1.80	95
John*	Straight piece work	44	-	425	-	1.80	85
Harish	Percentage bonus plan	40	4	250	200	2.20	120
Mahesh	Emerson	40	-	240	300	2.10	93
Anil	Emerson (40 hours production)	40	-	600	500	2.00	126

*Total hours include overtime hours.

Prepare a schedule showing whether the above computations of workers' wages are correct or not. Give details.

Bedeaux System: Under this scheme, firstly the quantum of work that a worker can perform is expressed in Bedeaux points or 'B's. These points represent the standard time in terms of minutes required to perform the job. The standard numbers of points in terms of minutes are ascertained after a careful and detailed analysis of each operation or job.

Workers who are not able to complete tasks allotted to them within the standard time are paid at the normal daily rate.

Those who complete tasks within time allotted to them, are entitled for a bonus, equal to the wages for time saved as indicated by excess of B's earned (standard minutes for work done) over actual time. Workers are paid 75% of the time saved.

$$\text{Earning} = \text{Hour worked} \times \text{Rate per hour} + 75\% \left[\frac{\text{Bedeaux points saved} \times \text{Rate per hour}}{60} \right]$$

(Study Material)

Q.23 Calculate the earnings of worker from following information under Bedeaux system:

Standard time for a product A-30 seconds plus relaxation allowance of 50%.

Standard time for a product B-20 seconds plus relaxation allowance of 50%.

During 8 hour day for

Actual output of product for A	500 units
Actual output of product B	300 units
Wage rate	Rs.10 per hour

Group Bonus Scheme

(Study Material)

Q.24 A, B and C were engaged on a group task for which a payment of Rs.725 was to be made. A's time basis are Rs.8 per day, B's Rs.6 per day and C's Rs.5 per day. A worked for 25 days; B worked for 30 days; and C for 40 days. **Distribute the amount of Rs.725 among the three workers.**

(Study Material)

Q.25 Both direct and indirect labour of a department in a factory is entitled to production bonus in accordance with a group incentive scheme, the outline of which is as follows:

- (a) **For any production in excess of the standard**, fixed at 16,800 tonnes per month (of 28 days), a general incentive of Rs.15 per tonnes is paid in aggregate. The total amount payable to each separate group is determined on the basis of an assumed percentage of such excess production being contributed by it, namely @ 65% by direct labour ,@ 15% by inspection staff,@ 12% by maintenance staff and@ 8% by supervisory staff.
- (b) Moreover, if the excess production is more than 20% above the standard, direct labour also get a special bonus @ Rs.5 per tonne for all production in excess of 120% of standard.
- (c) Inspection staffs are penalized @ Rs.20 per tonne for rejection by customer in excess of 2% of production.
- (d) Maintenance staff is also penalized @ Rs.20 per hour for breakdown.

From the following particulars for a month, work out production bonus earned by each group:

- (a) Actual working days : 25
- (b) Production : 21,000 tonnes
- (c) Rejection by customer : 500 tonnes
- (d) Machine breakdown : 40 hours

Q.26 In an assembly shop of a motorcycle factory 4 workers A, B, C and D work together as a team and are paid on group piece rate. They also work individually on day rate job. In a 44 hour week the following hours have been spent by A, B, C and D on group piece work

viz. A-40 hours, B-40 hours, C-30 hours & D-20 hours. They balance of the time has been booked by each worker on day work basis.

Their hourly rates are:-A-50 paisa, B-75 paisa, C-Rs.1.00 & D-Rs.1.00

The group piece rate is Rs.1.00 per unit and the team has produced 150 units. Calculate the gross weekly earning of each workman taking into consideration that each individual is entitled to a dearness allowance of Rs.20 per week.

(Study Material)(Nov.2000)

Q.27 The present output details of a manufacturing department are as follows:

Average output of week	48,000 unit from 160 employees
Saleable value of output	Rs.6, 00,000
Contribution towards fixed expenses and profit	Rs.2, 40,000

The Board of Directors plans to introduce more mechanization into the department at a capital cost of Rs.1, 60,000. The effect of this will be to reduce the number of employees to 120 and increasing the output per individual employee by 60%. To provide the necessary incentive to achieve the increased output, the Board intends to offer a **1% increase on the piece work rate of Rs.1 per unit for every 2% increase** in average individual output achieved. To sell the increase output, it will be necessary to decrease the selling price by 4%. **Calculate the extra weekly contribution** resulting from the proposed change and evaluate for the Board's information, the desirability of introducing the change.

Overtime Premium

(Study Material)

Q.28 It is seen from the job card for repair of the customer's equipment that a total of 154 labour hours have been put in as detailed below:

Days	Worker 'A' paid at Rs. 2 per day of 8 hours	Worker 'B' paid at Rs. 1 per day of 8 hours	Supervisory worker 'C' paid of Rs. 3 per day of 8 hours.
Monday	10-1/2 hours	8 hours	10-1/2 hours
Tuesday	8 hours	8 hours	8 hours
Wednesday	10-1/2 hours	8 hours	10-1/2 hours
Thursday	9-1/2 hours	8 hours	9-1/2 hours
Friday	10-1/2 hours	8 hours	10-1/2 hours
Saturday	-	8 hours	8 hours
Total	49 hours	48 hours	57 hours

In terms of an award in a labour conciliation, the workers are to be paid dearness allowance on the basis of cost of living index figures relating to each month which works out @ Rs.96 for the relevant month. The dearness allowance is payable to all workers irrespective of wage rate if they are present or are on leave with wages on all working days.

Sunday is a weekly holiday and each worker has to work for 8 hours on all week days and 4 hours on Saturdays; the workers are however paid full wages for Saturday (8 hours for 4 hours worked).

Workers are paid overtime according to the Factories Act for hours worked in excess of normal working hours on each day. Excluding holidays (including 4 hours work to be put in on Saturday) the total numbers of hours work out to 192 in the relevant month. The company's contribution to Provident Fund and Employees State Insurance Premium are absorbed into overheads.

Work out the wages payable to each worker.

(Study Material)

Q.29 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
Over time before Sunday and after working hours	: 2, 0000 hours
Over time 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
Over time before & after working hrs.	: 100 hours
Sundays and holidays	: <u>25 hours</u>
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:

- Where **overtime is worked** regularly throughout the year as a policy **due to the labour shortage**.
- Where overtime is worked **at the request of the customer** to expedite the job.
- Where overtime is worked irregularly **to meet the production target**.

Elements of Wages

(Study Material)

Q.30 X an employee of ABC Co. gets the following emoluments and benefits.

(a)	Basic pay	Rs. 1000 p.m.
(b)	Dearness	Rs. 200 p.m.
(c)	Bonus	Rs. 20% of salary and D.A.
(d)	Other allowances	Rs. 250 p.m.
(e)	Employee's contribution to P.F.	10% of salary and D.A.

'X' work for 2400 hours per annum, out of which 400 hours are non-productive and treated as normal idle time. You are required to find out the effective hourly cost of employee 'X'.

(Study Material)

Q.31 A worker is paid Rs.100 per month and a dearness allowance of Rs.200 per month. There is a provident fund @ 8.33 % and the employer also contributes the same amount as the employee. The Employees state Insurance Corporation premium is 1 ½% of wages of which ½% is paid by the employees. It is the firm's practice to pay 2 months' wages as bonus each year.

The numbers of working days in a year are 300 of 8 hours each. Out of these the worker is entitled to 15 days leave on full pay.

Calculate the wage rate per hour of costing purposes.

(Study Material, Practice Manual)

Q.32 Calculate the earnings of A and B from the following particulars for a month and allocate the labour cost to each job X, Y and Z:

	A	B
i. Basic Wages	Rs. 100	160
ii. Dearness Allowances	50%	50%
iii. Contribution to provident fund(on basic wages)	8%	8%
iv. Contribution to ESI(on basic wages)	2%	2%
v. Overtime	10 hours	-
vi. Idle time & leave	-	16 hours

The normal working hours for the month are 200. Overtime is paid at double the total of normal wages and dearness allowance. Employer's contribution to state Insurance and

provident fund are as equal rates and employees' contribution. The Two workers were employed on jobs X, Y and Z in the following proportions:

	Jobs		
	X	Y	Z
Worker A	40%	30%	30%
Worker B	50%	20%	30%

Overtime was done on Job Y

(Study Material)

Q.33 In a factory working six days in a week and eight hours each day, a worker is paid at the rate of Rs.100 per day basic plus D.A. @ 120% of basic. He is allowed to take 30 minutes off during his hours shift for meals-break and a 10 minutes recess for rest. During a week, his card showed that his time was chargeable to:

Job X	15 hrs.
Job Y	12 hrs.
Job Z	13 hrs.

The time not booked was wasted while waiting for a job. In Cost Accounting, how would you allocate the wages of the workers for the week?

(Study Material)

Q.34 Calculate the labour hour rate of a worker X from the following data:

Basic pay	Rs.1, 000 p.m.
D.A.	Rs.300 p.m.
Fringe benefits	Rs.100 p.m.

Number of working days in a year 300. 20 days are availed off as holidays on full pay in a year. Assume a day of 8 hours.

Labour Turnover

Q.35 From the following data calculate the labour turnover by applying

(i) Separation method (ii) Replacement method (iii) Flux method:

No. Of workers on the payroll

At the beginning of the month	950
At the end of the month	1,050

During the month 10 workers left. 30 persons were discharged and 140 workers were recruited. Of these, 20 workers are recruited in the vacancies of those leaving, while the rest were engaged for an expansion Scheme.

(Practice Manual, May 2001, Nov.2008)

Q.36 The following information is collected from the personnel department of ST limited for the year ending 31st March, 2008:

Number of workers at the beginning of the year	8,000
Number of workers at the end of the year	9,600
Number of workers left the company during the year	500
Number of workers discharged during the year	100
Number of workers replaced due to left & discharges	700
Additional workers employed for expansion during the year	1,500

You are required to calculate labour turnover rate by using separation method, replacement method and flux method.

(Study Material)

Q.37 The cost accountant of Y Ltd. has computed labour turnover rates for the quarter ended 31st March, 1997 as 10%, 5% and 3% respectively under 'Flux method' , 'Replacement method' and 'Separation method'.

If the number of workers replaced during that quarter is 30, find out the number of:

- (1) Worker recruited and joined and
- (2) Workers left and discharged.

(Study Material, Practice Manual)(May 1998)

Q.38 The management of Bina and Rina Ltd. are worried about their increasing labour turnover on the factory and before analyzing the causes and taking remedial steps; they want to have an idea of the profit foregone as a result of labour turnover in the last year.

Last year sales amounted to Rs. 83, 03,300 and P/v ratio was 20 per cent. The total number of actual hours worked by the Direct Labour force was 4.45 Lakhs. **As a result of the delays by the Personal Department in filling vacancies due to labour turnover 1,00,000 potentially productive hours were lost.** The actual direct labour hours included 30,000 hours attributable to training new recruits, out of which half of the hours were unproductive.

The costs incurred consequent on labour turnover revealed on analysis, the following:

Settlement cost due to leaving	Rs.43, 820
Recruitment costs	Rs. 26,740
Selection costs	Rs. 12,750
Training costs	Rs. 30,490

Assuming that the potential production lost as a consequence of labour turnover could have been sold at prevailing prices find the profit foregone last year on account of labour turnover.

OVERHEAD

APPORTIONMENT OF OVERHEADS

Overheads Costs

Rent
 Repair and Maintenance of building
 Heating and Lighting
 Air-Conditioning
 Indirect Material
 Indirect Labour
 Depreciation
 Insurance
 Repair and Maintenance of Plant
 Supervision
 Time Keeping
 Canteen Expenses
 Employee welfare expenses
 Personnel Overheads
 Employer's contribution to P.F ESI
 Workmen Compensation
 Leave with pay
 Gratuities
 Crane Expenses
 General Overheads
 General Machine expenses
 Power

Basis of Apportionment

Floor Area
 Floor Area
 Floor Area
 Floor Area
 Direct Material
 Direct Labour
 Asset Value
 Asset Value
 Asset Value
 Number of Workers
 Number of Workers
 Number of Workers
 Number of Workers
 Number of Workers
 Direct Labour/Wage bill
 Direct Labour/Wage bill
 Direct Labour/Wage bill
 Direct Labour/Wage bill
 No. of hrs crane worked in department
 Labour hours or machine hours
 Value of Plant machinery
 H.Power of Machine or H.P X hours worked

Service Departments

Stores Deptt
 Personal Deptt
 Purchase Deptt

 Welfare Deptt
 Time Keeping and Payroll Deptt
 External Transport
 Tool- Room Expense
 Inspection expense

Basis Of Apportionment

Number of Material requisition
 No of employees
 Value of material purchased or No. of purchase orders
 No. of Employees
 No. of Employees
 Ton-miles,Truck-miles,No of Package
 Direct labour hours
 Hours spent on inspection or value of output

Q.1 A company's production for the year ending 31.03.2010 is given below:

Items	Production Deptt.			Office	Stores	Work shop	Total
	P1	P2	P3				
	Rs.						
Direct wages	20,000	25,000	30,000	-	-	-	75,000
Direct materials	30,000	35,000	45,000	-	-	-	1,10,000
Indirect materials	2,000	3,000	3,000	1,000	2,000	2,000	13,000
Indirect wages	3,000	3,000	4,000	10,000	10,000	5,000	35,000
Area in square metres	200	250	300	150	100	250	1,250
Book value of machinery	30,000	35,000	25,000	-	-	15,000	1,05,000
Machine hours worked	10,000	20,000	15,000	-	-	5,000	50,000

General Expenses:

(i) Rent	Rs.12, 500
(ii) Insurance	Rs.1, 050
(iii) Depreciation	15% of value of machinery
(iv) Light	Rs.1, 250

You are required to prepare an overhead analysis sheet for the departments showing clearly the basis of apportionment when necessary.

(Study Material)

Q.2 XL Ltd. has three production departments and four service department. The expenses for these departments as per Primary Distribution Summary are as follows:

Production Departments:	Rs.	Rs.
A	30,000	
B	26,000	
C	<u>24,000</u>	80,000
Service Departments:	Rs.	Rs.
Stores	4,000	-
Time-keeping and Account	3,000	
Power	1,600	
Canteen	<u>1,000</u>	9,600

The following information is also available in respect of the production department:

	Dept. A	Dept. B	Dept. C
Horse power of Machine	300	300	200
Number of worker	20	15	15

Value of stores requisition in (Rs.) 2,500 1,500 1,000

Apportion the cost of service departments over the production departments.

(Study Material)

Q.3 The Expenses of two production departments A and B and two service departments X and Y are as under:

	Amount	Apportionment Basis		
	Rs.	Y	A	B
X	2,000	25%	40%	35%
Y	1,500	-	40%	60%
A	3,000			
B	3,200			

Apportion the cost of service departments over the production departments.

(Study Material, Practice Manual, May 1988)

Q.4 Deccan manufacturing Ltd., have three departments which are regarded as production department. Service departments' costs are distributed to these production departments using the "**step ladder method**" of distribution. Estimates of factory overhead costs to be incurred by each department in the forthcoming year are as follows. Data required for distribution is also shown against each department:

Department	Factory overhead Rs.	Direct labour Hours	No. Of employees'	Area in sq. M.
Production				
X	1, 93,000	4,000	100	3,000
Y	64,000	3,000	125	1,500
Z	83,000	4,000	85	1,500
Service				
P	45,000	1,000	10	500
Q	75,000	5,000	50	1,500
R	1, 05,000	6,000	40	1,000
S	30,000	3,000	50	1,000

The overhead costs of the four service departments are distributed in the same order, viz., P, Q, R and S respectively on the following basis.

Department	Basis
P	Number of employees
Q	Direct labour hours
R	Area in square metres
S	Direct labour hours

You are required to:

- (a) Prepare a schedule showing the distribution of overhead costs of the four service departments to the three production departments; and
- (b) Calculate the overhead recovery rate per direct labour hour each of the three production departments.

(Practice Manual, Nov. 2006)

Q.5 RST Ltd. has two production departments; Machining and finishing. There are three service departments-: **Human Resource (HR), Maintenance and design.** The budgeted costs in these service departments are as follows:

	HR (Rs.)	Maintenance (Rs.)	Design (Rs.)
Variable	1,00,000	1,60,000	1,00,000
Fixed	<u>4,00,000</u>	<u>3,00,000</u>	<u>6,00,000</u>
	5,00,000	<u>4,60,000</u>	<u>7,00,000</u>

The usage of these service departments' output during the year just completed is as follows:

Provision of service output (in hours of service)

Users of service	Providers of service		
	HR	Maintenance	Design
HR	--	--	--
Maintenance	500	--	--
Design	500	500	--
Machining	4,000	3,500	4,500
Finishing	<u>5,000</u>	<u>4,000</u>	<u>1,500</u>
Total	10,000	8,000	6,000

Required:

- (i) **Use the direct method to re-apportion** RST Ltd's service department cost to its production department.
- (ii) **Determine the proper sequence** to use in re-apportioning the firm's service department cost by **step-down method**.
- (iii) **Use the step-down method** to reappportion the firm's service department cost.

(Practice Manual, May1973, Nov.1985)

Q.6 Selfhelp Ltd. has gensets and produces its own power. Data for power costs are as follows:

Horse power hours	Production deptts.		Service deptts.	
	A	B	X	Y
Needed capacity for production	10,000	20,000	12,000	8,000
Used during the month of May	8,000	13,000	7,000	6,000

During the month of May costs for generating power amounted to Rs.9, 300 of this Rs.2, 500 were considered to be fixed cost. Service Depts. X renders service to A, B and Y in the ratio 13:6:1 while Y renders service to A & B in the ratio 31:3. Given that the direct labour hours in deptt. A & B are 1650 hours and 2175 hours respectively, **find the power cost per labour hour in each of these two Deptts.**

(Study Material)**Q.7 Service departments expenses**

	Rs.
Boiler House	3,000
Pump Room	<u>600</u>
	<u>3,600</u>

The allocation is:

	Production department		Service department	
	A	B	Boiler House	Pump Room
Boiler House	60%	35%	-	5%
Pump Room	10%	40%	50%	-

(Practice Manual, Nov.1996)

Q.8 A company has two production departments and two service departments. The data relating to a period are as under:

	Production department		Service department	
	PD1	PD2	SD1	SD2
Direct wages	95,000	50,000	20,000	10,000
Direct material (Rs.)	80,000	40,000	10,000	20,000
Overheads (Rs.)	80,000	50,000	30,000	20,000
Power requirement (Kwh)	20,000	35,000	12,500	17,500
at normal capacity operations				
Actual power (Kwh)	13,000	23,000	10,250	10,000
Consumption during the period				

The power requirements of these departments are met by a power generation plant. The said plant incurred an expenditure, which is not included above of Rs.1, 21,875 out of which a sum of Rs.84, 375 was variable and the rest fixed.

2. A statement showing re- distribution of service departments expenses to production department.
3. Machine hour rate of the production department A, B and C.

(Study Material)

Q.10 The ABC Company has the following account balance and distribution of direct charges on 31st March, 2005.

	Total	Production Depts.		Service Depts.	
		Machine Shop	Packing	Gen. plant	Stores & Maint.
Allocated Overheads:	Rs.	Rs.	Rs.	Rs.	Rs.
Indirect labour	1,4650	4,000	3,000	2,000	5,650
Maintenance material	5,020	1,800	700	1,020	1,500
Misc. supplies	1,750	4,00	1,000	150	200
Superintendent's Salary	4,000	-	4,000	-	-
Cost & payroll salary	10,000			10,000	
Overheads to be Apportioned:					
Power	8,000				
Rent	12,000				
Fuel and heat	6,000				
Insurance	1,000				
Taxes	2,000				
Depreciation	1,00,000				
	1,64,420	6,200	4,700	17,170	7,350

The following data were compiled by means of the factory survey made in the previous year:

	Floor Space	Radiator Sections	No. of Employees	Investment Rs.	H. P. Hours
Machine shop	2,000 Sq. Ft	45	20	6,40,000	3,500
Packing	800	90	10	2,00,000	500
General plant	400	30	3	10,000	-
Store & maint.	1,600	60	5	1,50,000	1,000
	4,800	225	38	10,00,000	5,000

Expenses charged to the stores and maintenance departments are to be distributed to the other departments by the following percentages:

Machine shop 50%; Packing 20%; general Plant 30%; general plant overheads is distributed on the basis of number of employees:

- (a) Prepare an overhead distribution statement with supporting schedules to show computation and basis of distribution including distribution of the service department expenses to producing department.
- (b) Determine the service department distribution by the method of nearest rupee.

(Study Material, Practice Manual, Nov2007)

Q.11 Modern manufactures Ltd. have three production departments P1, P2, P3 and two service departments S1 and S2 details pertaining to which are as under:

	P1	P2	P3	S1	S2
Direct wages (Rs.)	3,000	2,000	3,000	1,500	195
Working hours	3,070	4,475	2,419	-	-
Value of machines (Rs.)	60,000	80,000	1,00,000	5,000	5,000
H.P. of machines	60	30	50	10	-
Light points	10	15	20	10	5
Floor space (sq. ft.)	2,000	2,500	3,000	2,000	500

The following figures extracted from the accounting records are relevant:

	Rs.
Rent and rates	5,000
General lighting	600
Indirect wages	1,939
Power	1,500
Depreciation on machines	10,000
Sundries	9,695

The expenses of the service department are allocated as under:

	P1	P2	P3	S1	S2
S1	20%	30%	40%	-	10%
S2	40%	20%	30%	10%	-

Find out the total cost of product X which is processed for manufacture in departments P1, P2 and P3 for 4,5 and 3 hours respectively, given that its direct material cost is Rs.50 and direct labour cost is Rs.30.

(Study Material, Practice Manual, Nov1993)

Q.12 A Ltd. manufactures two products A and B. The manufacturing division consists of two production departments P1 and P2 and two service department S1 and S2.

Budgeted overhead rates are used in the production department to absorb factory overheads to the products. The rate of department P1 is based on direct machine hours,

while the rate of department P2 is based on direct labour hours. In applying overheads, the pre-determined rates are multiplied by actual hours.

For allocating the service department costs to production department, the basis adopted is as follows:

- (i) Cost of department S1 to department P1 and P2 equally, and
- (ii) Cost of department S2 to department P1 and P2 in the ratio of 2:1 respectively.

The following budgeted and actual data are available:

Factory overheads budgeted for the year:

		Rs.		Rs.
Departments	P1	25, 50,000	S1	6, 00,000
	P2	21, 75,000	S2	4, 50,000

Budgeted output in units:

Product A 50,000

Product B 30,000

Budgeted raw-material cost per unit:

Product A Rs.120

Product B Rs.150

Budgeted time required for production per unit:

Department P1:

Product A: 1.5 machine hours

Product B: 1.0 machine hour

Department P2:

Product A: 2 direct labour hours

Product B: 2.5 direct labour hours

Average wage rate budgeted in department P2 are:

Product A-Rs.72 per hour and product B-Rs.75 per hour.

All materials are used in department P1 only.

Actual data: (for the month of July, 2005)

Units actually produced: Product A: 4,000 units,
Product B: 3,000 units

Actual machine hours worked in department P1:

On Product A 6,100 hours;

Product B 4,150 hours

Actual direct labour hours worked in department P2:

On Product A 8,200 hours;

Product B 7,400 hours.

Costs actually incurred:

	Product A	Product B
	Rs.	Rs.
Raw materials	4, 89,000	4, 56,000
Wages	5, 91,900	5, 52,000

	Rs.	Rs.
Overheads: department	P1 2, 31,000	S1 60,000
	P2 2, 04,000	S2 48,000

You are required to:

- Compute the pre-determined overhead rate for each production department.
- Prepare a performance report for July, 2005 that will reflect the budgeted costs and actual costs.

(Study Material)**Q.13 The monthly budget of a department is as under: Rs.**

Direct material	45,000
Direct wages	60,000
Overheads	90,000
Direct labour hours	15,000
Machine hours	30,000

Find the overhead recovery rate based on at least five different possible methods of absorption.

(Study Material)

Q.14 A machine costing Rs.10, 000 is expected to run for 10 years. At the end of this period its scrap value is likely to be Rs.900. Repairs during the whole life of the machine are expected to be Rs.18, 000 and the machine is expected to run 4,380 hours per year on the average. Its electricity consumption is 15 units per hour, the rate per unit being 5 paise.

The machine occupies $\frac{1}{4}$ th of the area of the department and has two points out of a total of ten for lighting. The foreman has to devote about $\frac{1}{6}$ th of his time to the machine. The monthly rent of the department is Rs.300 and the lighting charges amount of Rs.80 per month. The foreman is paid a monthly salary of Rs.960.

Find out the machine hour rate, assuming insurance is @ 1%p.a. and the expenses on oil, etc., are Rs.9 per month.

(Practice Manual, Nov 2008)**Q.15 Calculate machine hour rate for recovery of overheads for a machine from the following information:**

Cost of machine is Rs. 25,00,000 and estimated salvage value is Rs. 1,00,000. Estimated working life of the machine is 10 years. Annual working hours are 3,000 in the

factory. The machine is required 400 hours per annum for repairs and maintenance. Setting-up time of the machine is 156 hours per annum to be treated as productive time. Cost of repairs and maintenance for whole working life of the machine is Rs. 3,50,000. Power used 15 units per hour at a cost of Rs. 5 per unit. No power is consumed during maintenance and setting-up time. A chemical required for operating the machine is Rs. 9,880 per annum. Wages of an operator is Rs. 4,000 per month. The operator, devoted one-third of his time to the machine.

Annual insurance charges 2 per cent of cost of machine. Light charges for the department is Rs. 2,500 per month, having 48 points in all, out of which only 8 points are used at this machine. Other indirect expenses are chargeable to the machine are Rs. 6,500 per month.

(Study Material, Practice Manual)(May 2000)

Q.16 A machine shop has 8 identical drilling machines manned by 6 operators. The machine cannot be worked without an operator wholly engaged on it. The original cost of all these machine works out to Rs.8 lakhs. **These particulars are furnished for a 6 months period:**

Normal available hours per month	208
Absenteeism (without pay) hours	18
Leave (with pay) hours	20
Normal idle time unavoidable-hours	10
Average rate of wages per worker for 8 hours a day.	Rs.20
Production bonus estimated	15% on wages
Value of power consumed	Rs.8, 050
Supervision and indirect labour	Rs.3, 300
Lighting and electricity	Rs.1, 200

These particulars are for a year

Repairs and maintenance including consumables	3% of value of machines
Insurance	Rs.40, 000
Deprecation	10% of original cost
Other sundry works expenses	Rs.12, 000
General management expenses allocated	Rs.54, 530.

You are required to work out a comprehensive machine hour rate for the machine shop.

(Practice Manual, Nov. 2005)

Q.17 From the details furnished below you are required to compute a comprehensive machine hour rate:

Original purchase price of the machine (subject to depreciation at 10% per annum on original cost)	Rs.3, 24,000
Normal working hours for the month	
(The machine works to only 75% of capacity)	200 hours
Wages of machine man	Rs.125 per day (of 8 hours)
Wages for a helper (machine attendant)	Rs.75 per day (of 8 hours)
Power cost for the month for the time worked	Rs.15, 000
Supervision charges apportioned for the machine centre for the month	Rs.3, 000
Electricity & lighting for the month	Rs.7, 500
Repairs & maintenance (machine) including Consumable stores per month	Rs.17, 500
Insurance of plant & building (apportioned) for the year	Rs.16, 250
Other general expenses per annum	Rs.27, 500

The worker is paid a **fixed dearness allowance of Rs.1, 575 per month. Production bonus payable to workers in terms of an award is equal to 33.33% of basic wages and dearness allowance.** Add 10% of the basic wage and dearness allowance against leave wages and holidays with pay to arrive at a comprehensive labour-wage for debit to production.

(Practice Manual, Nov 2007)

Q.18 A machine shop cost centre contains three machines of equal capacities. 3 operators are employed on each machine, payable Rs. 20 per hour each. The factory works for forty eight hours in a week which includes 4 hours set up time. The work is jointly done by operators. The operators are paid fully for the forty eight hours. **In additions they are paid a bonus of 10 per cent of productive time.** Costs are reported for this company on the basis of thirteen four-weekly period.

The company for the purpose of computing machine hour rate includes the direct wages of the operator and also recoups the factory overheads allocated to the machines. The following details of factory overheads applicable to the cost centre are available:

- (i) Depreciation 10% per annum on original cost of the machine. Original cost of the each machine is Rs. 52,000.
- (ii) Maintenance and repairs per week per machine is Rs. 60.
- (iii) Consumable stores per week per machine are Rs. 75.

- (iv) Power: 20 units per hour per machine at the rate of 80 paise per unit.
- (v) Apportionment to the cost centre: Rent per annum Rs. 5,400, Heat and Light per annum Rs. 9,720, and foreman's salary per annum Rs. 12,960.

Required:

- (i) Calculate the cost of running one machine for a four week period.
- (ii) Calculate machine hour rate.

(Practice Manual, May 2005)

Q.19 A manufacturing unit has purchased and installed a new machine of Rs.12, 70,000 to its fleet of 7 existing machines. The new machine has an estimated life of 12 years and is expected to realize Rs.70, 000 as scrap at the end of its working life. **Other relevant data are as follows:**

- (i) Budgeted working hours are 2,592 based on 8 hours per day for 324 days. This includes 300 hours for plant maintenance and 92 hours for setting up of plant.
- (ii) Estimated cost of maintenance of the machine is Rs.25, 000p.a.
- (iii) The machine requires a special chemical solution, which is replaced at the end of each week **(6 days in a week)** at a cost of Rs.400 each time.
- (iv) Four operators control operation of 8 machines and the average wages per person amounts to Rs.420 per week plus 15% fringe benefits.
- (v) Electricity used by the machine during the production is 16 units per hour at a cost of Rs.3 per unit. No current is taken during maintenance and setting up.
- (vi) Departmental and general works overheads allocated to the operation during last year was Rs.50, 000. During the current year it is estimated to increase 10% of this amount.

Calculate machine hour rate, if (a) setting up time is unproductive; (b) setting up time is productive.

(Practice Manual)

- Q.20** (i) Overhead expenses: Factory rent Rs. 96,000 (Floor area 80,000 sq.ft.), Heat and gas Rs. 45,000 and supervision Rs. 1,20,000.
- (ii) Wages of the operator are Rs. 48 per day of 8 hours. He attends to one machine when it is under set up and two machines while they are under operation. In respect of machine B (one of the above machines) the following particulars are furnished:

- (i) Cost of machine Rs 45,000, Life of machine- 10 years and scrap value at the end of its life Rs. 5,000
- (ii) Annual expenses on special equipment attached to the machine are estimated as Rs. 3,000
- (iii) Estimated operation time of the machine is 3,600 hours while set up time is 400 hours per annum.
- (iv) The machine occupies 5,000 sq.ft. of floor area.
- (v) Power costs Rs. 2 per hour while machine is in operation.

Find out the comprehensive machine hour rate of machine B . Also find out machine costs to be absorbed in respect of use of machine B on the following two work- orders.

	Work-order 31	Work-order 32
Machine Set up time (Hours)	10	20
Machine operation time (Hours)	90	180

(Practice Manual, May 2002)

Q.21 In a factory, a machine is considered to work for 208 hours in a month. It includes maintenance time of 8 hours and set up time of 20 hours.

The expenses data relating to the machine are as under:

Cost of the machine is Rs.5, 00,000, life 10 years. Estimated scrap value at the end of life is Rs.20, 000.

Repairs and maintenance per annum	Rs.60, 480
Consumable stores per annum	Rs.47, 520
Rent of building per annum (the machine under Reference occupies 1/6 of the area)	Rs.72, 000
Supervisor's salary per month (common to three machine)	Rs.6, 000
Wages of operator per month per machine	Rs.2, 500
General lighting charges per month allocated to the machine	Rs.1, 000
Power 25 units per hour at Rs.2 per unit.	

Power is required for productive purposes only. Set up time, though productive, does not required power. The supervisor and operator are permanent. Repairs and maintenance and consumable stores vary with the running of the machine.

Required: Calculate a two-tier machine hour rate for (a) set up time, (b) running time.

(Practice Manual, Nov 2008)

Q.22 A machinery was purchased from a manufacturer who claimed that his machine could produce 36.5 tonnes in a year consisting of 365 days. Holidays, break-down, etc. were normally allowed in the factory for 65 days. Sales were expected to be 25 tonnes during the year and the plant actually produced 25.2 tonnes during the year. **You are required to state the following figures:**

(i) Rated capacity (ii) Practical capacity (iii) Normal capacity (iv) Actual capacity

(Study Material, Practice Manual, May 1987)

Q.23 Gemini Enterprises undertakes three different jobs A, B and C. All of them require the use of a special machine and also the use of a computer. The computer is hired and the hire charges work out of to Rs.4, 20,000 per annum. The expenses regarding the machine are estimated as follows:

	Rs.
Rent for the quarter	17,500
Depreciation per annum	2, 00,000
Indirect charges per annum	1, 50,000

During the first month of operation details were taken from the job register:

	Job		
	A	B	C
Number of hours the machine was used:			
(a) Without the use of the computer	600	900	-
(b) With the use of the computer	400	600	1,000

You are required to compute the machine hour rate:

- (a) For the firm as a whole for the month when the computer was used and when the computer was not used.
- (b) For the individual jobs A, B and C.

(Study Material, Nov 1989)

Q.24 In a factory, overhead of a particular department are recovered on the basis of Rs.5 per machine hour. The total expenses incurred and the actual machine hours for the department for the month of August were Rs.80,000 and 10,000 hours respectively. Of the amount of Rs.80,000, Rs.15,000 became payable due to an award of the labour court and Rs.5, 000 was in respect of expenses of the previous year booked in the current month (August).

Actual production was 40,000 units, of which 30,000 units were sold. On analyzing the reasons, it was found that 60% of the under-absorbed overhead was due to defective planning and the rest was attributed to normal cost increase. **How would you treat the under-absorbed overhead in the cost accounts?**

(Study Material, Practice Manual)(Nov. 1995)

Q.25 In a manufacturing unit, overhead was recovered at a predetermined rate of Rs.25 per man-day. The total factory overhead incurred and the man-days actually worked were Rs.41,50,000 & 1,50,000 respectively. Out of the 40,000 units produced a period 30,000 units were sold. **There were also 30,000 uncompleted units which may be reckoned at 66.67% complete.**

On analyzing the reasons, it was found that 40% of the unabsorbed overheads were due to defective planning and the rest were attributable to increase in overhead cost.

How would unabsorbed overheads be treated in cost accounts?

(Study Material, Practice Manual)(Nov. 2000)

Q.26 The total overhead expenses of a factory are Rs.4,46,380. Taking into account the normal working of the factory, overhead was recovered in production at Rs.1.25 per hour. The actual hours worked were 2,93,104. How would you proceed to close the books of accounts, assuming that besides 7,800 units produced to which 7,000 were sold, there were 200 equivalent units in work-in-progress.

On investigation, it was found that 50% of the unabsorbed overhead was on account of increase in the cost of indirect materials and indirect labour and the remaining 50% was due to factory inefficiency. Also give the profit implication of the method suggested.

(Practice Manual, May 2008)

Q.27 PQR manufacturers, a small scale enterprise, produces a single product and has adopted a policy to recover the production overheads of the factory by adopting a **single blanket rate** based on machine hours. The budgeted production overheads of the factory are Rs. 10,08,000 and budgeted machine hours are 96,000.

For a period of first six months of the financial year 2007-2008, following information were extracted from the books:

Actual production overheads	Rs. 6,79,000
Amount included in the production overheads:	
Paid as per court's order	Rs. 45,000
Expenses of previous year booked in current year	Rs. 10,000
Paid to workers for strike period under an award	Rs. 42,000
Obsolete stores written off	Rs. 18,000

Production and sales data of the concern for the first six months are as under:

Production:

Finished goods	22,000 units
Works-in-progress (50% complete in every respect)	16,000 units

Sale: Finished goods 18,000 units

The actual machine hours worked during the period were 48,000 hours. It is revealed from the analysis of information that 1/4 of the under-absorption was due to defective production policies and the balance was attributable to increase in costs.

You are required:

- to determine the amount of under absorption of production overheads for the period,
- to show the accounting treatment of under-absorption of production overheads, and
- to apportion the unabsorbed overheads over the items.

(Practice Manual, May 1997)

Q.28 Sweet Dreams Ltd. uses a historical cost system & applies overheads on the basis of pre-determined rates.

The following are the figures from the trial balance as on 31st December:

Manufacturing overheads	Rs.
Amount actually spent	1, 70,000
Amount absorbed	1, 50,000
Work-in-progress	48,000
Finished goods stock	96,000
Cost of goods sold	3, 36,000

Using two methods for disposal of the under absorbed overheads and show the implications on the profit of the company under each method.

(Study Material, Practice Manual, Nov.1994)

Q.29 A factory has three production departments. The policy of the factory is to recover the production overheads of the entire factory by adopting a **single blanket rate based on the percentage of total factory overheads to total factory wages**. The relevant data for a month are given below:

Department	Direct Materials Rs.	Direct Wages Rs.	Factory Overheads Rs.	Direct Labour Hours	Machine hours
Budget					
Machining	6,50,000	80,000	3,60,000	20,000	80,000
Assembly	1,70,000	3,50,000	1,40,000	1,00,000	10,000
Packing	1,00,000	70,000	1,25,000	50,000	-
Actual					
Machining	7,80,000	96,000	3,90,000	24,000	96,000
Assembly	1,36,000	2,70,000	84,000	90,000	11,000
Packing	1,20,000	90,000	1,35,000	60,000	-

The details of one of the representative jobs produced during the month are as under:

Job No. CW 7083

Department	Direct Materials Rs.	Direct Wages Rs.	Direct Labour Hours	Machine Hours
Machining	1,200	240	60	180
Assembly	600	360	120	30
Packing	300	60	40	-

The factory adds 30% on the factory cost to cover administration and selling overheads and profit.

Required:

- Calculate the overhead absorption rate as per the current policy of the company and determine the selling price of the Job No. CW 7083.
- Suggest any suitable alternative method (s) of absorption of the factory overheads and calculate the overhead recovery rates based on the method (s) so recommended by you.
- Determine the selling price of Job CW 7083 based on the overhead application rates calculate in (ii) above
- Calculate the department wise and total under/ over recovery of overheads based on the company's current policy and the method (s) recommended by you.

(Study Material, Practice Manual)(Nov.1999)

Q.30 ABC Ltd. manufactures a single product and absorbs the production overheads at a pre-determined rate of Rs.10 per machine hour. At the end of financial year 1998-99, it has been found that actual production overheads incurred were Rs.6,00,000. It includes Rs.45,000 on account of written off obsolete stores and Rs.30,000 being the wages paid for the strike period under an award.

The production and sales data for the year 1998-99 is as under:

Production:	Finished goods	20,000 units
	Work-in-progress	8,000 units (50% complete in all respects)
Sales:	Finished goods	18,000 units

The actual machine hours worked during the period were 48,000. It has been found that one-third of the under-absorption of production overheads was due to lack of production planning and the rest was attributable to normal increase in costs.

You are required to:

- Calculate the amount of under-absorption** of production overheads during the year 1998-99: and
- Show the accounting treatment of under- absorption** of production overheads.

(Study Material)

Q.31 In an engineering company, the factory overheads are recovered on a fixed percentage basis on direct wages and the administrative overheads are absorbed on a fixed percentage basis on factory cost.

The company has furnished the following data relating to two jobs undertaken by it in a period:

	Job 1	Job 2
	Rs.	Rs.
Direct materials	54,000	37,500
Direct wages	42,000	30,000
Selling price	1, 66,650	1, 28,250
Profit percentage on total cost	10%	20%

Required:

- Computation of **percentage recovery rate** of factory overheads and administrative overheads.
- Calculation of the amount of **factory overheads, administrative overheads and profit** for each of the two jobs.
- Using the above recovery rates **fix the selling price of job No.3.** The additional data being as follows:-

Direct materials	Rs.24, 000
Direct wages	Rs.20, 000
Profit percentage on selling price	12.5%

(Practice Manual, May 1996)

Q. 32 A company is making a study of the relative profitability of the two products – A and B. In addition to direct costs, indirect selling and distribution costs to be allocated between the two products are as under:

	Rs.	
Insurance charges for inventory (finished)	78,000	
Storage costs	1,40,000	
Packing and forwarding charges	7,20,000	
Salesmen salaries	8,50,000	
Invoicing costs	4,50,000	
Other details are:	Product A	Product B
Selling price per unit	(Rs.) 500	1,000
Cost per unit	(Rs.) 300	600
(exclusive of indirect selling and distribution costs)		
Annual sales in units	10,000	8,000
Average inventory	(units) 1,000	800
Number of invoices	2,500	2,000

One unit of product 'A' requires a storage space twice as much as product 'B'. The cost to packing and forwarding one unit is the same for both the products. Salesmen are paid salary plus commission @ 5% on sales and equal amount of efforts are put forth on the sales of each of the product.

Required: (i) Set-up a schedule showing the apportionment of the indirect selling and distribution costs between the two products.

(ii) Prepare a statement showing the relative profitability of the two products.

(Study Material)

Q.33 A company which sells four products, some of them unprofitable proposes discontinuing the sale of one of them. The following information is available regarding income, costs and activity for the year ended 31st March, 2006.

	Products			
	A	B	C	D
Sales (Rs.)	3, 00,000	5, 00,000	2,50,000	4,50,000
Cost of sales (Rs.)	2, 00,000	4, 50,000	2,10,000	2,25,000

Area of storage (sq.ft.)	50,000	40,000	80,000	30,000
Number of parcels sent	1, 00,000	1, 50,000	75,000	1,75,000
Number of invoices sent	80,000	1, 40,000	60,000	1,20,000

Selling and distribution overhead and the basis of allocation are:

	Basis of allocation	Rs. to product
Fixed costs		
Rent & insurance	30,000	Sq.ft.
Deprecation	10,000	Parcel
Salesmen's salaries & expenses	50,000	Sales volume
Administrative wages and salaries	50,000	No. Of invoices

Variable costs:

Packing wages & materials	20 paisa per parcel
Commission	4% of sales
Stationery	10 P. Per invoice

You are required to prepare profit & loss statement, showing the percentage of profit or loss to sales for each product.

(Practice Manual, May 2003)

Q.34 PQR Ltd. has its own power plant which has two users, Cutting department and welding department. When the plans were prepared for the power plant, top management decided that its practical capacity should be 1,50,000 machine hours. Annual budgeted practical capacity fixed costs are Rs.9,00,000 and budgeted variable costs are Rs.4 per machine hour.

The following data are available:

	Cutting department	Welding department	Total
Actual usage in 2002-03(machine hrs)	60,000	40,000	1,00,000
Practical capacity for each Department (machine hours)	90,000	60,000	1,50,000

Required:

- (i) **Allocate the power plant's cost to the cutting and the welding department using a single rate method** in which the budgeted rate is calculated using practical capacity and costs are allocated based on actual usage.
- (ii) **Allocate the power plant's cost to the cutting and the welding department using the dual-rate method** in which the fixed-costs are allocated based on practical capacity and variable costs are allocated based on actual usage.
- (iii) **Allocate the power plant's cost to the cutting and the welding department using the dual-rate method** in which the fixed-costs rate is calculated using practical capacity,

but fixed costs are allocated to the cutting and welding department based on actual usage. Variable costs are allocated based on actual usage.

(Practice Manual, May 2003)

Q.35 An engine manufacturing company has two production departments:

(i) Snow mobile engine and (ii) Boat engine and

Two service department:

(i) Maintenance and (ii) Factory office.

Budgeted cost data and relevant cost drivers are as follows:

Department cost:	Rs.
Show mobile engine	6, 00,000
Boat engine	17, 00,000
Factory office	3, 00,000
Maintenance	2, 40,000

Cost drivers:

Factory office department:	No. of employees
Show mobile engine department	1,080 employees
Boat engine department	270 employees
Maintenance department	<u>150 employees</u>
	<u>1,500 employees</u>

Maintenance department:	No. of work orders
Show mobile engine department	570 orders
Boat engine department	190 orders
Factory office department	<u>40 orders</u>
	<u>800 orders</u>

Required:

(i) Compute the cost driver allocation percentage and then use these percentages to allocate the service department cost by using direct method.

(ii) Compute the cost driver allocation percentage and then use these percentages to allocate the service department cost by using non-reciprocals method/step method.

(Practice Manual, May 2007)

Q.36 A company has three production department (M1, M2 and A1) and three service department, one of which engineering service department, servicing the M1 and M2 only.

The relevant information's are as follows:

	Product X	Product Y
M1	10 machine hour	6 machine hours
M2	4 machine hours	14 machine hours
A1	14 direct labour hours	18 direct labour hours

The annual budgeted overhead cost for the year is

	Indirect wages (Rs.)	consumable supplies (Rs.)
M1	46,520	12,600
M2	41,340	18,200
A1	16,220	4,200
Stores	8,200	2,800
Engineering service	5,340	4,200
General Service	7,520	3,200
Depreciation on machinery	39,600	
Insurance of machinery	7,200	
Insurance of building	3,240	

(Total building insurance cost for M1 is one third of annual premium)

Power	6,480
Light	5,400
Rent	12,675

(The general service department is located in a building owned by the company. It is valued at Rs.6,000 and is charged into cost at notional value of 8% per annum. This cost is additional to the rent shown above)

The value of issues of materials to the production departments are in the same proportion as shown above for the consumable supplies.

The following data are also available:

Department	Book value Machinery (Rs.)	Area (sq.ft.)	Effective H.P. hours%	Production Direct Labour hour	Capacity Machine hour
M1	1,20,000	5,000	50	2,00,000	40,000
M2	90,000	6,000	35	1,50,000	50,000
A1	30,000	8,000	05	3,00,000	
Stores	12,000	2,000	-		
Engg. Service	36,000	2,500	10		

General service	12,000	1,500	-		
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Required:

- (i) Prepare an overhead analysis sheet, showing the bases of apportionment of overhead to departments.
- (ii) Allocate service department to production department ignoring the apportionment of service department costs among service departments.
- (iii) Calculate suitable overhead absorption rate for the production departments.
- (iv) Calculate the overhead to be absorption by two products, X and Y.

COST SHEET

Q.1 From the following particulars prepare a Cost Sheet showing the total cost per tonne for the period ended 31st Dec., 1998:

Raw materials	Rs.33,000	Rent & taxes (office)	Rs.500
Productive wages	35,000	Water supply	1,200
Direct expenses	3,000	Factory insurance	1,100
Unproductive wages	10,500	Office insurance	500
Factory rent and taxes	7,500	Legal expenses	400
Factory lighting	2,200	Rent of warehouse	300
Factory heating	1,500	Depreciation:	
Motive power	4,400	Plant & machinery	2,000
Haulage	3,000	Office building	1,000
Director's fees (works)	1,000	Delivery vans	200
Director's fees (office)	2,000	Bad debts	100
Factory cleaning	500	Advertising	300
Sundry office expenses	200	Sales department salaries	1,500
Estimating	800	Up keeping of delivery vans	700
Factory stationery	750	Bank charges	50
Office stationery	900	Commission on sales	1,500
Loose tools written off	600		

The total output for the period has been 10,000 tonnes.

(Study Material, Nov.1986)

Q.2 The following figure is extracted from the trial balance of Go-getter Co. On 30th September, 2009

Inventories:	Rs.		Rs.
Finished stock	80,000	Indirect labour	18,000
Raw materials	1,40,000	Factory supervision	10,000
Work-in-process	2,00,000	Repairs and upkeep-factory	14,000
Office appliances	17,400	Heat, light & power	65,000
Plant & machinery	4,60,500	Rates & taxes	6,300
Building	2,00,000	Miscellaneous factory	
Sales	7,68,000	expenses	18,700
Sales return & rebates	14,000	Sales commission	33,600
Materials purchased	3,20,000	Sales travelling	11,000

Freight incurred on materials	16,000	Sales promotion	22,500
Purchase returns	4,800	Distribution dept, salaries	
Direct labour	1,60,000	and expenses	18,000
		Office salaries and expenses	8,600
		Interest on Borrowed funds	2,000

Further details are available as follows:

(i) Closing inventories:		(ii) Accrued expenses on:	
Finished Goods	1,15,000	Direct labour	8,000
Raw Materials	1,80,000	Indirect labour	1,200
Work-in process	1,92,000	Interest on borrowed funds	2,000
(iii) Depreciation to be provided on:		(iv) Distribution of the following costs:	
Office appliances	5%	• Heat, light and power to factory, office and selling in the ratio 8:1:1 • Rates and taxes 2/3rd of factory and 1/3rd of office. • Depreciation on building to factory, office and selling in the ratio 8:1:1.	
Plant & Machinery	10%		
Building	4%		

With the help of the above information, you are required to **prepare a condensed profit and loss statement** of Go-getter Co. for the year ended 30th September, 2009 along with supporting schedules:

- (i) Cost of sales.
- (ii) Selling and distribution expenses.
- (iii) Administration expenses.

(Nov.1981)

Q.3 The following data is available from books and records of ABC Ltd. for the month of March, 2010.

Direct labour cost Rs.16, 000 (160% of the factory overhead).

Cost of goods sold Rs.56, 000.

Inventory account shows the following figure.

	March 1	March 31
Raw material	Rs.8,000	Rs,8,600
Work in progress	8,000	12,000
Finished goods	14,000	18,000
Selling expenses		3,400

General and administration expenses	2,600
Sales (for the month)	75,000

You are required to prepare a statement showing the Cost of goods manufactured and sold and the profit earned.

Q.4 LG Ltd furnishes the following information for 10,000 TV valves manufactured during the year 2009:

Material	Rs.90,000	Clerical salaries and management	
Direct wages	60,000	Expenses	33,500
Power and consumable stores	12,000	Selling expenses	5,500
Factory indirect wages	15,000	Sale proceeds of scrap	2,000
Lighting of factory	5,500	Plant repairs, maintenance and depreciation	11,500
Defective work (cost of rectification)	3,000		

The net selling price was Rs31.60 per unit sold and all units were sold. As from 1st January 2010, the selling price was reduced of Rs.31 per unit. It was estimated that production could be increased in 2010 by 50% due to spare capacity. Rates for materials and direct wages will increase by 10%.

You are required to prepare:

(a) Cost sheet for the year 2009 showing various elements of cost per unit; and

(b) Estimated cost and profit statement for 2010.

Assuming that 15,000 units will be produced and sold during the year and factory overheads will be recovered as a percentage of direct wages and office and selling expenses as a percentage of works cost.

Q.5 The managing director of a small manufacturing concern consults you as to the minimum price at which he can sell the output of one of the department of the company which is intended for mass production in future.

The company's records show the following particulars for the dept. for the last year.

Production and Sales	100 units
	Rs.
Materials	13,000
Direct Labour	7,000

Direct Charges(variables)	1,000
Work overheads	7,000
Office overheads	2,800
Selling Overheads	3,200
Profits	5,000
Sales	39,000

You ascertain that 40% of the works overheads fluctuate directly with production and 70% of the selling overheads fluctuate with sales. It is anticipated that the deptt. Would produce 500 units per annum and the direct labour charges per unit will be reduced by 20% while fixed works overheads charges will increase by Rs.3, 000.

Office overheads and fixed selling overheads charges are expected to show an increase 25% but otherwise no changes are anticipated.

(Practice Manual, Nov.2006)

Q.6 A manufacturing company has an installed capacity of 1, 50,000 units per annum. Its cost structure is given below:

	Rs.
(i) Variable cost per unit	
Materials	10
Labour (subject to a minimum of Rs.1, 00,000 per month)	10
Overheads	4
(ii) Fixed overhead per annum	1,92,300
(iii) Semi-variable overheads per annum at 75% capacity (It will increase by Rs.4, 000 per annum for increase of every 5% of the capacity utilization or any part thereof)	
	60,000

The capacity utilization for the next year is budgeted at 75% for first three months, 80% for the next six months and 90% for the remaining three months.

Required: If the company is planning to have a profit of 20% on the selling price, calculate the selling price per units per annum.

(Nov.2004)

Q.7 JMTC Company is a metal and wood cutting manufacturer, selling products to the home construction market. Consider the following data for the month of October, 2004:

	Rs.
Sandpaper	5,000
Material-handling costs	1,75,000
Lubricants and coolants	12,500
Miscellaneous indirect manufacturing labour	1,00,000
Direct manufacturing labour	7,50,000
Direct materials, October 1, 2004	1,00,000
Direct materials, October 31, 2004	1,25,000
Finished goods, October 1, 2004	2,50,000
Finished goods, October 31, 2004	3,75,000
Work-in-process October 1, 2004	25,000
Work-in-process October 31, 2004	35,000
Plant-leasing costs	1,35,000
Depreciation-plant equipment	90,000
Property taxes on plant equipment	10,000
Fire insurance on plant equipment	7,500
Direct materials purchased	11,50,000
Sales revenues	34,00,000
Marketing promotions	1,50,000
Marketing salaries	2,50,000
Distribution costs	2,75,000
Customer-service costs	2,50,000

Required:

- (i) **Prepare an income statement** with a separating schedule of cost of goods manufactured.
- (ii) **For all manufacturing items, indicate by V or F whether each is basically a variable cost for a fixed cost** (where the cost object is a product unit).

(May2006)

Q.8 XYZ Auto Ltd. is in the business of selling cars. It also sells insurance and finance as part of its overall business strategy. The following information is available for the company:

	Physical units	Sales value
Sales of cars	10,000 cars	Rs.30,000 lacs
Sales of insurance	6,000 policies	Rs. 1,500 lacs
Sales of finance	8,000 loans	Rs.19,200 lacs

The revenue earning from each line of business before expenses are as follows:

Sale of car	3% of sales value
Sale of insurance	20% of sales value
Sale of finance	2% of sales value

The expenses of the company are as follows

Salesman salaries	Rs.200 lacs
Rent	Rs.100 lacs
Electricity	Rs.100 lacs
Advertising	Rs.200 lacs
Documentation cost per insurance policy	Rs. 100
Documentation cost for each loan	Rs. 200
Direct sales expenses per car	Rs.5, 000

Indirect costs have to be allocated in the ratio of physical units sold.

Required:

- (i) **Make a cost sheet for each product** allocating the direct and indirect cost and also showing the product wise profit and total profit.
- (ii) Calculate the **percentage of profit to revenue earned from each line of business.**

(Nov.1998)

Q.9 A Ltd. Company has capacity to produce 1, 00,000 units of a product every month. Its works cost at varying levels of production is as under:

Level	Work cost per unit (Rs.)
10%	400
20%	390
30%	380
40%	370
50%	360
60%	350
70%	340
80%	330
90%	320
100%	310

It's fixed administration expenses amount to Rs.1, 50,000 and fixed marketing expenses amount to Rs.2, 50,000 per month respectively. The variable distribution cost amounts, to Rs.30 per unit.

It can market 100% of its output at Rs.500 per unit provided it incurs the following further expenditure:

- (a) It gives gift items costing Rs.30 per unit of sale.
- (b) It has lucky draws every month giving the first prize of Rs.50, 000; 2nd prize of Rs.25,000 3rd prize of Rs.10,000 and three consolation prize of Rs.5,000 each to customers buying the product.
- (c) It spends Rs.1, 00,000 on refreshments service every month to its customers;
- (d) It sponsors a television programme every week at a cost of Rs.2, 00,000 per month.

It can market 30% of its output at Rs.550 per unit without incurring any of the expenses referred to in (a) to (d) above.

Advise the company on its course of action. Show the supporting cost sheets.

(Nov.1987)

Q.10 The Cost structure of an article the selling price of which is Rs. 45,000 is as follows:

Direct Material	50%
Direct Labour	20%
Overheads	30%

An increase of 15% in the cost of materials and of 25% in the cost of labour is anticipated. These increased costs in relation to the present selling price would cause a 25% decrease in the amount of present profit per article. **You are required:**

- i. **To prepare a statement of profit per article at present and**
- ii. **The revised selling price to produce the same percentage of profit to sales as before.**

(Nov.2003)

Q.11 A fire occurred in the factory premises on October 31, 2003. The accounting records have been destroyed. Certain accounting records were kept in another building. They reveal the following for the period September 1, 2003 to October 31, 2003.

Direct material purchased		Rs.2,50,000
Work in process inventory,	1.9.2003	Rs.40,000
Direct materials inventory,	1.9.2003	Rs.20,000
Finished goods inventory,	1.9.2003	Rs.37,750
Indirect manufacturing costs		40% of conversion cost
Sales revenues		Rs. 7,50,000
Direct manufacturing labour		Rs. 2,22,500

Prime costs	Rs. 3,97,500
Gross margin percentage based on revenues	30%
Cost of goods available for sale	Rs. 5,55,775

The loss is fully covered by insurance company. The insurance company wants to know the historical cost of the inventories as a basis for negotiating a settlement, although the settlement is actually to be based on replacement cost, not historical cost. **Required:**

- i. **Finished goods inventory, 31.10.2003**
- ii. **Work in process inventory, 31.10.2003**
- iii. **Direct materials inventory, 31.10.2003**

(ICWA Dec 1996)

Q.12 A company presently sells equipment for Rs.35, 000. Increase in price material and labour cost are anticipated to the extent of 15% and 10% respectively, in the coming year. Material cost represents 40% of cost of sales and labour cost 30% of cost of sales, the remaining relate to overheads. If the existing selling price is retained, despite the increase in labour and material price, the company would face a 20% decrease in the existing amount of profit on the equipment.

You are required to arrive at a selling price so as to give the same percentage of profit on increased cost of sales, as before. **Prepare a statement of profit/loss per unit**, showing the new selling price and cost per unit in support of your answer.

(May 2008)

Q.13 A factory incurred the following expenditure during the year 2007.

	Rs.	
Direct material consumed		12,00,000
Manufacturing wages		7,00,000
Manufacturing overheads:		
Fixed	3,60,000	
Variable	<u>2,50,000</u>	<u>6,10,000</u>
		<u>25,10,000</u>

In the year 2008, following changes are expected in production and cost production.

- i. Production will increase due to recruitment of 60% more workers in the factory.
- ii. Overall efficiency will decline by 10% on account of recruitment of new workers.
- iii. There will be an increase of 20% in fixed overhead and 60% in variable overhead.
- iv. The cost of direct material will be decreased by 6%.
- v. The company desire to earn a profit of 10% on selling price.

Ascertain the cost of production and selling price.

(Practice Manual, Nov 2008)

Q.14 In a manufacturing company factory overheads are charged as fixed percentage basis on direct labour and office overheads are charged on the basis of percentage of factory cost.

The following information are available related to the year ending 31st March, 2008:

	Product A	Product B
Direct materials	Rs. 19,000	Rs. 15,000
Direct labour	Rs. 15,000	Rs. 25,000
Sales	Rs. 60,000	Rs. 80,000
Profit	25% on cost	25% on sales price

You are required to find out:

- i. **The percentage of factory overheads on direct labour.**
- ii. **The percentage of office overheads on factory cost.**

OPERATING COSTING

(Study Material, Practice Manual)(Nov.1998)

Q.1 A transport service company is running five buses between two towns which are 50 kms. apart. Seating capacity of each bus is 50 passengers the following particular were obtained from their books for April, 1998:

Wages of drivers, conductors and cleaners	Rs.24,000
Salaries of office staff	10,000
Diesel oil and other oil	35,000
Repairs and maintenance	8,000
Taxation, insurance, etc.	16,000
Depreciation	26,000
Interest and other expenses	<u>20,000</u>
Total	<u>1,39,000</u>

Actually, passengers carried were 75 per cent of seating capacity. All buses ran on all days of the month. Each bus made one round-trip per day. **Find out the cost per passenger-km.**

(CWA Dec1994)

Q.2 JRM roadways run 10 buses between two suburban centres which are 25 kms. apart. Seating capacity of each bus is 30 passengers. **The expenses for the month of November, 1994 were as under:**

Salaries of drivers and conductors	60,000
Salaries of mechanical staff	6,000
Diesel, Oil & Lubricants	40,000
Taxes, insurance etc.	5,200
Repairs & Maintenance	8,000
Depreciation	32,000
Total	<u>1,51,200</u>

Seating capacity utilized was 60%. All the buses ran 25 days of the month. **Each bus made four round trips daily.**

(a) Find out the **cost per passenger-km.** and the **cost per round trip per passenger.**

(b) What would have been the **cost per round trip per passenger if the seating capacity utilization were to go up to 80%?**

- (c) What would have been the **cost per round trip per passenger, if all the expenses (other than depreciation) were to go up by 20% at a seating capacity utilization of 80%?**

(Practice Manual, May1992)

Q.3 JMTc transport company has been given a route 40 km. long to run a bus. The bus costs the company a sum of Rs.1, 00,000. It has been insured at 3% p.a. and the annual tax will amount to Rs.2, 000. Garage rent is Rs.200 p.m. annual repairs will be Rs.2, 000 and the bus is likely to last for 5 years.

The driver's salary will be Rs.300p.m. and the conductor's salary will be Rs.200 p.m. **In addition to 10% of takings as commission** (to be shared by the driver and the conductor equally).

Cost of stationery will be Rs.100 p.m. Manager-cum-Accountant's salary is Rs. 700 p.m. Petrol and oil will be Rs.50 per 100 km. The bus will make 3 up and down trips carrying on an average, 40 passengers on each trip. **Assuming 15% profit on takings.**

Calculate the bus fare to be charged from each passenger. The bus will run on an average 25 days on a month

(Practice Manual, May1994)

Q.4 Mr. X owns a bus which runs according to the following schedule:

- | | |
|---|------------------------------------|
| (i) Delhi to Chandigarh and back, the same day. | Distance covered: 150 kms. One way |
| Number of days run each month: 8 | Seating capacity occupied 90% |
| (ii) Delhi to Agra and back, the same day | Distance covered: 120 kms. One way |
| Number of days run each month: 10 | Seating capacity occupied 85% |
| (iii) Delhi to Jaipur and back, the same day | Distance covered: 270 kms. One way |
| Number of days run each month: 6 | Seating capacity occupied 100% |

(iv) Following are the other details:

Cost of the bus	Rs.6,00,000
Salary of the driver	Rs.2, 800 p.m.
Salary of the conductor	Rs.2, 200 p.m.
Salary of the part-time accountant	Rs.200 p.m.
Insurance of the bus	Rs.4, 800 p.m.
Diesel consumption 4 kms. Per litre at	Rs.6 per litre

Road tax	Rs.1,500 p.a.
Lubricant oil	Rs.10 per 100 kms.
Permit fee	Rs.315 per p.m.
Repairs and maintenance	Rs.1, 000 p.m.
Depreciation of the bus	20% p.a.
Seating capacity of the bus	50 persons.
Passenger tax is 20% of the total taking.	

Calculate the bus fare to be charged from each passenger to earn a profit of 30% on total takings. The fares are to be indicated per passenger for the journeys:

- (i) Delhi to Chandigarh
- (ii) Delhi to Agra
- (III) Delhi to Jaipur

(Practice Manual, May1981, May2004)

Q.5 DPS is a public school having 25 buses each plying in different directions for the transport of its school students. In view of large number of students availing of the bus service, the **buses work two shifts daily** both in the morning and in the afternoon. The buses are garaged in the school.

The workload of the students has been so arranged that in the morning, the first trips picks up senior students and the second trip plying an hour later picks up junior students. Similarly, in the afternoon, the first trip takes the junior students and an hour later the second trip takes the senior student home.

The distance travelled by each bus, one way is 16 kms. The school works 24 days in a month and remains closed for vacation in May and June the bus fee, however, is payable by the student for all the 12 month in a year.

The details of expenses for the year 2003-2004 are as under:

Driver's salary-payable for all the 12 month	Rs. 5,000 per month per driver
Cleaner's salary payable for all the 12 month <i>(one cleaner has been employed for every five bus)</i>	Rs.3, 000 per month per cleaner
Licence fees, taxes etc.	Rs. 2,300 per bus per annum
Insurance premium	Rs. 15,600 per bus per annum
Repairs and maintenance	Rs. 16, 400 per bus per annum
Purchase price of the bus	Rs. 16, 50,000 each

Life of the bus	16 years
Scrap value	Rs. 1, 50,000
Diesel cost	Rs. 18.50 per litre

Each bus given an average of 10 kms per litre of diesel. The seating capacity of each bus is 60 students. The seating capacity is fully occupied during the whole year.

The school follows differential bus fees based on distance travelled as under:

Students picked up and dropped within the range of distance from the school	Bus fee	Percentage of students availing this facility
4 kms	25% of full	15%
8 Kms	50% of full	30%
16 kms	Full	55%

Ignore interest. Since the bus fees has to be based on average cost.

You are required to:

- (i) Prepare a statement showing the expenses of operating a single bus and the fleet of 25 buses for a year.**
- (ii) Work out average cost per student per month in respect of:**
 - (a) Students coming from a distance of **up to 4 kms** from the school;
 - (b) Students coming from a distance of **up to 8 kms** from the school; and
 - (c) Students coming from a distance of **up to 16 kms** from the school.

(Practice Manual, May 1991)

Q.6 Prakash Automobiles distribute its foods to a regional dealer using a single lorry. The dealers's premises are 40 km away by road. The lorry has a capacity of 10 tonnes and makes the journey **twice a day fully loaded on the outward journeys and empty on return journeys.**

The following information is available for a four weekly period during the year 1999:

Petrol consumption	8.00 km Per litre
Petrol cost	Rs. 13 per litre
Oil	Rs. 100 per week
Driver's wages	Rs. 400 per week
Repairs	Rs. 100 per week
Garage rent	Rs. 150 per week
Cost of lorry (excluding tyres)	Rs. 4,50,000
Life of lorry	80,000 kms.
Insurance	Rs. 6,500 per annum

Cost of tyres	Rs. 6,250
Life of tyres	25,000 kms.
Estimated sale value of lorry at end of its life	Rs. 50,000
Vehicle license cost	Rs. 1,300 per annum
Other overhead cost	Rs. 41,600 per annum
<i>The lorry operates on a five day week</i>	

Required:

(a) A statement to show the **total cost** of operating the vehicle for the **four weekly periods** analyzed into running costs and fixed costs.

(b) Calculate the vehicle cost **per kilometer and tonne kilometer**.

(Practice Manual, Nov.2001)

Q.7 A transport company has a fleet of three trucks of 10 tonnes, capacity each plying in different directions for transport of customer's goods. **The truck run loaded with goods and return empty.** The distance travelled, number of trips made and the load carried per day by each truck are as under:

Truck No.	One way distance Km.	No. Of trips per Day	Load carried per trip/day tonnes
1	16	4	6
2	40	2	9
3	30	3	8

The analysis of maintenance cost and the total distance travelled during the last two years is as under:

Year	Total distance travelled	Maintenance cost (Rs.)
1	1,60,200	46,050
2	1,56,700	45,175

The following are the details of expenses for the year under review:

Diesel	Rs.10 per litre. Each litre gives 4 km. per litre of diesel on an average
Drivers' salary	Rs.2,000 per month
License and taxes	Rs.5,000 per annum per truck
Insurance	Rs.5,000 per annum for all the three vehicles
Purchase price per truck	Rs.3,00,000 life 10 years. Scrap value at the end of life is Rs.10,000

Oil and sundries Rs.25 per 100 km. Run.

General overhead Rs.11, 084 per annum.

The vehicles operate 24 days per month on an average.

Required:

- (i) Prepare an **Annual Cost Statement covering the fleet of three vehicles.**
- (ii) Calculate the **cost pr km. Run.**
- (iii) Determine the **freight rate per tonne km. to yield a profit of 10% on freight.**

(Practice Manual, Nov.2000)

Q.8 A mineral is transported from two mines-‘A’ and ‘B’ and unloaded at plots in a railway station. Mine A is at a distance of 10 kms and B is at a distance of 15 kms from railway plots. A fleet of Lorries of 5 tonne carrying capacity is used for the transport of mineral from the mines. Records reveal that the Lorries average a speed of 30 kms. per hour, when running and regularly take 10 minutes to unload at the railhead. At A loading time averages 30 minutes per load while at time B loading time averages 20 minutes per load.

Drivers’ wages, depreciation, insurance and taxes are found to cost Rs. 9 per hour operated. Fuel, oil tyres, repairs and maintenance cost Rs. 1.20 per km.

Draw up a statement, showing the cost per tonne-kilometre of carrying mineral from each mine.

(Practice Manual, May2005)

Q.9 In order to develop tourism King Fisher airline has been given permit to operate three flights in a week between X and Y cities (both side). The airline operates a single aircraft of 160 seats capacity. The normal occupancy is estimated at 60% throughout the year of 52 weeks. **The one way fare is Rs.7,200. The costs of operation of flights are:**

Fuel cost (variable)	Rs. 96,000 per flight
Food service on board on non-chargeable basis	Rs.125 per passenger
Commission	5% of fare applicable for all booking

Fixed cost:

Aircraft lease	Rs. 3, 50,000 per flight
Landing charges	Rs. 72,000 per flight

Required:**(i) Calculate the net operating income per flight.****(ii)** The airline expects that its occupancy will increase to 108 passengers per flight if the fare is reduced to Rs. 6,720. Advise, **whether this proposal should be implemented or not.****(Practice Manual)**

Q.10 SHANKAR has been promised a contract to run a tourist car on a 20 km long route for the chief executive of a multinational firm. He buys a car costing Rs.1, 50,000. The annual cost of insurance and taxes are Rs.4, 500 and Rs.900 respectively. He has to pay Rs.500 per month for a garage where he keeps the car when it is not in use. The annual repair costs are estimated at Rs.4, 000. The car is estimated to have a life of 10 years, at the end of which the scrap value is likely to be Rs.50, 000.

He hires a driver who is to be paid Rs.300 per month plus 10% of the takings as commission. Other incidental expenses are estimated at Rs.200 per month. Petrol and oil will cost Rs.100 per 100 kms. The car will make **4 round trips each day.**

Assuming that profit of 15% on taking is desired and that the car will be on the road for 25 days on average per month **what should he charge per-round-trip?**

(Practice Manual, Nov 2008)

Q.11 A transport company has 20 vehicles, which capacities are as follows:

No. of Vehicles	Capacity per vehicle
5	9 tonne
6	12 tonne
7	15 tonne
2	20 tonne

The company provides the goods transport service between stations 'A' to station 'B'. Distance between these stations is 200 kilometres. Each vehicle makes one round trip per day on average. Vehicle are loaded with an average of 90% of capacity at the time of departure from station 'A' to station 'B' and at the time of return back loaded with 70% 0 capacity. 10% of vehicle are laid up for repairs every day. The following information are related to the month of October, 2008:

Salary of transport manager	Rs. 30,000
Salary of 30 drivers	Rs. 4,000 each driver
Wages of 25 helpers	Rs. 2,000 each helper
Wages of 20 labourers	Rs. 1,500 each labourer
Consumable stores	Rs. 45,000
Insurance (annual)	Rs. 24,000
Road licence (annual)	Rs. 60,00
Cost of diesel per litre	Rs. 35
Kilometers run per litre each vehicle	5 km.
Lubricant, oil etc.	Rs. 23,500
Cost of replacement of tyres, tubes, other parts etc.	Rs. 1,25,000
Garage rent (annual)	Rs. 90,000
Transport technical service charges	Rs. 10,000
Electricity and gas charges	Rs. 5,000
Depreciation of vehicles	Rs. 2,00,000

There is a workshop attached to transport department which repairs these vehicles and other vehicles also. 40% of transport manager's salary is debited to the workshop. The transport department is charged Rs. 28,000 for the service rendered by the workshop during October, 2008. During the month of October, 2008 operation was 25 days.

You are required:

(i) Calculate per ton-km operating cost.

(ii) find out the freight to be charged per ton-km, if the company earned a profit of 25% on freight.

(Practice Manual, May 1993)

Q.12 A Company is considering three alternative proposals for conveyance facilities for its sales personnel who have to do considerable traveling approximately 20,000 Km every year.

The proposals are as follows:

- (i) Purchase and maintain its own fleet of cars. The average cost of a car is Rs.1, 00,000.
- (ii) Allow the executive to use his own car and reimburse expenses at the rate of 1.60 per kilometer and also bear insurance costs.
- (iii) Hire cars from an agency at Rs. 20,000 per year per car. The company will have to bear costs of petrol, taxes and tyres.

The following further details are available:

1. Petrol Rs 0.60 per km
2. Repairs and maintenance Rs. 0.20 per km
3. Tyre Rs 0.12 per km
4. Insurance Rs.1,200 per car per annum
5. Taxes Rs.800 per car per annum
6. Life of the car: 5 years with annual mileage of Rs. 20,000 kms.
7. Resale value's 20,000 at the end of the fifth year.

Work out the relative cost of three proposals and rank them.**(CA Final)**

Q.13 A local government authority owns and operates a leisure centre with numerous sporting facilities, residential accommodation, a cafeteria and a sport shop. The summer season last for 20 weeks including a peak period of 6 week corresponding to the school holidays. The following budgets have been prepared for the summer season.

Accommodation:

60 single rooms on a daily basis.

35 double rooms let on a daily basis at 160% of the single room rate.

Fixed costs Rs. 29,900

Variable cost Rs 4 per single room per day and Rs 6.40 per double room per day

Sports Centre:

Residential guest each pay Rs 2 per day and casual visitors Rs 3 per day for the use of facilities.

Fixed costs Rs. 15,500

Sports Shop:

Estimated contribution Rs 1.50 per person day.

Fixed costs Rs 12,570

During the season the centre is open 7 days a week and the following activity levels are anticipated.

Single rooms fully booked for the peak period but at only 80% of capacity during the rest of the season .Double rooms fully booked for the whole season.

30 casual visitors' per day average.

You are required to

- 1. Calculate the charges for single and double rooms** assuming that the authority wish to make a RS 10,000 profit on accommodation.
- 2. Calculate the anticipated total profit for the leisure centre** as a whole for the season.
- 3. Advise the authority whether an offer of Rs 2,50,000 from a private leisure company to operate the centre for five years is worthwhile**, assuming that the authority uses a 10% cost of capital and operations continue as outlined above.

Q.14 A lodging home is being run in a small hill station with 50 single rooms. The home offers concessional rates during six off-season months in a year. During this period, half of the full-room rent is charged. The management's profit margin is targeted at 20% of the room rent. The following are the cost estimates and other details for the year ending 31st March, 1996 (assume a month to be of 30 days):

(i) Occupancy during the season is 80%, while in the off season is 40% only:

(ii) Expenses:

Rs.

(i) Staff salary (excluding room attendants)	2,75,000
(ii) Repairs to building	1,30,500
(iii) Laundry & Linen	40,000
(iv) Interior and Tapestry	87,500
(v) Sundry Expenses	95,400

(iii) Annual depreciation is to be provided for buildings at 5% and on furniture and equipment at 15% on straight line basis.

(iv) Room attendants are paid Rs.5 per room-day on the basis of occupancy of the rooms in a month.

(v) Monthly lighting charges are Rs. 120 per room, per month except in four months of winter when it is Rs. 30 per room, per month and this cost is on the basis of full occupancy for a month: and

(vi) Total investments in the home are Rs. 80 lakhs relate to building and balance for furniture and equipments.

You are required to work out the room rent chargeable per day both during the season and the off season month, on the basis of foregoing information.

(Practice Manual, May 2007)

Q.15 A company runs a holiday home. For this purpose, it has hired a building at a rent of Rs.10,000 per month along with 5% of total taking. It has three types of suites for its customers, viz., single room, double room and triple rooms. **Following information is given:**

Type of suite	Number	Occupancy percentage
Single room	100	100 %
Double room	50	80 %
Triple room	30	60 %

The rent of double room suite is to be fixed at 2.5 times of the single room suite and that of triple rooms suite as twice of the double rooms suite. The other expenses for the year 2006 are as follows:

Rs.

Staff salaries	14,25,000
Room attendant's wages	4,50,000
Lighting, heating and power	2,15,000
Repairs and renovation	1,23,500
Laundry charges	80,500
Interior decoration	74,000
Sundries	1,53,00

Provide profit @ 20% on total taking and assume 360 days in a year.

You are required:

Calculate the rent to be charged for each type of suite.

(Practice Manual)

Q.16 A Club runs a library for its members. As part of club policy, an annual subsidy of up to Rs. 5 per member including cost of books may be given from the general funds of the club. The management of the club has provided the following figures for its library department.

Number of Club members	5,000
Number of Library members	1,000
Library fee per member per month	Rs. 100
Fine for late return of books	Re. 1 per book per day
Average No. of books returned late per month	500
Average No. of days each book is returned late	5 days

Number of available old books	50,000 books
Cost of new books	Rs. 300 per book
Number of books purchased per year	1,200 books
Cost of maintenance per old book per year	Rs. 10

Staff details	No.	Per Employee Salary per month (Rs.)
Librarian	1	10,000
Assistant Librarian	3	7,000
Clerk	1	4,000

You are required to calculate:

- (i) the cost of maintaining the library per year excluding the cost of new books;
 - (ii) the cost incurred per member per month on the library excluding cost of new books; and
 - (iii) the net income from the library per year. If the club follows a policy that all new books must be purchased out of library revenue
- (a) What is the maximum number of books that can be purchased per year and
 - (b) How many excess books are being purchased by the library per year?

Also, comment on the subsidy policy of the club.

ABSOLUTE AND COMMERCIAL TONNE KM

(Study Material, Practice Manual, Nov 91, Nov 99, May95, May09)

Q.17 A lorry starts with a load of 20 tonnes of goods from station A. It unloads 8 tonnes at Station B and rest of goods at station C. It reaches back directly to station 'A' after getting reloaded with 16 tonnes of goods at station C. The distance between A to B, B to C and then from C to A are 80 kms. 120 kms., and 160 kms., respectively.

Compute Absolute tonnes-kms. and Commercial tonnes-kms.

(Study Material, Practice Manual)

Q.18 Global Transport Ltd. charges Rs. 90 per ton for its 6 tons truck lorry load from city 'A' to city 'B'. The charges for the return journey are Rs.84 per ton. No concession or reduction in these rates is made for any delivery of goods at intermediate station 'C'. In January 1997 the truck made 12 outward journeys for city 'B' with full load out of which 2 tones were

unloaded twice in the way of city 'C'. The truck carried a load of 8 tons in its return journey for 5 times but once caught by police and Rs.1,200 was paid as fine. For the remaining trips the truck carried full load out of which all the goods on load were unloaded once at city 'C'. The distance from city 'A' to city 'C' and city 'B' are **140 kms and 300 kms respectively**. Annual fixed costs and maintenance charges are Rs. 60,000 and Rs. 12,000 respectively Running charges spent during January, 1997 are Rs. 2,944.

You are required to find out the cost per absolute ton-kilometre and the profit for January, 1997.

JOB & BATCH COSTING

(Practice Manual, Nov.2002)

Q.1 In the current quarter, a company has undertaken two jobs. The data relating to these jobs are as under:

	Job 1102	Job 1108
Selling price	Rs.1,07,325	Rs.1,57,920
Profit as percentage on cost	8%	12%
Direct material	Rs.37,500	Rs.54,000
Direct wages	Rs.30,000	Rs.42,000

It is the policy of the company to **charge factory overheads as percentage on direct wages and selling and administration overheads as percentage on factory cost.**

The company has received a new order for manufacturing of a similar job. The estimate of direct materials and direct wages relating to the new order is Rs.64, 000 and Rs.50, 000.

You are required to compute:

- (i) The rates of factory overheads and selling and administration overheads to be charged.**
- (ii) The selling price of the new order if 20% profit is required on sales.**

(Study Material)

Q.2 Mr. Bansal has a factory. He specializes in the manufacture of small tables of standard size. He can make **15,000 small tables in a year**. The cost per table works out as under for the year and he made and sold 10,000 tables.

	Rs.
Materials	180
Labour	60
Overhead (fixed recovered @50% of material cost)	<u>90</u>
Total cost	<u>330</u>

Prices are fixed by adding a margin of 10% of the total cost arrived at the above.

In the current year, due to fall in the cost of materials, the total cost worked out as under:

	Rs.
Materials	120
Labour	60
Overhead recovered @50% of material cost)	<u>60</u>
Total cost	<u>240</u>

Mr. Bansal maintained his standard margin of 10% on the total cost. Sales were at the same level as in the last year.

You are asked to

- Determine the profit or loss for the current year
- Compute the price which should have been charged in the current year to yield the same profit or loss as last year.

Q.3 RSK Enterprises in job work, has completed all jobs in hand on 30th December showed direct material and direct labour costs of Rs.40,000 and Rs.30,000 respective as having been incurred on job No.447.

The costs incurred by the business on 31st December, 2009, the last day of the accounting year, were as follows:

Direct materials (Job 447)	Rs.2,000	Direct labour (Job 447)	Rs.8,000
Indirect labour	Rs.2,000	Miscellaneous factory overhead	Rs.3,000

It is the practise of business to make the jobs absorb factory overhead on the basis of 120% of direct labour cost.

Calculate the value of work-in-progress of job No.447 on 31st December, 2009.

(Study Material)

Q.4 A shop floor supervisor of a small factory presented the following cost for Job No. 303, to determine the selling price.

	Per unit Rs.
Material	70
Direct wages 18 hours @ Rs. 2.50 (Deptt. X 8 hours; Deptt. Y 6 hours; Deptt. Z 4 hours)	45
Chargeable expenses	<u>5</u>
	120

Add: 33-1/3 % for expenses cost	<u>40</u>
	<u>160</u>

**Analysis of the Profit/Loss Account
(for the year 2005)**

	Rs.		Rs.
Materials used	1,50,000	Sales less returns	2,50,000
Direct wages:			
Deptt. X	10,000		
Deptt. Y	12,000		
Deptt. Z	<u>8,000</u>		
	30,000		
Special stores items	4,000		
Overheads:			
Deptt. X	5,000		
Deptt. Y	9,000		
Deptt. Z	<u>2,000</u>		
	<u>16,000</u>		
Works cost	2,00,000		
Gross profit c/d	<u>50,000</u>		
	<u>2,50,000</u>		<u>2,50,000</u>
Selling expenses	20,000	Gross profit b/d	50,000
Net profit	<u>30,000</u>		
	<u>50,000</u>		<u>50,000</u>

It is also noted that average hourly rates for the three Departments X, Y and Z are similar.

You are required to:

Draw up a job cost sheet and Calculate the entire revised cost using 2005 actual figures as basis. Add 20% to total cost to determine selling price.

(Practice Manual, Nov.1985)

Q.5 In a factory following the job costing Method, an abstract from the work-in-process as at 30th September was prepared as under:

Job No.	Materials (Rs.)	Hours	Direct labour Rs.	Fac. Over applied Rs.
115	1,325	400 hours	800	640
118	810	250 hours	500	400
120	<u>765</u>	300 hours	<u>475</u>	<u>380</u>
	2900		1,775	1,420

Materials used in October were as follows:

Material Requisition	Job	Cost
No.	No.	Rs.
54	118	300
55	118	425
56	118	515
57	120	665
58	121	910
59	124	<u>720</u>
		<u>3,535</u>

A summary of labour hours deployed during October is as under:

Job No.	Number of hours	
	Shop A.	Shop B
115	25	25
118	90	30
120	75	10
121	65	---
124	<u>20</u>	<u>10</u>
	275	75
Indirect Labour		
Waiting for material	20	10
Machine breakdown	10	5
Idle time	5	6
Overtime premium	<u>6</u>	<u>5</u>
	<u>316</u>	<u>101</u>

A shop credit slip was issued in October, that material issued under requisition No.54 was returned back to stores as being not suitable. A material transfer note issued in October indicated that material issued under requisition No.55 for job 118 was directed to job 124.

The hourly rate in shop A per labour is Rs.3 per hour while at shop B, it is Rs.2 per hour. The factory overhead is applied at the same rate as in September. Job 115, 118 and 120 were completed in October.

You are asked to compute the factory cost of the completed jobs. It is the practice of the management to put a 10% on the factory cost to cover administration and selling overheads

and invoice the job to the customer on a total cost plus 20% basis what would be the invoice price of these 3 job?

(Nov.1989)

Q.6 A factory used job costing. The following cost data is obtained from its books for the year ended 31st December 1994:

	Rs.
Direct materials	9,00,000
Direct wages	7,50,000
Profit	6,09,000
Selling & distribution overheads	5,25,000
Administrative overheads	4,20,000
Factory overheads	4,50,000

(a) Prepare a job sheet indicating the prime cost, work cost, production cost, cost of sale & the sales value.

(b) In 1995, the factory receives an order for a number of jobs. It is estimated that direct materials required will be Rs.1, 20,000 and direct labour will cost Rs.75, 000. What should be the price for these jobs if the factory intends to earn the same rate of profit on sales assuming that the selling and distribution overheads have gone by up by 15%? The factory recovers factory overheads as a percentage of direct wages and administration & selling and distribution overheads as a percentage of works cost, based on cost rates prevailing in the previous year.

(Study Material, May 1997)

Q.7 A jobbing factory has undertaken to supply 200 pieces of a component per month for the ensuing six months. Every month a batch order is opened against which materials and labour hours are booked at actual. Overheads are levied at a rate per labour hour. The selling price contracted for is Rs. 8 per piece. From the following data present the cost and profit per piece of each batch order and overall position of the order for 1,200 pieces.

Month	Batch output	Material cost	Direct wages	Direct labour
		Rs.	Rs.	hours
January	210	650	120	240
February	200	640	140	280

March	220	680	150	280
April	180	630	140	270
May	200	700	150	300
June	220	720	160	320

The other details are:

Month	Chargeable expenses	Direct labour
	Rs.	Hour
January	12,000	4,800
February	10,560	4,400
March	12,000	5,000
April	10,580	4,600
May	13,000	5,000
June	12,000	4,800

Q.8 Component SW-10X is made entirely in machine shop No.AS W-II. Materials cost Rs.20 per component. Each component takes. 6 minutes to produce & the machine operators is paid Rs.15 per hour. Machine hour rate is Rs.72 per hour.

The setting up of the machine to produce the component takes 3 hours for the operator.

You are required to prepare Cost Sheets showing the setting up cost & production cost both in total (i.e. for the batch) & per component, assuming a batch size of:

(a) 100 components

(b) 150 components

(c) 200 components

(CWA Dec99)

Q.9 ABC Ltd. manufactures product XL 101 in batches of 100 units by a series of operation in the fabrication and assembly departments of a factory. The following details relate to 42 batches manufactured by the firm during June 1999:

Fabrication Department

Materials: Issues 2,420 kg of an alloy costing Rs.25 per kg.; 200 kg were returned at the end of the month. Off-cuts and scrap fetched Rs.500.

Labour: Normal rate of wages is Rs.15 per hour. Time office recorded 2,460 hours for June 1999. This included 240 hours overtime work paid at double the normal rate.

Assembly Department

Materials: Cost of components used Rs.57, 900.

Labour: Workers are paid at a piece work rate of Rs.4 per unit for production up to 3,000 units. For excess production over 3,000 units up to 4,000 units, the rate is 25% more and for excess production over 4,000 units, the rate is 50% more. During June 1999, there was stoppage of production for 10 hours due to machine breakdown and for this stoppage ten workers in the department were paid wages at time rate of Rs.15 per hour.

Calculate the average prime cost per unit of XL 101 manufactured during June 1999.

(Study Material)

Q.10 Monthly demand for a product	500 units
Setting-up cost per batch	Rs. 60
Cost of manufacturing per unit	Rs. 20
Rate of interest	10% p.a.

Determine economic batch quantity.

CONTRACT COSTING

Q.1 A firm of building contractors begins to trade on 1st April, 2009. The following was the expenditure on the contract for Rs.4, 00,000:

	Rs.		Rs.
Materials issued to contract	50,000	Plant used for contract	20,000
Wages	71,000	Other expenses	10,000

Cash received on account to 31st March, 2010, amounted to Rs.1, 44,000. The work certified was of Rs.1, 80,000. Of the plant and materials charged to the contract, plant which cost Rs.4,000 and materials which cost Rs.3,000 were lost. On 31st March, 2010 plant which cost Rs.3,000 was returned to stores. The cost work done but uncertified was Rs.1,500 and materials costing Rs.2,500 were in hand on site. Charge 15% depreciation on plant, and take to the profit and loss account 2/3 of the profit received.

Prepare a Contract account, Contractee's account.

(Practice Manual, May2008)

Q.2 Modern construction Ltd. obtained a contract No. B-37 for Rs. 40 lacs. The following balance and information relate to the contract for the year ended 31st March, 2008:

	1-04-2007	31-03-2008
Work-in-progress:		
Work certified	9,40,000	30,00,000
Work uncertified	11,200	32,000
Materials at site	8,000	20,000
Accrued wages	5,000	3,000
Additional information relating to the year 2007-2008 are:		Rs.
Material issued from store		4,00,000
Material directly purchased		1,50,000
Wages paid		6,00,000
Architect's fees		51,000
Plant hire charges		50,000
Indirect expenses		10,000
Share of general overheads for B-37		18,000
Materials returned to store		25,000
Materials returned to supplier		15,000

Fines and penalties paid	12,000
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The contractee pays 80% of work certified in cash.

You are required to prepare:

- (i) Contract account showing clearly the amount of profits transferred to profit & loss A/c.
- (ii) Contractee's Account.
- (iii) Extract of balance sheet.

(Study Material)

Q.3 The following expenses were incurred on a contract:

	Rs.
Material purchased	6, 00,000
Material drawn from stores	1, 00,000
Wages	2, 25,000
Plant issued	75,000
Chargeable expenses	75,000
Apportioned indirect expenses	25,000

The contract was for Rs. 20, 00,000 and it commenced on January 1, 2008. The value of the work completed and certified up to 30th November, 2008 was Rs. 13,00,000 of which Rs. 10, 40,000 was received in cash, the balance being held back as retention money by the contractee. The value of work completed subsequent to the architect's certificate but before 31st December, 2008 was Rs. 60,000. There were also lying on the site materials of the value of Rs. 40,000. It was estimated that the value of plant as at 31st December, 2008 was Rs. 30,000.

(Study Material, Practice Manual)

Q.4 A contractor prepares his accounts for the year ending 31st December each year. He commenced a contract on 1st April, 2005.

The following information relates to the contract as on 31st December, 2005:

	Rs.
Material issued	2, 51,000
Labour charges	5, 65,600
Salary to Foreman	81,300
✓ A machine costing Rs. 2, 60,000 has been on the site for 146 days , its working life is estimated at 7 years and its final scrap value at Rs. 15,000.	

- ✓ A supervisor, who is paid Rs. 8,000 p.m., has devoted **one-half** of his time to this contract.
- ✓ All other expenses and administration charges amount to Rs. 1, 36,500.
- ✓ Material in hand at site costs Rs. 35,400 on 31st December, 2005.

The contract price is Rs. 20, 00,000. On 31st December, 2005 **2/3rd of the contract was completed. The architect issued certificates covering 50% of the contract price**, and the contractor had been paid Rs. 7, 50,000 on account.

Prepare Contract A/c and show how much profit or loss should be included in financial accounts to 31st December, 2005.

Q.5 The following details are available relating to a contract nearing completion on 31st march, 1996:

	Rs.
Contract price	1,20,00,000
Value of work certified	1,10,00,000
Cash received	99,00,000
Work-in-progress (work certified) 1 st April, 1995	67,00,000
Work-in-progress (profit in reserve) 1 st April, 1995	11,50,000

Cost incurred during the year:

Materials	10,50,000
Labour	9,75,000
Other expenses	7,75,000

Plant and equipment:

Net book value 1 st April, 1995	7,00,000
Net book value 31 st April, 1996	1,75,000
Purchases during the year	1,25,000

Cost of work not yet certified 8,00,000

It is estimated that additional costs of Rs.4, 00,000 will be incurred to complete the contract including contingencies. It is further considered that plant and equipment on site will be worthless by the time the contract is completed. The directors of the company propose to incorporate into the company's profit and loss account for the year ended 31st March, 1996 Rs.24, 00,000.

You are required to prepare a contract account and indicate whether you agree with the directors' proposal. Working notes should form part of your answer.

(Practice Manual, Nov.2002)

Q.6 A Construction company undertook a contract at an estimated of Rs.108 lacs, which includes a budget profit of Rs.18 lacs. The relevant data for the year ended 31.3.2002 are as under:

	(Rs. in thousands)
Materials issued to site	5,000
Direct wages paid	3,800
Plant hired	700
Site office costs	270
Materials returned from site	100
Direct expenses	500
Work certified	10,000
Progress payments received	7,200

A special plant was purchased specifically for this contract at Rs.8, 00,000 and after use on this contract till the end of 31.03.2002 it was valued at Rs.5, 00,000. The cost of material at site at the end of the year was estimated at Rs.18, 00,000. Direct wages accrued as on 31.3.2002 was Rs.1, 10,000.

Required:

Prepare the Contract account for the year ended 31st March, 2002 and compute the profit to be taken to the profit and loss account.

(Practice Manual, May2001)

Q.7 Paramount engineers are engaged in construction and erection of a bridge under a long term contract. The cost incurred up to 31.3.2001 was as under:

Fabrication	Rs. in lakhs
Direct materials	280
Direct labour	100
Overheads	<u>60</u>
	440
Erection costs to date	<u>110</u>
	550

The contract price is Rs.11 crores and the cash received on account till 31.3.2001 was Rs.6 crores. A technical estimated of the contract indicate the following degree of completion of work:

Fabrication—Direct material-70%, direct labour and overheads-60%, erection-40%

You are required to **estimate the profit that could be taken to profit and loss account** against this partly completed contract as at 31.3.2001.

(Study Material, Practice Manual, May1998)

Q.8 Compute a conservative estimate of profit on a contract (which has been 90% complete) from the following particulars. Calculate the proportion of profit to be taken to Profit & Loss Account under various methods and give your recommendation.

	Rs.
Total expenditure to date	4, 50,000
Estimated further expenditure to complete the contract (Including contingencies)	25,000
Contract price	6, 12,000
Work certified	5, 50,800
Work uncertified	34,000
Cash received	4, 40,640

(Study Material, Practice Manual, Nov1999)

Q.9 A contractor commenced a building contract on October 1, 2004. The contract price is Rs. 4,40,000. The following data pertaining to the contract for the year 2005-2006 has been compiled from his books and is as under:

		Rs.
April 1, 2005	Work-in-progress not certified	55,000
	Materials at site	2,000
2005-06	<u>Expenses incurred</u>	
	Materials issued	1, 12,000
	Wages paid	1, 08,000
	Hire of plant	20,000
	Other expenses	34,000
March 31, 2006	Materials at site	4,000
	Work-in-progress: Not certified	8,000
	Work-in-progress: Certified	4,05,000

The cash received represents 80% of work certified. It has been estimated that further costs to complete the contract will be Rs. 23,000 including the materials at site as on March 31, 2006.

Required:

Determine the profit on the contract for the year 2005-06 on prudent basis, which has to be credited to P/L A/c.

(Study Material, Practice Manual)

Q.10 A construction company under-taking a number of contracts, furnished the following data relating to its uncompleted contracts as on 31st March, 2006: **(Rs. in lacs)**

	Contract Numbers			
	723	726	729	731
Total contract price	23.20	14.40	10.08	28.80
Estimated costs on completion of contract	20.50	11.52	12.60	21.60
<u>Expenses for the year ended 31.3.06:</u>				
Direct material	5.22	1.80	1.98	0.80
Direct wages	2.32	4.32	3.90	2.16
Overheads (Excluding depreciation)	1.06	2.60	2.62	1.05
Profit reserve as on 1.04.05	1.50	---	---	---
Plant issued at cost	5.00	3.50	2.75	3.00
Materials at site on 1.04.05	0.75	---	---	---
Materials at site on 31.03.06	0.45	0.20	0.08	0.05
Work certified till 31.03.05	4.65	----	---	---
Work certified during the year 2005-06	12.76	13.26	7.56	4.32
Work uncertified as on 31.03.06	0.84	0.24	0.14	0.18
Progress payments received during the year	9.75	9.0	5.75	3.60

Depreciation @ 20% per annum is to be charged on plant issued. While the Contract No.723 was carried over from last year, the remaining contracts were started in the 1st week of April, 2005.

Required:

- (i) Determine the profit/loss in respect of each contract for the year ended 31st March, 2006.**
- (ii) State the profit/loss to be carried to Profit & Loss A/c for the year ended 31st March, 2006.**

(Study Material, Practice Manual, May2000, Nov2004)

Q.11 MNP Construction Ltd. commenced a contract on April 1, 2004. The total contract was for Rs. 17, 50,000. It was decided to estimate the total profit and to take to the credit of P/L A/c the proportion of estimated profit on cash basis which work completed bore to the total contract. Actual expenditure in 2004-05 and estimated expenditure in 2005-2006 are given below:

	2004-2005 (Actual) Rs.	2005-2006 (Estimated) Rs.
Materials issued	3,00,000	5,50,000
Labour: Paid	2,00,000	2,50,000
: Outstanding at end	20,000	30,000
Plant purchased	1,50,000	—
Expenses: Paid	75,000	1,50,000
: Prepaid at end	15,000	—
Plant returns to store (historical cost)	50,000	1,00,000
		(on Dec. 31, 2005)
Material at site	20,000	50,000
Work certified	8,00,000	Full
Work uncertified	25,000	—
Cash received	6,00,000	Full

The plant is subject to annual depreciation @ 25% of WDV Cost. The contract is likely to be completed on Dec. 31, 2005. **Prepare the Contract A/c. Determine the profit on the contract** for the year 2004-2005 on prudent basis, which has to be credited to P/L A/c.

(Practice Manual, May2006, Nov2010)

Q.12 RST construction Ltd. commenced a contract on April 1, 2005. The total contract was for Rs.49, 21,875. It was decided to estimate the total profit on the contract and to take to the credit of P/L A/c that proportion of estimated profit on cash basis, which work completed bore to total contract. Actual expenditure for the period April 1, 2005 to March 31, 2006 and estimated expenditure for April 1, 2006 to September 30, 2006 are given below:

	April 1.2005 to March 31.2006 (Actual)	April 1.2006 to September 30.2006 (Estimated)
Materials issued	7,76,250	12,99,375

Labour : paid	5,17,500	6,18,750
: Prepaid	37,500	-----
: Outstanding	12,500	5,750
Plant & purchased	4,00,000	-----
Expenses: paid	2,25,000	3,75,000
: Outstanding	25,000	10,000
: Prepaid	15,000	-----
Plant returns to store (historical cost)	1,00,000	3,00,000
	(on September 30 th , 2005)	(on September 30 th , 2006)
Work certified	22,50,000	Full
Work uncertified	25,000	-----
Cash received	18,75,000	-----
Material at site	82,500	42,500

The plant is subject to annual depreciation @ 25% on written down value method. The contract is likely to be completed on September 30, 2006.

Required:

Prepare the contract A/c and determine the profit on the contract for the year 2005-2006 on prudent basis, which has to be credited to P/L A/c.

(Practice Manual, May2007)

Q.13 AKP Builders Ltd. commenced a contract on April 1, 2005. The total contract was for Rs.5,00,000. Actual expenditure for the period April 1, 2005 to March 31, 2006 and estimated expenditure for April 1, 2006 to December 31, 2006 is given below:

	2005-06 (Actual) Rs.	2006-07 (9 months) (Estimated) Rs.
Material issued	90,000	85,750
Labour: Paid	75,000	87,325
Outstanding at the end	6,250	8,300
Plant	25,000	---
Sundry Expenses: Paid	7,250	6,875
Prepaid at the end	625	---
Establishment charges	14,625	---

A part of the material was unsuitable and was sold for Rs.18,125 (cost being Rs.15,000) and a part of plant was scrapped and disposed off for Rs.2,875. The value of plant at site on 31 March, 2006 was Rs.7,750 and the value of material at site was Rs.4,250. Cash received on account to date was Rs.1,75,000, representing 80% of the work certified. The cost of work uncertified was valued at Rs.27,375. The contractor estimated further expenditure that would be incurred in completion of the contract.

- The contract would be completed by 31st December, 2006.
- A further sum of Rs.31,250 would have to be spent on the plant and the residual value of the plant on the completion of the contract would be Rs.3,750.
- Establishment charges would cost the same amount per month as in the previous year.
- Rs.10,800 would be sufficient to provide for contingencies.

Required: Prepare Contract account and Calculate Estimated total profit on this contract.
Profit transferrable to profit and loss account is to be calculated by reducing estimated profit in proportion of work certified and contract price.

(Practice Manual)

Q.14 Deluxe Ltd. undertook a contract for Rs.5,00,000 on 1st April, 2009. On 31st March, 2010 when the accounts were closed, the following details about the contract were gathered:

	Rs.
Materials purchased	1,00,000
Wages paid	45,000
General expenses	10,000
Plant purchased	50,000
Materials in hand 31.3.2009	25,000
Wages accrued 31.3.2009	5,000
Work certified	2,00,000
Cash received	1,50,000
Work uncertified	15,000
Depreciation of plant	5,000

The contract contained an escalation clause which read as follows:

“In the event of increase (s) of **price of materials and rates of wages by more than 5%**, the **contract price** would be **increased** accordingly **by 25% of the rise of the cost of materials and wages beyond 5% in each case.**”

It was found that since the date of signing the agreement, the prices of materials and wage rates increased by 25%. The value of the work certified does not take into account the effect of the above clause. **Prepare the contract A/c.**

(Study Material)

Q.15 M/s Bansal Construction Company Ltd. took a contract for Rs. 60, 00,000 expected to be completed in three years. The following particulars relating to the contract are available:

	2004	2005	2006
Materials	6,75,000	10,50,000	9,00,000
Wages	6,20,000	9,00,000	7,50,000
Cartage	30,000	90,000	75,000
Other Expenses	30,000	75,000	24,000
Cumulative work certified	13,50,000	45,00,000	60,00,000
Cumulative Work uncertified	15,000	75,000	----

Plant costing Rs. 3, 00,000 was bought at the commencement of the contract. Depreciation was to be charged at 25% per annum, on the written down value method. The contractee pays 75% of the value of work certified as and when certified, and makes the final payment on completion of the contract.

You are required to make **a contract account and contractee account** as they would appear in each of the three years. **Also show how the work-in-progress and other items should appear in the balance sheet.**

Q.16 The following Trial Balance was extracted on 31st Dec.2009 from the books of Swastik Co. Ltd. Contractors:

	Rs.	Rs.
Share Capital (Share of Rs.10 each)		3,51,800
Profit & Loss Account		25,000
Provision for depreciation of machinery		63,000
Cash received on account: Contract 7		12,80,000
Creditors		81,200
Land & Building(Cost)	74,000	
Machinery(Cost)	52,000	
Bank	45,000	
Contract 7:		
Material	6,00,000	
Direct Labour	8,30,000	
Expenses	40,000	
Machinery on site(Cost)	1,60,000	
	18,01,000	18,01,000

Contract 7 was begun on 1st Jan.2009. The contract price is Rs. 24, 00,000 and the contractee has so far paid Rs. 12, 80,000 being 80% of the work certified. The cost of the work done since certification is estimated at Rs.16, 000. On 31st Dec.2009, after the above Trial balance was extracted, machinery costing Rs. 42,000 was returned to stores and material then on site was valued at Rs.27, 000. Provision is to be made for direct labour accrued Rs.6, 000 and for depreciation of all machinery at 12.5% on cost.

You are required to prepare:

1. Contract Account

2. A Statement of Profit (if any) to be properly credited to Profit & Loss account

3. Balance Sheets as on 31st Dec, 2009.

(Practice Manual, Nov.1994)

Q.17 A company undertook a contract for construction of a large building complex. The construction work commenced on 1st April, 1993 and the following data are available for the year ended 31st March, 1994.

	Rs.000
Contract price	35,000
Work certified	20,000
Progress payment received	15,000
Materials issued to site	7,500

Planning & estimating costs	1,000
Direct wages paid	4,000
Materials returned from site	250
Plant hire charges	1,750
Wages related costs	500
Site office costs	678
Head office expenses apportioned	375
Direct expenses incurred	902
Work not certified	149

The contractors own a plant which originally cost Rs. 20 lacs has been continuously in use in this contract throughout the year. The residual value of the plant after 5 years is expected to be Rs. 5 lacs. Straight line method of depreciation is in use.

As on 31st March, 1994 the direct wages due and payable amounted to Rs. 2,70,000 and the materials at site were estimated at Rs. 2,00,000.

Required:

- (i) Prepare the contract account for the year ended 31st March, 1994.
- (ii) Show the calculation of profit to be taken to the profit and loss account of the year.
- (iii) Show the relevant balance sheet entries.

(Practice Manual, Nov1995)

Q.18 One of the building contract currently engaged in by a construction company commenced 15 months ago remain unfinished. The following information relating to the work on the contract has been prepared for the year just ended:

	Rs.000
Contract price	2,500
Value of work certified at the end of year	2,250
Cost of work not yet certified at the end of year	40
Costs incurred:	
Opening balance:	
Cost of work completed	300
Materials on site (physical stock)	10
During the year:	
Materials delivered to site	610
Wages	580

Hire of plant	110
Other expenses	90
Closing balance:	
Materials on site (physical stock)	20

As soon as materials are delivered to the site, they are charged to the contract account. A record is also kept of materials as they are actually used on the contract. Periodically a stock check is made and any discrepancy between book stock and physical stock is transferred to a general contract material discrepancy account. This is absorbed back to each contract, currently at rate of 0.5% of materials booked. The stock check at the year end revealed a stock shortage of Rs. 5,000.

In addition to the direct charges listed above, general overheads are charged to contracts at 5% of the value of work certified. General overheads of Rs. 15,000 had been absorbed into the cost of work completed at the beginning of the year.

It has been estimated that further costs to complete the contract will be Rs. 2,20,000. This estimated includes the cost of materials on site at the end of the year just finished and also a provision for rectification.

Required: Determine the profitability of the above contract and recommend how much profit (to the nearest Rs. 000) should be taken for the year just ended. (provide a detailed schedule of costs.)

(Practice Manual, Nov2008)

Q.19 A contract expected to be completed in year4, exhibits the following information:

End of year	value of work certified (Rs.)	Cost of work to date (Rs.)	Cost of work not yet certified (Rs.)	Cash received (Rs.)
1	0	50,000	50,000	0
2	3,00,000	2,30,000	10,000	2,75,000
3.	8,00,000	6,60,000	20,000	7,50,000

The contract price is Rs.10, 00,000 and the estimated profit is 20%.

You are required to calculate, how much profit should have been certified to the profit and loss A/c by the end of the year 1, 2 and 3.

(May 1983)

Q.20 The following particulars are obtained from the books of Vinayak Construction Co. Ltd. as on March 31st, 2005.

Plant & equipment at cost Rs.4, 90,000 Vehicles at Cost Rs.2, 00,000

Details of contract which remain uncompleted as on 31.03.2005:

Contract Nos.	1	2	3
	(Rs. in lacs)		
Estimated final sales value	8.00	5.60	16.00
Estimated final cost	6.40	7.00	12.00
Wages	2.40	2.00	1.20
Materials	1.00	1.10	0.44
Overheads (excluding depreciation)	<u>1.44</u>	<u>1.46</u>	<u>0.58</u>
Total cost to date	<u>4.84</u>	<u>4.56</u>	<u>2.22</u>
Value Certified	7.20	4.20	2.40
Payment received	5.00	3.20	2.00

Depreciation on Plant & Equipment and Vehicles should be charged@ 20% of 3 contracts in proportion, to work certified.

You are required to prepare Contract wise and total:

1. Profit/loss to be taken to P&L A/c for the year ended 31st March, 2005.

2. WIP as would appear in the Balance Sheet as on 31st March, 2005.

(May 2010)

Q.21 SB Constructions Limited has entered into a big contract at an agreed price of Rs.1, 50, 00,000 subject to an escalation clause for material and labour as spent out on the contract and corresponding actual are as follows :

	Standard		Actual	
Materials	Quantity(tonne)	Rate/tonne	Quantity(tonne)	Rate/tonne
A	3,000	1,000	3,400	1,100
B	2,400	800	2,300	700
C	500	4,000	600	3,900
D	100	30,000	90	31,500
Labour	Hours	Hourly Rate(Rs.)	Hours	Hourly Rate(Rs.)
L1	60,000	15	56,000	18
L2	40,000	30	38,000	35

You are required to:

1. Give your analysis of admissible escalation claim and determine the final contract price payable.
2. Prepare the contract account, if the all expenses other than material and labour related to the contract are Rs.13, 45,000.
3. Calculate the following variances and verify them:
 - (a) Material cost variance
 - (b) Material price variance
 - (c) Material usage variance
 - (d) Labour cost variance
 - (e) Labour rate variance
 - (f) Labour efficiency variance.

PROCESS COSTING

(Study Material)

Q.1 From the following data, prepare process accounts indicating the cost of each process and the total cost. The total units that pass through each process were 240 for the period.

	Process A	Process B	Process C
	Rs.	Rs.	Rs.
Materials	1,500	500	200
Labour	800	2,000	600
Other expenses	260	720	250

Indirect expenses amounting to Rs. 850 may be apportioned on the basis of wages.
There was no opening or closing stock.

(Study Material)

Q.2 A product passes through three processes. The output of each process is treated as the raw material of the next process to which it is transferred and output of the third process is transferred to finished stock.

	1 st Process	2 nd Process	3 rd Process
	Rs.	Rs.	Rs.
Material issued	40,000	20,000	10,000
Labour	6,000	4,000	1,000
Manufacturing overhead	10,000	10,000	15,000

10,000 units have been issued to the 1st process and after processing, the output of each process is as under:

	Output	Normal Loss
Process No. 1	9,750 units	2%
Process No. 2	9,400 units	5%
Process No. 3	8,000 units	10%

No stock of materials or of work-in-progress was left at the end. Calculate the cost of the finished articles.

(Study Material)

Q.3 A product passes through three processes A, B and C. The normal wastage of each process is as follows:

Process A	3%
Process B	5%

Process C 8%

Wastage of process A was sold 25 paise per unit, that of process B at 50 paise per unit and that of process C at Rs.1 per unit. 10,000 units were issued to process A in the beginning of October 1998 at a cost of Rs.1 per unit the other expenses were as follows:

	Process A	Process B	Process C
	Rs.	Rs.	Rs.
Materials	1,000	1,500	500
Labour	5,000	8,000	6,500
Direct expenses	1,050	1,188	2,009

Actual output was:

Process A	9,500 units
Process B	9,100 units
Process C	8,100 units

Prepare the process account assuming that there were no openings or closing stocks. Also give the abnormal wastage and abnormal effective accounts.

(Practice Manual, Nov.2007)

Q.4 RST Limited processes product Z through two distinct processes – Process I and Process II. On completion, it is transferred to finished stock. From the following information for the year 2006-07, prepare Process I, Process II and Finished Stock A/c:

Particulars	Process I	Process II
Raw materials used	7,500 units	
Raw materials cost per unit	Rs. 60	
Transfer to next process/finished stock	7,050 units	6,525 units
Normal loss (on inputs)	5%	10%
Direct wages	Rs. 1,35,750	Rs. 1,29,250
Direct expenses	60% of direct wages	65% of direct wages
Manufacturing overheads	20% of direct wages	15% of direct wages
Realisable value of scrap per unit	Rs. 12.50	Rs. 37.50

6,000 units of finished goods were sold at a profit of 15% on cost. Assume that there was no opening or closing stock of work-in-progress.

(Nov.2002, May2008)

Q.5 A product passes through two processes. The output of process I becomes the input of process II and the output of process II is transferred to warehouse. The quantity of raw

materials introduced into process I is 20,000 kg at Rs.10 per kg. The cost and output data for the month under review are as under:

	Process I (Rs.)	Process II (Rs.)
Materials	60,000	40,000
Labour	40,000	30,000
Production overheads	39,000	40,250
Normal loss	8%	5%
Output	18,000	17,400
Loss realisation of Rs./unit	2.00	3.00

The company's policy is to fix the selling price of the end product in such a way as to yield a profit of 20% on selling price.

Required:

- (i) Prepare the process account
- (ii) Determine the selling price per unit of the end product.

(Practice Manual, May1996)

Q.6 The input to a purifying process was 16,000 kgs of basic material purchased @ Rs.1.20 per kg. Process wages amounted to Rs.720 and overhead was applied @ 240% of the labour cost.

Indirect materials of negligible weight were introduced into the process at a cost of Rs.336. The actual output from the process was 15,000 kgs. The normal yield of the process is 92%. Any difference in weight between the input of basic material and output of purified material (product) is sold @ Rs. 0.50 per kg.

The process is operated under a licence which provides for the payment of royalty @ Rs. 0.15 per kg of the purified material produced.

Prepare:

- (a) Purifying process account
- (b) Normal Wastage Account
- (c) Abnormal Wastage/Yield Account and
- (d) Royalty Payable Account.

(Practice Manual)

Q.7 A company is manufacturing building bricks and fire bricks. Both the products require two processes:

- i. Brick-forming
- ii. Heat treating

Time requirements for the two bricks are:

	Building Bricks	Fire Bricks
Forming per 100 Bricks	3 Hrs.	2 Hrs.
Heat-treatment per 100 Bricks	2 Hrs.	5 Hrs.

Total costs of the two departments in one month were

Forming Rs. 21,200

Heat treatment Rs. 48,800

Production during the month was:

Building bricks 1,30,000 Nos.

Fire Bricks 70,000 Nos.

Prepare a statement of manufacturing costs for the two varieties of bricks.

(Study material, Practice Manual, Nov.1984)

Q.8 In a manufacturing unit raw material passes through four processes I, II, III and IV and the input of each process is the output of the subsequent process. **The loss in the four processes I, II, III and IV are respectively 25%, 20%, 20% and 16.67% of the input.** If the end product at the end of the process IV is 40,000 kg what is the quantity of raw material required to be fed at the beginning of process I and the cost of the same at Rs. 5 per kg.

Find out also the effect of increase or decrease in the material cost of the end product for variation of every rupee in the cost of the raw material.

(Practice Manual, Nov.1996)

Q.9 In a manufacturing company a product passes through 5 operations. The output of the 5th operation becomes the finished product. The input rejection output and labour & overheads of each operation for a period are as under:

Operations	Inputs (Units)	Rejections (Units)	Output (Units)	Labour & overhead (Rs.)
1	21,600	5,400	16,200	1,94,400
2	20,250	1,350	18,900	1,41,750
3	18,900	1,350	17,550	2,45,700
4	23,400	1,800	21,600	1,40,400
5	17,280	2,880	14,400	86,400

You are required:

- (a) Determine the input required in each operation for one unit of final output.
- (b) Calculate the labour and overhead cost at each operation for one unit of final output and the total labour and overhead cost off all operations for one unit of final output.

(Practice Manual)

Q.10 An article passes through three successive operations from the raw material to the finished product stage. The following data are available from the production records of a particular month:-

Operation No.	Inputs (units)	Rejections (units)	Output (units)
1	60,000	20,000	40,000
2	66,000	6,000	60,000
3	48,000	8,000	40,000

- (i) Determine the input required to be introduced in the first operation in number of pieces in order to obtain finished output of 100 pieces after the last operation.
- (ii) Calculate the cost of raw material required to produce one piece of finished product, given the following information.

Weight of the finished piece is 0.10 kg. and the price of raw material is Rs. 20 per kg.

(Practice Manual, Nov03/Nov05)

Q.11 From the following information for the month of October 2003, prepare process III cost account:

	Rs.
Opening work in progress in process III	1,800 units at Rs.27,000
Transfer from process II	47,700 units at Rs.5,36,625
Transfer to warehouse	43,200 units
Closing WIP of process III	4,500 units
Units scrapped	1,800 units
Material added in process III	Rs.1,77,840
Labour	87,840
Overheads	43,920

Degree of completion:

	Opening WIP	Closing WIP	Scrap
Material	80%	70%	100%
Labour	60%	50%	70%

70%

125

Input of Materials	18,500 units at	Rs. 52,000
Direct Labour		Rs. 14,000
Overheads		Rs. 28,000
Closing W.I.P.	5,000 units	
(Material 90%, Labour & O/H 30%)		
Normal Process Loss is 10% of total input (Opening W.I.P. units+ units put in)		
Scrap Value Rs. 2 per unit		
Units transferred to next process	15,000 units	

You are required to :-

- Compute equivalent units of production.
- Compute cost per equivalent unit for each cost element i.e., materials, labour and overheads.
- Compute the cost of finished output and closing work in progress.
- Prepare the process and other Accounts.

Assume: (I) FIFO Method is used by the Company.

- The cost of opening work in progress is fully transferred to the next process.

(Practice Manual, May1993)

Q.14 A product passes through three processes-A, B and C. **The details of expenses incurred on the three processes during the year 1992 were as under:**

Process	A	B	C
Units issued/introduced cost per unit Rs.100	10,000		
	Rs.	Rs.	Rs.
Sundry materials	10,000	15,000	5,000
Labour	30,000	80,000	65,000
Direct expenses	6,000	18,150	27,200
Selling price per unit of output	120	165	250
Management expenses during the year were Rs.80,000 and selling expenses were Rs.50,000. These are not allocable to the processes.			

Actual output of the three processes was:

A-9,300 units, B-5,400 units and C-2,100 units. Two- thirds of the output of process A and one- half of the output of the process B was passed to the next process and the balance was sold. The entire output of process C was sold.

The normal loss of the three processes, calculated on the input of every process was:

Process A-5%, B-15% and C-20%

The loss of process A was sold at Rs.2 per unit that of B at Rs.5 per unit and of process C at Rs.10 per unit.

Prepare the three process Account and the Profit & Loss Account.

(Practice Manual, Nov.1993)

Q.15 Following data is available for a product for the month of July 1993.

	Process I	Process II
Opening work in progress	Nil	Nil
	Rs.	Rs.
Cost incurred during the month:		
Direct materials	60,000	--
Labour	12,000	16,000
Factory overheads	24,000	20,000
Units of production:		
Received in process	40,000	36,000
Completed and transferred	36,000	32,000
Closing work in progress	2,000	?
Normal loss in process	2,000	1,500

Production remaining in process has to be valued as follows:

Materials	100%
Labour	50%
Overheads	50%

There has been no abnormal loss in process II.

Prepare process account after working out the missing figure and with detailed workings.

(Study Material)

Q.16 From the following information relating to the month of April 06, calculate the equivalent production units and the value of finished production and work-in-progress, using the LIFO method.

Opening work-in-progress on 1st April: 5,000 units; 50% complete.

	Cost Rs.
Materials	6,000
Labour	8,000
Overheads	<u>8,000</u>

	<u>22,000</u>
Units introduced into the process: 10,000	
	Cost Rs.
Materials	30,000
Labour	52,500
Overheads	<u>70,000</u>
	<u>1, 52,500</u>

During the period 7,500 units were completed and transferred to the next process. Closing work-in-progress on 30th April: 7,500 units, 50% complete.

(Study Material, May1999)

Q.17 Following information is available regarding process A for the month of February, 2006:

Production Record	Units
Units in process as on 1.2.2006	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 28.2.2006	6,000
(All materials used, 33-1/3% complete for labour and overhead)	
Cost Records	
Work-in-process as on 1.2.2006	Rs.
Materials	6,000
Labour	1,000
Overhead	<u>1,000</u>
	<u>8,000</u>
Cost during the month	
Materials	25,600
Labour	15,000
Overhead	<u>15,000</u>
	<u>55,600</u>

Presuming that average method of inventory is used, prepare:

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

(May 2001)

Q.18 The following information is given in respect of process No. 3 for the month of January 2001.

Opening stock – 2,000 units made up of:

Materials-I	Rs.12,350
Materials-II	Rs.13,200
Labour	Rs.17,500
Overheads	Rs.11,000

Transferred from process No. 2: 20,000 units @ Rs.6.00 per unit.

Transferred to process No. 4: 17,000 units.

Expenditure incurred in process No. 3:

Materials	Rs.30,000
Labour	Rs.60,000
Overheads	Rs.60,000

Scrap: 1,000 units

Direct materials	100%
Direct labour	60%
Overheads	40%

Normal loss 10% of production

Scrapped units realised Rs.4 per unit.

Closing stock: 4,000 units

Degree of completion: materials – 80%, labour–60% & overheads–40%.

Prepare process No. 3 Account using average price method, along with necessary supporting statements.

(Practice Manual, May-2006)

Q.19 A company produces a component, which passes through two processes. During the month of April, 2006, materials for 40,000 components were put into Process I of which 30,000 were completed and transferred to Process II. Those not transferred to Process II were 100% complete as to materials cost and 50% complete as to labour and overheads cost. **The Process I costs incurred were as follows:**

Direct material	Rs.15,000
Direct wages	Rs.18,000
Factory overheads	Rs.12,000

Of those transferred to Process II, 28,000 units were completed and transferred to finished goods stores. There was a normal loss with no salvage value of 200 units in Process II. There

were 1,800 units, remained unfinished in the process with 100% complete as to materials and 25% complete as regard to wages and overheads.

No further process material costs occur after introduction at the first process until the end of the second process, when protective packing is applied to the completed components. **The process and packing costs incurred at the end of the Process II were:**

Packing materials	Rs.4, 000
Direct wages	Rs.3, 500
Factory overheads	Rs.4, 500

Required:

- (i) Prepare Statement of Equivalent Production, Cost per unit and Process I A/c.
- (ii) Prepare Statement of Equivalent Production, Cost per unit and Process II A/c.

(Practice Manual, Nov-2007)

Q.20 BC Ltd. manufactures a product ZX by using the process namely R.T. for the month of May, 2007 the following data are available:

Process RT

Materials introduced (units)	16,000
Transfer to next process (units)	14,400

Work in process:

At the beginning of the month (units) (4/5 completed)	4,000
At the end of the month (units) (2/3 completed)	3,000

Cost records:

Work in process at the beginning of the month

Materials	Rs.30, 000
Conversion cost	Rs.29, 200
Cost during the month: materials	Rs.1, 20,000
Conversion cost	Rs.1, 60,800

Normal spoiled units are 10% of goods finished output transferred to next process. Defects in these units are identified in their finished stage. Materials for the product are put in the process at the beginning of the cycle of operation, whereas labour and other indirect cost flow evenly over the year. It has no realisable value for spoiled units

Required:

- (i) Statement of equivalent producing (average cost method)
- (ii) Statement of cost and distribution of cost.
- (iii) Process accounts.

(May 2003)

Q.21 RST manufactures plastic moulded chairs. Three models of moulded chairs, all variation of the same design are standard, deluxe and executive. The company uses an operation-costing system.

RST Ltd. has extrusion, form, trim and finish operations. Plastic sheets are produced by the extrusion operation. During the forming operation, the plastic sheets are moulded into chair seats and the legs are added. The standard model is sold after this operation.

During the trim operation, the arms are added to the deluxe and executive models and the chairs edges are smoothed. Only the executive model enters the finish operation, in which padding is added. All of the units produced receive the same steps within each operation.

In April, 2003, units of production and direct materials cost incurred are as follows:

	Units produced	Extrusion Materials (Rs.)	Form Materials (Rs.)	Trim Materials (Rs.)	Finish Materials (Rs.)
Standard model	10,500	1,26,000	42,000	0	0
Deluxe model	5,250	63,000	21,000	15,750	0
Executive model	<u>3,500</u>	<u>42,000</u>	<u>14,000</u>	<u>10,500</u>	<u>21,000</u>
	19,250	2,31,000	77,000	26,250	21,000

The total conversion costs for the month of April, 2003 are:

Conversion Costs	Extrusion Operation	Form Operation	Trim Operation	Finish operation
Total	6,06,375	2,97,000	1,55,250	94,500

Required:

- (i) For each product produced by RST Ltd. during April, 2003, determine the unit cost and the total cost.

(ii) Now consider the following information for May. All units costs in May are identical to the April unit costs calculate as above in (i) At the end of May, 1,500 units of the Deluxe model remain in work-in-progress. These units are 100% complete as to materials and 65% complete in the trim operation. Determine the cost of the Deluxe model work-in-process inventory at the end of May.

INTER PROCEE PROFIT

(Study Material, Nov.1990)

Q.22 A Ltd. produces product 'AXE' which passes through two processes before it is completed and transferred to finished stock. The following data relate to October 2005:

Particulars	Process		Finished stock
	I	II	
	Rs.	Rs.	Rs.
Opening stock	7,500	9,000	22,500
Direct materials	15,000	15,750	
Direct wages	11,200	11,250	
Factory overheads	10,500	4,500	
Closing stock	3,700	4,500	11,250
Inter-process profit included in opening stock		1,500	8,250

Output of Process I is transferred to Process II at 25% profit on the transfer price. Output of Process II is transferred to finished stock at 20% profit on the transfer price. Stock in process is valued at prime cost. Finished stock is valued at the price at which it is received from process II. Sales during the period are Rs. 1, 40,000.

Prepare Process cost accounts and finished goods account showing the profit element at each stage.

(Practice Manual, Nov2008)

Q.23 A product passes through three processes 'X', 'Y' and 'Z'. The output of process 'X' and 'Y' is transferred to next process at cost plus 20 per cent each on transfer price and the output of process 'Z' is transferred to finished stock at a profit of 25 per cent on transfer price. **The following information's are available in respect of the year ending 31st March, 2008:**

	Process X	Process Y	Process Z	Finished Stock (Rs.)
	(Rs.)	(Rs.)	(Rs.)	

Opening Stock	15,000	27,000	40,000	45,000
Material	80,000	65,000	50,000	
Wages	1,25,000	1,08,000	92,000	
Manufacturing Overheads	96,000	72,000	66,500	
Closing Stock	20,000	32,000	39,000	50,000
Inter process profit included in opening stock	NIL	4,000	10,000	20,000

Stock in processes is valued at prime cost. The finished stock is valued at the price at which it is received from process 'Z'. Sales of the finished stock during the period was Rs. 14,00,000.

You are required to prepare:

- (i) Process accounts and finished stock account showing profit element at each stage.
- (ii) Profit and Loss account.
- (iii) Show the relevant items in the Balance Sheet.

JOINT PRODUCT & BY PRODUCT

(Study Material)

Q.1 A coke manufacturing company produces the following products by using 5,000 tonnes of coal Rs. 15 per tonne into a common process.

Coke	3,500 tonnes
Tar	1,200 tonnes
Sulphate of ammonia	52 tonnes
Benzol	48 tonnes

Apportion the joint cost amongst the products on the basis of the **physical unit method**.

(Study Material)

Q.2 Find out the cost of joint products A, B and C using **average unit cost method** from the following data:

(a) Pre-separation Joint Cost Rs. 60,000.

(b) Production data:

Products	Units produced
A	500
B	200
C	<u>300</u>
	<u>1,000</u>

(Study Material)

Q.3 Find out the cost of joint products A and B using **contribution margin method** from the following data:

Sales

A: 100 kg@ Rs. 60 per kg

B: 120 kg@ Rs. 30 per kg

Joint costs

Marginal cost Rs. 4,400

Fixed cost Rs. 3,900

(Practice Manual, May-1998)

Q.4 Two products P and Q are obtained in a crude form and require further processing at a cost of Rs.5 for P and Rs.4 for Q per unit before sale. Assuming a net margin of 25% on cost,

their sale prices are fixed at Rs.13.75 and Rs.8.75 per unit respectively. **During the period, the joint cost was Rs.88,000 and the outputs were:**

P	8,000 units
Q	6,000 units

Ascertain the joint cost per unit.

Study Material, Practice Manual, May-2002)

Q.5 Inorganic Chemical purchases salt and processes it into more-refined products such as Caustic soda, Chlorine, and PVC (Polyvinyl chloride). During the month of April, 2000, Inorganic Chemicals purchased salt for Rs. 10,00,000. Conversion cost of Rs. 15,00,000 was incurred **up to the split-off point**, at which time two saleable products were produced: Caustic soda and chlorine. **Chlorine can be further processed into PVC.** The April production and sales information are as follows:

The April production and sales information are as follows:

	Production	Sales	Sales Price per Ton
Caustic Soda	1,200 tons	1,200 tons	Rs. 1,250
Chlorine	800 tons	---	---
PVC	500 tons	500 tons	Rs. 5,000

All 800 tons of chlorine was further processed, at an incremental cost of Rs. 5,00,000 to yield 500 tonnes of PVC. There were no by products or scrap from this further processing of chlorine. There were no beginnings or ending inventories of caustic soda, chlorine or PVC in April.

There is an active market for chlorine. **Inorganic Chemicals could have sold all its April production of chlorine at Rs. 1,875 a tonne.**

Required:

(i) Calculate, **how the joint costs of Rs. 25,00,000 would be allocated** between Caustic soda and Chlorine under each of the following methods:

- (1) Sales value at split off;
- (2) Physical measure (tone); and
- (3) Estimated net realizable value.

(ii) What is the **gross margin percentage** of Caustic soda and PVC under the three methods cited in requirement (i)?

(iii) Lifetime Swimming Pool Products offer to purchase 800 tons of Chlorine in May, 2000 at Rs. 1,875 a ton. This sale would mean that no PVC would be produced in May. **How would accepting the offer affect May Operating Income?**

(Study Material, Practice Manual, Nov.1997)

Q.6 SUNMOON Ltd. produces 2,00,000: 30,000; 25,000; 20,000 and 75,000 units of its five products A, B, C, D and E respectively in a manufacturing process and sells them at Rs.17, Rs.13, Rs.8, Rs.10 and Rs.14 per unit. **Except product D remaining products can be further processed** and then can be sold at Rs. 25, Rs. 17, Rs. 12 and Rs. 20 per unit in case of A, B, C and E respectively.

Raw material costs Rs. 35,90,000 and other manufacturing expenses cost Rs. 5,47,000 in the manufacturing process which are absorbed on the products on the basis of their 'Net realisable value'. The further processing costs of A, B, C and E are Rs. 12,50,000; Rs. 1,50,000; Rs. 50,000 and Rs. 1,50,000 respectively. Fixed costs are Rs. 4,73,000.

You are required to prepare the following in respect of the coming year:

- (a)** Statement showing income forecast of the company **assuming that none of its products are to be further processed.**
- (b)** Statement showing income forecast of the company **assuming that products A, B, C and E are to be processed further.**

Can you suggest any other production plan whereby the company can maximise its profits? If yes, then submit a statement showing income forecast arising out of adoption of that plan.

(Practice Manual, Nov-1999)

Q.7 The Sunshine Oil Company purchases crude vegetable oil. It does refining of the same. The refining process result in four products at the split-off point: M, N, O and P.

Product O is fully processed at the split-off point. Products M, N and P can be individually further refined into 'Super M' 'Super N' and 'Super P'. **In the most recent month (October, 1999), the output at split-off point was:**

Product M	3,00,000 gallons
Product N	1,00,000 gallons
Product O	50,000 gallons
Product P	50,000 gallons

The joint cost of purchasing the crude vegetable oil and processing it were Rs. 40,00,000. Sunshine had no beginning or ending inventories. Sales of product O in October were Rs.20,00,000. Total output of products M, N and P was further refined and then sold. Data related to October, 1999 are as follows:

Further processing cost to sales		
	Make Super Product	Sales
'Super M'	Rs.80,00,000	Rs. 1,20,00,000
'Super N'	Rs.32,00,000	Rs. 40,00,000
'Super P'	Rs.36,00,000	Rs. 48,00,000

Sunshine had the option of selling products M, N and P at the split-off point. This alternative would have yielded the following sales for the October, 1999 production:

Product M	Rs. 20,00,000
Product N	Rs. 12,00,000
Product P	Rs. 28,00,000

You are required to:

(i) How the joint cost of Rs.40,00,000 would be allocated between each product under each of the following methods:

- (a) Sales value at split-off;
- (b) Physical output (gallons)
- (c) Estimated net realisable value?

(ii) Could sunshine have increased its October, 1999 operating profits by making different decisions about the further refining of products M, N or P? Show the effect of any change you recommend on operating profits.

(Practice Manual, May-2000)

Q.8 In a chemical manufacturing company, three products A, B and C emerge at a **single split off stage** in department P. **Product A is further processed in department Q, product B in department R and product C in department S.** There is no loss in further Processing of any of the three products. The cost data for a month are as under:

Cost of raw materials introduced in department P	Rs. 12,68,800
Direct Wages Department	
P	3,84,000
Q	96,000

R	64,000
S	36,000

Factory overheads of Rs 4,64,000 are to be apportioned to the departments on direct wage basis. During the month under reference, the company sold all three products after processing them further as under:

Products	A	B	C
Output sold kg.	44,000	40,000	20,000
Selling Price per kg.	Rs 32	24	16

There are no Opening or Closing Stocks. If these products were sold at the split off stage, that is, without further processing, the selling prices would have been Rs. 20, Rs 22 and Rs. 10 each per kg respectively for A, B and C.

Required:

- (i) Prepare a **statement showing the apportionment of joint costs** to joint products:
- (ii) Present a **statement showing product-wise and total profit for the month** under reference as per the company's current processing policy.
- (iii) **What processing decision should have been taken to improve the profitability of the company?**
- (iv) **Calculate the product-wise and total profit arising from your recommendation in (iii) above.**

(Practice Manual, May-2003)

Q.9 ABC Ltd. operates a simple chemical process to convert a single material into three separate items, referred to here as X, Y and Z. All three end products are separated simultaneously at a single split-off point.

Product X and Y are ready for sale immediately upon split off without further processing or any other additional costs. Product Z, however, is processed further before being sold. There is no available market price for Z at the split-off point.

The selling prices quoted here are expected to remain the same in the coming year. **During 2002-03, the selling prices of the items and the total amounts sold were:**

X	–	186 tons sold for Rs. 1,500 per ton
Y	–	527 tons sold for Rs. 1,125 per ton
Z	–	736 tons sold for Rs. 750 per ton

The total joint manufacturing costs for the year were Rs. 6,25,000. An additional Rs. 3,10,000 was spent to finish product Z.

There were no opening inventories of X, Y or Z. At the end of the year, the following inventories of complete units were on hand:

X	180 tons
Y	60 tons
Z	25 tons

There was no opening or closing work-in-progress.

Required:

(i) Compute the cost of inventories of X, Y and Z for Balance Sheet purposes and cost of goods sold for income statement purpose as of March 31, 2003, using:

(a) Net realizable value (NRV) method of joint cost allocation

(b) Constant gross-margin percentage NRV method of joint-cost allocation.

(ii) Compare the gross-margin percentages for X, Y and Z using two methods given in requirement (i)

(Practice Manual, May-2005)

Q.10 A company produces two joint products X and Y, from the same basic materials. The processing is completed in three departments.

Materials are mixed in department I. At the end of this process X and Y get separated. **After separation X is completed in the department II and Y is finished in department III.** During a period 2,00,000 kgs of raw material were processed in department I, at a total cost of Rs. 8,75,000, and the resultant 60% becomes X and 30% becomes Y and 10% normally lost in processing.

In department II 1/6 of the quantity received from department I is lost in processing. X is further processed in department II at a cost of Rs. 1,80,000.

In department III further new material added to the material received from department I and weight mixture is doubled, there is no quantity loss in the department and further processing cost (with material cost) is Rs. 1,50,000.

The details of sales during the year:

	Product X	Product Y
Quantity sold (kgs)	90,000	1,15,000
Sales price per kg (Rs.)	10	4

There were no opening stocks. If these products sold at split-off-point, the selling price of X and Y would be Rs. 8 and Rs. 4 per kg respectively.

Required:

- (i) Prepare a statement showing the **apportionment of joint cost** to X and Y in proportion of sales value at **split off point**.
- (ii) Prepare a **statement showing the cost per kg of each product** indicating joint cost, processing cost and total cost separately.
- (iii) Prepare a **statement showing the product wise profit for the year**.
- (iv) On the basis of profits before and after further processing of product X and Y, give your **comment that products should be further processed or not**.

(May-2007)

Q.11 A Company produces two joint products **P and Q in 70: 30 ratio** from basic raw materials in department A. **The input output ratio of department A is 100: 85.** Product P can be sold at the split of stage or can be processed further at department B and sold as product AR. **The input output ratio is 100: 90 of department B.** *The department B is created to process product A **only** and to make it product AR.*

The selling prices per kg are as under:

Product P	Rs.85
Product Q	Rs.290
Product AR	Rs.115

The production will be taken up in the next month.

Raw materials 8,00,000 Kgs Purchase price Rs. 80 per Kg.

	Deptt. A	Deptt. B
	Rs. Lacs	Rs. Lacs
Direct materials	35.00	5.00
Direct labour	30.00	9.00
Variable overheads	45.00	18.00
Fixed overheads	<u>40.00</u>	<u>32.00</u>
Total	<u>150.00</u>	<u>64.00</u>

Selling Expenses:

	Rs. in Lacs
Product P	24.60
Product Q	21.60
Product AR	16.80

Required:

- (i) Prepare a statement showing the apportionment of joint costs.
 (ii) State whether it is advisable to produce product AR or not.

(Practice Manual, Nov.2006)

Q.12 A Chemical Company carries on production operation in two processes. The material first pass through Process I, where Product 'A' is produced.

Following data are given for the month just ended:

Material input quantity	2,00,000 kgs
Opening work-in-progress quantity	
(Material 100% and conversion 50% complete)	40,000 kgs
Work completed quantity	1,60,000 kgs
Closing work-in-progress quantity	
(Material 100% and conversion two-third complete)	30,000 kgs
Material input cost	Rs. 75,000
Processing cost	Rs. 1,02,000
Opening work-in-progress cost	
Material cost	Rs.20,000
Processing cost	Rs.12,000

Normal process loss in quantity may be assumed to be 20% of material input. It has no realisable value.

Any quantity of Product 'A' can be sold for Rs. 1.60 per kg. Alternatively, it can be transferred to Process II for further processing and then sold as Product 'AX' for Rs. 2 per kg.

Further materials are added in Process II, which yield two kgs. of product 'AX' for every kg. of Product 'A' of Process I. Of the 1,60,000 kgs. per month of work completed in Process I 40,000 kgs are sold as Product 'A' and 1,20,000 kgs. are passed through Process II for sale as Product 'AX'. Process II has facilities to handle up to 1,60,000 kgs. of Product 'A' per month, if required.

The monthly costs incurred in Process II (other than the cost of Product 'A') are:

	1,20,000 kgs of Product 'A' input	1,60,000 kgs of Product 'A' input
Material Cost	Rs. 1,32,000	Rs. 1,76,000
Processing Cost	Rs. 1,20,000	Rs. 1,40,000

Required:

- (i) Determine, using the **weighted average cost method**, the cost per kg. of Product 'A' in Process I and value of both work completed and closing work-in-progress for the month just ended.
- (ii) Is it worthwhile processing 1,20,000 kgs. of Product 'A' further?
- (iii) Calculate minimum selling price per kg, if a potential buyer could be fixed for additional quantity of 'AX'. Product 'AX' could be produced with remaining Product 'A' quantity.

(May 2004)

Q.13 PQR Ltd. produces two joint product P & Q together with a by product R, from a single main process (process 1). **Product P is sold at the point of separation for Rs.5 per kg whereas product Q is sold for Rs.7 per kg after further processing into product S.** By – product R is sold without further processing for Rs.1.75 per kg.

Process 1 is closely monitored by a team of chemists who planned the output per 1,000 kg of input materials to be as follows:

Product P	500 kg
Product Q	350 kg
Product R	100 kg
Toxic waste	50 kg

The toxic waste is disposed of at a cost of Rs.1.50 per kg and arises at the end of processing. Process 2 which is used for further processing of product Q into product S has the following cost structure:

Fixed costs	Rs. 6,000 per week
Variable costs	Rs. 1.50 per kg processed

The following actual data relate to the first week of accounting period 10:

Process 1

Opening work in process	Nil
Material input 10,000 kg costing	Rs.15,000
Direct labour	10,000
Variable overheads	4,000
Fixed overhead	6,000

Outputs;

Product P	4,800 kg
Product Q	3,600 kg
Product R	1,000 kg
Toxic waste	600 kg
Closing work in process	Nil

Process 2

Opening work in process	Nil
Input of product Q	3,600 kg
Output of product S	3,300 kg
Closing work in process	300 kg, 50% Converted

Conversion costs were incurred in accordance with the planned cost structure.

Required:

- (a) Prepare the main process account** for the first week of period 10 using the final sales value method to attribute pre-separation costs to joint products.
- (b) Prepare the toxic waste account and process 2 account** for the first week of period 10.
- (c) Comment on the method used by PQR Ltd. to attribute pre-separation costs of its joint products.**
- (d) Advise the management of PQR Ltd.** whether or not, on purely financial grounds, it should continue to process product Q into product S:
 - (i) If product Q could be sold at the point of separation for Rs.4.30 per kg, **and**
 - (ii) If 60% of the weekly fixed costs of process 2 were avoided by not processing product Q further.

Q.14 A company is able to obtain 2,00,000 kgs. of A and 4,00,000 kgs. of B from the input of 6,00,000 kgs. of raw material 'F'. The selling price of these output are A=Rs.6 per kg, B=Rs.4.50 per kg. The processing costs are:

Raw material 6,00,000 X 2	12,00,000
Variable processing costs	6,00,000
Fixed processing costs	<u>2,00,000</u>
Total	<u>20,00,000</u>

The company has three proposals for consideration:

- (a) Product A** can be **further processed** by mixing it with other purchased materials. The entire quantity of the resultant **product P can be sold at Rs.13 per kg**. Each kg. of 'p' requires one kg. of A and the processing costs amount to Rs.16,00,000.

- (b) There is an offer to **purchase an additional quantity of 40,000 kgs. of product B at a price of Rs.3.50 per kg.** The existing market for B will not be affected by this proposal. All production of product A can be sold at a uniform price.
- (c) A new raw material has just become available. The processing costs will remain the same but the **process will now yield 2 kgs. of A for every 3 kgs. of product B.** The total quantity of the new raw material available is limited to 6,00,000 kgs.

Required:

- (i) Find the **original profit** on sale of A and B.
- (ii) **Evaluate the proposal for further processing of A into P.**
- (iii) **In the case of proposal (b) the increased quantum of A will reduce its selling price. Find the minimum average price of A that will sustain the increased quantum of sales.**
- (iv) **Evaluate proposal (c) and find the maximum price the company can afford to pay for the new raw material by retaining the existing profit.**

(Practice Manual, Nov1996)

Q.15 A company processes a raw material in its department 1 to produce three products, viz., A, B, and X at the same split off stage. During a period 1,80,000 kg of raw materials were processed in department 1 at a total cost of Rs.12,88,000 and the resultant output of A, B and X were 18,000 kg, 10,000 kg and 54,000 kg respectively. ***A and B were further processed in department 2 at a cost of Rs. 1,80,000 and Rs.1,50,000 respectively:***

X was further processed in department 3 at a cost of Rs.1,08,000. There is no waste in further processing. The details of sales affected during the period were as under:

		A	B	X
Quantity sold	(kgs.)	17,000	5,000	44,000
Sales value	(Rs.)	12,24,000	2,50,000	7,92,000

There were no opening stocks. If these products were sold at split off stage, the selling price of A, B and X would have been Rs.50, Rs.40 and Rs.10 per kg respectively.

Required:

- (a) Prepare a **statement showing the apportionment of joint cost to A, B and X.**
- (b) Present a **statement showing the cost per kg** of each product indicating joint cost further processing cost and total cost separately.
- (c) Prepare a **statement showing the product wise and total profit for the period.**
- (d) State with **supporting calculations as to whether any or all the products should be further processed or not.**

Q.16 A factory producing one main product and two by products. Data for a month are shown below:

	Main product	By-product	
		P	Q
Sales	1,50,000	12,000	7,000
Manufacturing cost:			
(i) Before separation	75,000	-----	-----
(ii) After separation	23,000	2,200	1,800
Administration cost	12,000	1,500	1,000
Ratio of distribution of selling cost	85%	10%	5%
Net profit in sales	20%	15%	10%

Assuming no beginning or ending inventories, apportion the joint cost among main product and the by-product.

Q.17 Three products X, Y & Z along with a by-product B are obtained again in a crude state which requires further processing at a cost of Rs.5 for X, Rs.4 for Y and Rs.2.50 for Z per unit before sale. The by product is, however, saleable as such to a nearby factory. The selling price for the three main products and by-product, assuming they should yield a net margin of 25 percent on cost, are fixed at Rs.13.75, Rs.8.75, Rs.7.50 and Rs.1.00 respectively-all per unit quantity sold.

During a period, the joint input cost including the material cost was Rs.90,800 and the respective outputs were:

X 8,000 units Y 6,000 units Z 4,000 units B 1,000 units

By-product should be credited to the joint cost and only the net joint costs are to be allocated to the main products.

Calculate the joint cost per unit of each product and the margin available as a percentage on cost.

(Study Material, Practice Manual)

Q.18 A company's plant processes 1,50,000 kgs of raw material in a month to produce two products, viz, 'P' and 'Q'. The cost of raw material is Rs. 12 per kg. The process costs month are:

	Rs.
Direct Materials	90,000
Direct Wages	1,20,000

Variable Overheads	1,00,000
Fixed Overheads	1,00,000

The loss in process is 5% of input and the output ratio of P and Q which emerge simultaneously is 1:2. **The selling prices of the two products at the point of split off are:**

P: Rs. 12 per kg. Q: Rs.20 Per kg.

A proposal is available to process P further by mixing it with other purchased materials. The entire current output of the plant can be so processed further to obtain a new product 'S'. The price per kg. of S is Rs. 15 and each kg of output of S will require one kilogram of input P. The cost of processing of P into S (including other materials) is Rs. 1,85,000 per month.

You are required to prepare a statement showing the monthly profitability based both on the existing manufacturing operations and on further processing.

Will you recommend further processing?

(Study Material, Practice Manual, May1991)

Q.19 Three joint products are produced by passing chemicals through two consecutive processes. Output from process 1 is transferred to process 2 from which the three joint products are produced and immediately sold. The data regarding the processes for April, 1990 is given below:

	Process 1	Process 2
Direct material 2,500 kilos at Rs. 4 per kg	Rs.10,000	----
Direct Labour	Rs. 6,250	Rs. 6,900
Overheads	Rs.4,500	Rs.6900
Normal Loss	10% of input	----
Scrap value of loss	Rs. 2 per kg	----
Output	2,300 kg	Joint Products
		A – 900 Kgs
		B – 800 Kgs
		C – 600 Kgs

There were no opening or closing stocks in either process and the selling prices of the output from process 2 were:

Joint product A	Rs. 24 per kg
Joint product B	Rs. 18 per kg
Joint product C	Rs. 12 per kg

Required:

(a) Prepare an account for process 1 together with any Loss or Gain Accounts you consider necessary to record the month's activities.

(b) Calculate the profit attributable to each of the joint products by apportioning the total costs from process 2.

- (i) According to weight of output;
- (ii) By the market value of production.

(Study Material, Practice Manual, 1994)

Q.20 In the course of manufacture of the main product 'P', by products 'A' and 'B' also emerge. The joint expenses of manufacture amount to Rs. 1,19,550. All the three products are processed further after separation and sold as per details given below:

	Main products 'P'	By-products 'A'	'B'
Sales	Rs. 90,000	60,000	40,000
Costs incurred after separation	Rs. 6,000	5,000	4,000
Profit as percentage on sales %	25	20	15

Total fixed selling expenses are 10% of total cost of sales which are apportioned to the three products in the ratio of 20: 40: 40.

- (i) Prepare a statement showing the apportionment of joint costs to the main product and the two-by-products.
- (ii) If the by-product 'A' is not subjected to further processing and is sold at the point of separation for which there is a market, at Rs. 58,500 without incurring and selling expenses, would you advise its disposal at this stage? Show the workings.

(Practice Manual, May 1990)

Q.21 A factory is engaged in the production of a chemical BOMEX and in the course of its manufacture, a by-product BRUCIL is produced, which after further processing has a commercial value.

For the month of April 1990, the following are the summarised cost data:

	Joint Expenses (Rs.)	Separate Expenses Bomex (Rs.)	Brucil (Rs.)
Materials	1,00,000	6,000	4,000
Labour	50,000	20,000	18,000
Overheads	30,000	10,000	6,000
Selling Price per unit		98	34
Estimated profit per unit on sale of BRUCIL		98	34
		Units	Units
No. of units produced		2,000	2,000

The factory uses reverse cost method of accounting for by-products whereby the sales value of by products after deduction of the estimated, profit, post separation costs and selling and distribution expenses relating to the by- products is credited to the joint process cost account.

You are required to prepare statements showing:

(i) The joint cost allocable to BOMEX.

(ii) The product-wise and overall profitability of the factory for April 1990.

MARGINAL COSTING

Q.1 Following information's are available for A Ltd. Fixed cost Rs.5,00,000 output level 1,50,000 units variable cost Rs.10 per unit, selling price Rs.15 per unit.

Using marginal costing technique, calculate:

- | | |
|-------------------------|-------------------------------|
| (i) P/v ratio | (ii) BEP sales value |
| (iii) BEP sales (unit) | (iv) Margin of safety |
| (v) Margin safety ratio | (vi) Amount of profit earned. |

(Study Material)

Q.2 Mr. X has Rs. 2,00,000 investments in his business firm. He wants a 15% return on his money. From an analysis of recent cost figures, he finds that his variable cost of operating is 60 per cent of sales, his fixed costs are Rs. 80,000 per year. Show computations to answer the following questions:

- (i) What sales volume must be obtained to break even?
- (ii) What sales volume must be obtained to get 15 per cent return on investment?
- (iii) Mr. X estimates that even if he closed the doors of his business, he would incur Rs. 25,000 as expenses per year. At what sales would he be better off by locking his business up?

(Study Material)

Q. 3 A company had incurred fixed expenses of Rs. 4,50,000, with sales of Rs.15,00,000 and earned a profit of Rs.3,00,000 **during the first half year**. In the second half, it suffered a loss of Rs.1,50,000.

- (i) The profit-volume ratio, break-even point and margin of safety for the first half year.
- (ii) Expected sales volume for the second half year assuming that selling price and fixed expenses remained unchanged during the second half year.
- (iii) The break-even point and margin of safety for the whole year.

Q.4 The fixed overhead of Ram Ltd. Is Rs. 60,000 and P/V ratio is 20%. Find out the amount of Sales on a profit of Rs. 30,000. Also calculate B.E.P. Sales. What should be the B.E.P. Sales if P/V ratio becomes 40%.

(Study Material)

Q.5 (a) ABC Ltd. sells its product at Rs.15 per unit. In a period, if it produces and sells 8,000 units, it incurs a loss of Rs.5 per unit. If the volume is raised to 20,000 units, it earns a profit of Rs.4 per unit. Calculate break-even point both in terms of rupees as well as in units.

(b) In case of XYZ Ltd. if margin of safety is Rs.2,40,000 (40% of sales) and P/v ratio is 30%. Calculate its (i) Break-even sales and (ii) Amount of profit on sales of Rs.9,00,000.

(c) PQR Ltd. has earned contribution of Rs.2,00,000 and net profit on sales of Rs.1,50,000 on sales of Rs.8,00,000. What is its margin of safety?

Q.6 Following information is available for Jindal Ltd.:

	Year 2009	Year 2010
Sales (Rs.)	8,10,000	10,26,000
Profit	21,600	64,800

Fixed cost remains the same for both the years.

Calculate: (I) P/v ratio, (ii) Fixed cost, (iii) BEP sales, (iv) The amount of profit to if the sales is Rs.6,48,000, (v) The amount of sales to earn a profit of Rs.1,08,000.

(Study Material)

Q.7 A company has three factories situated in north, east and south with its Head Office in Mumbai. The management has received the following summary report on the operations of each factory for a period:

(Rs. in '000)

	Sales		Profit	
	Actual	Over/ (under) Budget	Actual	Over/ (under) Budget
North	1,100	(400)	135	(180)
East	1,450	150	210	90
South	1,200	(200)	330	(110)

Calculate for each factory and for the company as a whole for the period:

(i) The fixed costs. (ii) Break-even sales.

(Study Material, May1999)

Q.8(i) Ascertain profit when;

Sales	=	2,00,000
Fixed Cost	=	40,000
BEP	=	1,60,000

(ii) Ascertain sales when;

Fixed cost	=	20,000
Profit	=	10,000
BEP	=	40,000

(Study Material, May 1998)

Q.9 A single product company sells its product at Rs. 60 per unit. In 2006, the company operated at a margin of safety of 40%. The fixed costs amounted to Rs. 3,60,000 and the variable cost ratio to sales was 80%.

In 2007, it is estimated that the variable cost will go up by 10% and the fixed cost will increase by 5%.

Find the selling price required to be fixed in 2007 to earn the same P/V ratio as in 2006. Assuming the same selling price of Rs. 60 per unit in 2007, find the number of units required to be produced and sold to earn the same profit as in 2006.

(Study Material, Nov 1999)

Q.10 P R Ltd. has furnished the following data for the two years:

	2006	2007
Sales	Rs. 8,00,000	?
Profit/Volume Ratio (P/V ratio)	50%	37.5%
Margin of Safety sales as a % of total sales	40%	21.875%

There has been substantial savings in the fixed cost in the year 2007 due to the restructuring process. The company could maintain its sales quantity level of 2006 in 2007 by reducing selling price.

You are required to calculate the following:

- (i) Sales for 2007 in Rs.
- (ii) Fixed cost for 2007
- (iii) Break-even sales for 2007 in Rupees.

Q.11 Sales of two products are Rs.1,00,000 and Rs.1,50,000 with P/v ratio of 25% and 20% respectively. The fixed overheads of the organisation are Rs.75,000. To avoid loss which is being incurred at present, it is proposed to increase sales as capacities are sufficient.

Calculate the percentage increase required in both lines assuming the resistance to increase sales is same in both the lines.

(Practice Manual, Nov 2007)

Q.12 A company produces single product which sells for Rs. 20 per unit. Variable cost is Rs. 15 per unit and Fixed overhead for the year is Rs. 6,30,000.

Required:

- Calculate sales value needed to earn a profit of 10% on sales.
- Calculate sales price per unit to bring BEP down to 1,20,000 units.
- Calculate margin of safety sales if profit is Rs. 60,000.

(Practice Manual, May 2008)

Q.13 A company has fixed cost of Rs. 90,000, Sales Rs. 3,00,000 and Profit of Rs. 60,000.

- Required:** (i) Sales volume if in the next period, the company suffered a loss of Rs. 30,000.
(ii) What is the margin of safety for a profit of Rs. 90,000?

(Practice Manual, Nov.2008)

Q.14 PQ Ltd. reports the following cost structure at two capacity levels:

(100% capacity)

	2,000 units	1,500 units
Production overhead I	Rs. 3 per unit	Rs. 4 per unit
Production overhead II	Rs. 2 per unit	Rs. 2 per unit

If the selling price, reduced by direct material and labour is Rs. 8 per unit, what would be its break-even point?

(May 2001)

Q.15 Fill in the blanks of the following independent situations: (In Rs.)

	A	B	C	D	E
S.P. per unit	---	50	20	---	30
V.C. % of S.P.	60	---	75	75	---
No. of units sold	10,000	4,000	---	6,000	5,000
Marginal Contribution	20,000	80,000	---	25,000	50,000
Fixed Cost	12,000	---	1,20,000	10,000	---
Profit/Loss	---	20,000	30,000	---	15,000

by 10% due to recession. The company was able to produce & sales equivalent to 50% of its total capacity. The sales volume at this level was Rs.13,50,000 at the reduced price of Rs.9. due to recession in production the actual variable cost went up by 2% of the budget. **Find P/V ratio and BEP in value in changed situation.**

Q.20 A Soft drink company is planning to establish a subsidiary company in India to produce mineral water.

Based on the estimated annual sales of 40,000 bottles of the mineral water, cost studies produced the following estimates for the Indian subsidiary.

	Total annual cost Rs.	Percent of total annual Cost which is variable
Material	2,10,000	100%
Labour	1,50,000	80%
Factory overhead	92,000	60%
Administration expenses	40,000	35%

The Indian production will be sold by manufacturer's representatives who will receive a commission of 8% of the sale price. No portion of the Japanese office expenses is to be allocated to the Indian subsidiary

Required to:

- (i) Compute the sale price per bottle** to enable the management to realise an estimated 10% profit on sale proceeds in India.
- (ii) Calculate the break-even point in Rupee sales** and also in number of bottles for the Indian subsidiary on the assumption that the sale price Rs.14 per bottle.

Q.21 Kaveri Ltd. manufactures and sells a product, the selling price and raw material cost of which have remained unchanged during the past two years. **The following are the relevant data:**

	Year 1	Year 2
Particulars quantity sold (kgs)	100	150
	Rs.	Rs.
Sales value	20,000	?
Raw material	10,000	?
Direct wages	3,000	?
Factory overheads	5,000	5,700

Profit	2,000	2,550
--------	-------	-------

During year 2, direct wages rates increased by 50% but there was a saving of Rs.300 in fixed factory overheads.

Required:

What quantity (kgs) the company should have produced and sold in year 2 in order to maintain the same amount of net profit per kg. as it earned during year 1?

(Study Material)

Q.22 The Ward Company sold 1,00,000 units of its product at Rs. 20 per unit. Variable costs are Rs. 14 per unit (manufacturing costs of Rs. 11 and selling costs of Rs. 3). Fixed costs are incurred uniformly throughout the year and amount to Rs. 7,92,000 (manufacturing costs of Rs. 500,000 and selling costs of Rs. 292,000). There are no beginning or ending inventories.

Required: Determine the following:

- The break-even point for this product
- The number of units that must be sold to earn an income of Rs. 60,000 for the year (before income taxes)
- The number of units that must be sold to earn an after-tax income of Rs. 90,000, assuming a tax-rate of 40 percent.
- The break-even point for this product after a 10 percent increase in wages and salaries (assuming labour costs are 50 percent of variable costs and 20 percent of fixed costs).

(Study Material)

Q.23 ABC Ltd. is planning a concert in a remote village in India. The following costs have been estimated.

	Rs.
Rent of premises	1,300
Advertising	1,000
Printing of tickets	250
Tickets sellers, security	400
Wages of ABC Ltd personnel employed at the concert	600
Fee to artist	1,000

There are no variable costs of staging the concert. The company is considering a selling price for tickets at either Rs. 4 or Rs. 5 each.

Required:

- Calculate the number of tickets that must be sold at each price in order to breakeven.

- (b) Recalculate, the number of tickets which must be sold at each price in order to breakeven, if the artist agrees to change from a fixed fee of Rs. 1,000 to a fee equal to 25% of the gross sales proceeds.
- (c) Calculate the level of ticket sales, for each price, at which the company would be indifferent as between the fixed and percentage fee alternatives.
- (d) Comment on the factors which you think the company might consider in choosing between the fixed fee and percentage fee alternative.

Q.24 Future Ltd. is manufacturing and selling two products A & B at selling of Rs.3 and Rs.4 respectively. The following sales strategy has been outlined for the year 2009:

- (i) Sales planned for year will be Rs.7.20 lack in the case of A and Rs.3.50 lack in the case of B.
- (ii) To meet competition the selling price of A will be reduced by 20% and that of B by 12.5%.
- (iii) Break-even planned at 60% of the total sales of each product.
- (iv) Profit for the year to be achieved is planned as Rs.69,120 in the case of A and Rs.17,500 in the case of B. This would be possible by reducing the present annual fixed expenses of Rs.1,35,000 allocated as Rs. 1,08,000 to A and Rs.25,000 to B.

You are required to calculate:

- (a) Number of units of A & B to be sold during the year.**
- (b) Number of units of A & B to be sold to break-even.**
- (c) Reduced product-wise fixed expenses.**

Q.25 A company currently operating at 80% capacity has the following particulars:

Sales	Rs. 32,00,000
Direct materials	Rs. 10,00,000
Direct labour	Rs. 4,00,000
Variable overheads	Rs. 2,00,000
Fixed overheads	Rs. 13,00,000

An export order has been received that would utilise half the capacity of the factory. The order cannot be split i.e. it has either to be taken in full and executed at 10% below the normal domestic prices, or rejected totally. The alternatives available to the management are:

- (i) Rejected the order and continue with the domestic sales only; (as at present)
- (ii) Accept the order, split capacity between overseas and domestic sales and turn away excess domestic demand.

(iii) Increase capacity so as to accept the export order and maintain the present domestic sales by:

- (a) Buying equipment that will increase capacity by 10%. This will result in an increase of Rs. 1,00,000 in fixed cost. Or
- (b) Work overtime to meet balance of required capacity. In that case labour will be paid at one and half times the normal wages rate.

Prepare a comparative statement of profitability and suggest the best alternative.

(May 1999)

Q.26 Raj Ltd. manufacturing three products X, Y and Z. The unit selling prices of these products are Rs. 100, Rs.160 & Rs.75 respectively. The corresponding unit variable cost are Rs.50, Rs.80 and Rs.30. the proportions (quantity wise) in which these products are manufactured & sold are 20%, 30% & 50% respectively. The total fixed cost are Rs.14,80,000.

Calculate overall break-even quantity & the product wise break up of such quantity.

MERGER OF PLANT

Q.27 A, B and C are three similar plants under the same management who wants them to be merged for better operation.

The details are as under:

Plant	A	B	C
Capacity operated	100%	70%	50%
	Rs. (in lacs)	Rs. (in lacs)	Rs. (in lacs)
Turnover	300	280	150
Variable cost	200	210	75
Fixed cost	70	50	62

Find out:-

- (I) The capacity of the merged plant for break-even.
- (ii) The profit at 75% capacity of the merged plant.
- (iii) The turnover from the merged plant to give a profit of Rs. 28 lack.

COST INDIFFERENT POINT

Q.28 A Company's Central Services Department is evaluating new copying machines to replace the firm's current copier, which is worn out. The analysis of alternative machines has been narrowed to three and the estimated costs of operating them are shown below:

Cost per 100 copies		
Machine A	Machine B	Machine C

	Rs.	Rs.	Rs.
Material Cost	60	40	20
Labour Cost	80	30	20
Annual Lease Cost	30,000	58,000	1,00,000

1. Compute the cost indifference points for the three alternatives.
2. What do the cost indifference points suggest as a course of action in this regard?

SHUT DOWN POINT

Q.29 A paint manufacturing company manufactures 2,00,000 per annum medium sized tins of "Spray Lac Paints" when working at normal capacity. It incurs the following costs of manufacturing per unit.

Direct material	Rs. 7.80
Direct labour	2.10
Variable overhead	2.50
Fixed overhead	<u>4.00</u>
Product cost (unit)	<u>16.40</u>

Each unit (tin) of the product is sold for Rs.21 with variable selling and administrative expenses of 60 paise per tin. During the next quarter only 10,000 units can be produced and sold.

Management plans to shut down the plant estimating that the fixed manufacturing cost can be reduced to Rs.74,000 for the quarter. When the plant is operating, the fixed overheads are incurred at a uniform rate throughout the year. Additional costs of plant shut down for the quarter are estimated at Rs. 14,000.

You are required:

- (i) To express your opinion, along with the calculations, as to whether the plant should be shut down during the quarter.
- (ii) To calculate the shut down point for quarter in units of products.

DIFFERENTIAL AND INCREMENTAL APPROACH

Q.30 LNT Company Ltd. operates at 100% normal capacity and produces 2,00,000 units of a product. Its income statement at this volume appears as under:

<u>Income statement</u>		Rs.
Sales	(2,00,000 units @ Rs.10 each)	20,00,000

Less: Variable cost:	
Direct material @ Rs. 3 each	6,00,000
Direct wages @ Rs. 2 each	4,00,000
Variable production overhead @ Rs. 1 each	<u>2,00,000</u>
Total variable cost	<u>12,00,000</u>
Contribution	8,00,000
Less: Fixed production overhead	<u>4,00,000</u>
Factory profits	4,00,000

The company receives an offer from an overseas customer for the supply of an additional 80,000 units @ Rs.8.00 per unit. To produce the additional output, the company's fixed cost will increase by Rs.1,00,000. **Using differential costing and incremental revenue approach advise the company whether it should accept order or not.**

ABSORPTION COSTING

(Study Material, Practice Manual)

Q.31 WONDER LTD. manufactures a single product, EST. The following figures relate to EST 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 EST at the beginning of the year.

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

Required:

- What would be the fixed production costs absorbed by EST if absorption costing is used?
- What would be the under/over-recovery of overheads during the period?
- What would be the profit using absorption costing?

- 160

(May 2000)

Q.34 ABC Motors assembles and sells motor, vehicles. It uses an actual costing system, in which unit costs are calculated on a monthly basis. Data relating to March and April 2000 are:

	March	April
Unit data:		
Beginning inventory	0	150
Production	500	400
Sales	350	520

Variable –cost data:

Manufacturing cost per unit produced	Rs.10,000	10,000
Distribution costs per unit sold	3,000	3,000

Fixed-cost data:

Manufacturing costs	Rs.20,00,000	Rs.20,00,000
Marketing costs	6,00,000	6,00,000

The selling price per motor vehicle is Rs.24,000.

Required:

(i) Present income statement for ABC motors in March and April of 2000 under

(a) variable costing and (b) Absorption costing.

(ii) Explain the differences between (a) and (b) for March and April.

BREAK EVEN CHART**(Study Material)****Q.35**

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. 100
Selling price per unit	Rs. 200

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?

(Study Material, Practice Manual)

Q. 36 You are given the following data for the year 2010 for Ralco 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>	<u>100%</u>

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

KEY FACTORING

Q.37 Cognizant Technologies produces three products A, B and C from the same manufacturing facilities. The cost and other details of the three products are as follows:

	A	B	C
Selling price/unit (Rs.)	200	160	100
Variable cost/unit (Rs.)	120	120	40
Fixed expenses/month (Rs.)			2,76,000
Maximum production per months (Units)	5,000	8,000	6,000
Maximum demand per month (units)	2,000	4,000	2,400

The total processing hours available for the month cannot be increased beyond 200 hours. With these available 200 hours only one of these three products can be produced at it maximum level.

You are required:

(a) Compute the most profitable product-mix;

(b) Compute the overall break-even sales of the company for the month based on the mix calculate in (a) above.

(Nov.1998)

Q.38 The following particulars are taken from the records of a company engaged in the manufacturing two products, A and B, from a certain material:

	Product A (Per unit) Rs.	Product B (Per unit) Rs.
Sales	2,500	5,000
Material cost (Rs.50 per kg.)	500	1,250
Direct labour (Rs.30 per hour)	750	1,500
Variable overheads	250	500
Total fixed overheads : Rs.10,00,000		

(a) Comment the profitability of each product when:

(i) Total sales in value is limited.

(ii) Raw material is in short supply.

(iii) Production capacity is the limiting factor.

(iv) Total availability of raw materials is 20,000 kg. and maximum sales potential of each product is 1,000 units find the product mix to yield maximum profits.

(b) The profit volume of X Ltd. is 50% and the margin of safety is 40%.

You are required to calculate the net profit if sales volume is Rs. 1,00,000.

STANDARD COSTING

MATERIAL VARIANCE

Q.1 Material M is used to produced a toy. It was budgeted that each toy will require 5 kg. of material @ Rs.9 per kg. During a month 500 pieces of toy was produced using 2,400 kg. Material purchased at Rs.25, 000.

Calculate material variance.

(Study Material)

Q.2 The standard set for a chemical mixture of a firm is:

Material	Standard Mix.	St. Price per tonne
A	40%	Rs.20
B	60%	Rs.30

The standard loss is 10%.During the period 182 tonnes of output were produced from A 90 tonnes (Rs.18 per tonne) and B 110 tonne (Rs.34 per tonne)

Calculate variances.

(Study Material)

Q.3 The standard mix to **produce one unit** of product is as follows:

Material X	60 units	Rs. 15 per unit	= 900
Material Y	80 units	Rs.20 per unit	= 1600
Material Z	100 units	Rs. 25 per unit	= 2500
	240 units		5,000

During the month of April, **10 units were actually produced** and consumption was as follows:

Material X	640 units	Rs. 17.50 per unit	= 11,200
Material Y	950 units	Rs.18.00 per unit	= 17,100
Material Z	870 units	Rs. 27.50 per unit	= 23,925
	2460 units		52,225

Calculate all material variances.

Q.4 XYZ Ltd. manufactures a particular product the standard cost of which is as under;

Calculate variance:

Material	Units	Price	Amount
M 1	100	2.00	Rs.200
M 2	<u>200</u>	1.70	Rs.340
Less Normal wastage	-30		
Production	270		Rs.540

Actual result in a period was as follows:

Material	Units	Price	Amount
M 1	215	1.80	Rs.387
M 2	<u>385</u>	2.00	Rs.770
	600		
Less Normal wastage	-70		
Production	530		Rs.1157

Calculate Variances.

(Study Material)

Q.5 J.K. Ltd. manufactures NXE by mixing three raw materials. For every batch of 100 kgs. of NXE, 125 kgs. of raw materials are used. In April, 2008, 60 batches were prepared to produce an output of 5,600 kgs. of NXE. The standard and actual particulars for April, 2008, are as follows:

Raw Materials	Standard		Actual		Quantity of Raw Material Purchased
	Mix %	Price per Kg Rs.	Mix %	Price per Kg Rs.	Kg.
A	50	20	60	21	5,000
B	30	10	20	8	2,000
C	20	5	20	6	1,200

Calculate all variances.

(Nov.2000)

Q.6 A company produces a finished product by using three basic raw materials.

The following standards have been set-up for raw materials:

Materials	Standard Mix in %	Standard price per kg. In Rs.
A	25	4
B	35	3
C	40	2

The standard loss in process is 20% of input. During a particular month, the company produced 2,400 kg of finished product. The detail of stock and purchased for the months is as under:

Material	Opening stock	Closing stock (Kgs.)	Purchases during the month	
			Qty. In kgs.	Cost in Rs.
A	200	350	800	3,600
B	150	200	1,000	3,500
C	300	200	1,100	1,980

The opening stock is valued at standard cost.

Compute:**(i) Material price and material cost variance, when:**(a) Variance is calculated at the point of issue of '**first in first out**' basis.(b) Variance is calculated at the point of issue of '**Last in first out**' basis.**(ii) Material usage variance.****(iii) Material Mix variance, and****(iv) Material yield variance.**

LABOUR VARIANCE

(Study Material)**Q.7** 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 the Variances.

(CA Final)**Q.8 A firm gives you the following data:**

Standard time per unit	2.5 hours
Actual hours paid	2,000 hours
Standard rate of pay	Rs. 2 per hour

25 % of the actual hours have been lost as idle time.

Actual output	1,000 units
Actual wages	Rs. 4,500

Calculate the Labour variance.

Q.9 Skilled labour is used to produce a toy. It was budgeted that each toy will require 3 hours of skilled labour @ Rs.10 per hour. During a month 500 pieces of toy was produced using 1600 hours of skilled labour by paying Rs.15, 000.

Calculate labour variances.**(Study Material)****Q.10 A gang of workers normally consist the followings:**

Workers	No. of Worker	Standard Hourly Rate
Skilled	10	.75P
Semi Skilled	5	.50P
Unskilled	5	.40P

In a normal working week of 40 hours the gang is expected to produce 1000 units of output. In a certain week, the gang produced 1000 units and consists the followings:

Workers	No. of Worker
Skilled	13
Semi Skilled	4
Unskilled	3

Actual wages Rs.450 and actual hours worked 720. Assuming that each worker worked the same hours, **compute variances.**

Q.11 A gang of workers normally consists the followings:

Workers	No. of Worker	Standard Hourly Rate
---------	---------------	----------------------

Men	30	.80P
Women	15	.60P
Boys	10	.40P

In a normal week of 40 hours, the gang is expected to produce 2000 units of output. During the week ended 31st December 2009, the gang consists;

Workers	No. of Worker	Actual Hourly Rate
Men	40	.70P
Women	10	.65P
Boys	5	.30P

4 hours were lost due power breakdown. Actual output 1600 units.

Compute gang composition variance and other variances.

(Study Material)

Q.12 The following standards have been set to manufacture a product:

Direct Material:		Rs.
2 units of A	Rs. 4 per unit	8.00
3 units of B	Rs. 3 per unit	9.00
15 units of C	Rs. 1 per unit	<u>15.00</u>
		32.00
Direct Labour: 3 hours @ 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. Direct material costs were as follows:

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

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

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

The company worked 17,500 direct labour hours during the year. For 2,500 of these hours, the company paid at Rs.12 per hour while for the remaining, the wages were paid at standard rate. Calculate materials price variance and usage variance and labour rate and efficiency variances.

VARIABLE OVERHEAD VARIANCE**(CA Final)****Q.13 XYZ Company** has established the following standards for variable factory overhead.

Standard hours per unit 6 hours

Variable overhead per hour Rs. 2/-

The actual data for the month are as follows:

Actual variable overheads incurred Rs. 2, 00,000

Actual output (units) 20,000

Actual hours worked 1, 12,000

(Ans: Variable O/H Var 40000F, Exp Variance 24000F, Eff Var 16000F)**Q.14 Compute variable overhead variances from following:**

	Budgeted	Actual
Production	300 units	250 units
Variable OH	Rs.7,800	Rs.7,000

Actual time taken 4,500 hours.

Standard time for one unit 20 hours.

FIXED OVERHEAD VARIANCE**Q.15 Data for February 1995 of A Ltd. using standard costing are:**

	Budgeted	Actual
Days	20	22
Men Hours	8,000	8,600
Production	10 unit per hour.	850 units
Fixed OH	0.50 P per man hour	Rs. 3,600

Calculate Variances.**(Study Material)****Q.16 ABC Ltd.** has furnished you the following information for the month of August:

	Budgeted	Actual
Outputs (units)	30,000	32,500
Hours	30,000	33,000

Fixed O/H	Rs.45,000	50,000
Variable O/H	Rs.60,000	68,000
Working days	25	26
Calculate Overhead variances		

(Study Material)

Q.17 Following information is available from the records of a factory:

	Budgeted	Actual
Fixed O/H for June,2010	Rs. 10,000	Rs. 12,000
Production in June, 2010	2,000	2,100
Standard time per units(Hours)	10	—
Actual hours worked in June	—	22,000

Compute:

- (i) Fixed overhead cost Variance,
- (ii) Expenditure variance,
- (iii) Volume variance.

Q.18 A Company producing X and Y uses standard costing. The standard overhead content of each product is X Rs.3 per unit and Y Rs.2.25 per unit. The budgeted overhead is Rs.860 and budgeted time is 3,440 hours. Actual data output X 200 units and Y 100 units. Actual time 3,200 hours and actual overhead Rs.875.

Compute overhead variances including overhead volume variance and overhead efficiency variance.

(Study Material)

Q.19 A company has a normal capacity of 120 machines, working 8 hours per day of 25 days in a month. The fixed overheads are budgeted at Rs.1, 44,000 per month. The standard time required to manufacture one unit of product is 4 hours.

In April, 2008, the company worked 24 days of 840 machine hours per day and produced 5,305 units of output. The actual fixed overheads were Rs.1, 42,000.

Compute:

- (i) Expense variance
- (ii) Volume variance
- (iii) Total fixed overheads variance.

Q.20 In a factory budgeted output for a year were fixed at 1, 20,000 units and budgeted overheads for the year were: fixed Rs.12, 000, variable Rs.6, 000 and semi-variable Rs.1, 800. Actual production in a month was 8,000 units. During the month actual working days were 19 against the budgeted 20 days. Actual overhead fixed Rs.1090 variable Rs.480 semi-variable Rs.192. Compute variance assuming semi-variable overheads are 60% fixed & 40% variable.

(Study Material)

Q.21 The following data has been collected from the cost records of a unit for computing the various fixed overhead variances for a period:

Number of budgeted working days	25
Budgeted man-hours per day	6,000
Output (budgeted) per man hour (in units)	1
Fixed O/H cost as budgeted	Rs.1,50,000
Actual number of working days	27
Actual man-hours per day	6,300
Actual output per man-hour (in units)	0.9
Actual fixed O/H incurred	Rs.1,56,000

Calculate fixed overhead variances

- a) Expenditure Variance
- b) Volume Variance
- c) Fixed Cost Variance

(May 2000)

Q.22 A company manufacturing two products uses standard costing system. The following data relating to April, 2000 have been furnished to you:

Standard Cost Per Units	A (Rs.)	B (Rs.)
Direct Material	2	4

Direct Wages	8	6
Factory Overheads	16	12
	26	22

Units processed/in process

Beginning of the month: All materials applied and 50% complete in respect of labour and overheads

4,000 12,000

End of the month: All materials applied and 80% complete in respect of labour and overheads

8,000 12,000

Units completed and transferred to warehouse during the month

16,000 20,000

You may use **average cost method to analyses**.

The following were the actual costs recorded during the month:

Direct materials purchased at standard price amount to Rs.2, 00,000 and actual cost of which Rs.2, 20,000. Direct materials used for consumption at standard price amount to Rs.1, 75,000.

Direct wages for actual hours worked at standard wages rate were Rs.4, 20,000 and at actual wage rates were Rs.4, 12,000.

Fixed overheads budgeted were Rs.8, 25,000 and actual fixed overheads incurred were Rs.8, 50,000.

Required:

- (i) Direct Material Price Variance at the point of consumption and at the point of purchase.
- (ii) Direct Material Usage Variance.
- (iii) Direct Wages Rates and Efficiency Variance.
- (iv) Fixed Overheads Volume and Expenditure Variance.
- (v) Standard Cost of WIP at the end of the months.

SALES VARIANCE**Q.23 Compute Sales value & Sales margin variances:**

Product	Bud. Qty	Bud. Price Per unit	Actual Q.	Actual price	St. Cost per unit
A	1,200	5.00	2,000	4.50	3.00
B	800	2.50	1,000	2.00	1.50

(Nov.1998)

Q.24 The budgeted and the actual sales for a period in respect of three products are given below:

Budgeted figures product	Quantity	Price (Rs.)	Value Rs.
A	1,000	5	5,000
B	750	10	7,500
C	<u>500</u>	15	<u>7,500</u>
	<u>2,250</u>		<u>20,000</u>

Actual product	Quantity	Price (Rs.)	Value Rs.
A	1,200	6	7,200
B	700	9	6,300
C	<u>600</u>	14	<u>8,400</u>
	<u>2,500</u>		<u>21,900</u>

Calculate Sales Variances.

Q.25 A company uses standard costing system. The sales data for a period are as under:

Product	Budgeted sales Units	Budgeted selling Price per unit	Actual sales Units	Actual sales Value
A	1,280	20	650	12,350
B	3,200	12	3,900	50,700
C	1,920	16	1,950	29,250

The Cost data are as under:

	A	B	C
Standard cost per unit	Rs.16	10	13
Actual cost per unit	Rs.18	12	13

You are required to calculate the following for the period:

- (i) Gross margin total sales variance.
- (ii) Gross margin sales volume variance.
- (iii) Gross margin sales Mix variance.
- (iv) Gross margin sales quantity variance.
- (v) Sales price variance.
- (vi) Total cost variance.

OVERHEAD VARIANCE**(Study Material)**

Q.26 The Overhead expenses budget for a factory producing to a capacity of 200 units per month is as follows:

Description of Overheads	Fixed Cost per unit in Rs.	Variable Cost per unit in Rs.	Total Cost per unit in Rs.
Power & Fuel	1,000	500	1,500
Repair & Maintenance	500	250	750
Printing & Stationary	500	250	750
Other Overheads	1,000	500	1,500
	3,000	1,500	4,500

The factory has actually produced only 100 units in a particular month. Details of overheads actually incurred have been provided by the accounts department and are as follows:

Description of Overheads	Actual Cost (In Rs.)
Power & Fuel	4,00,000
Repair & Maintenance	2,00,000
Printing & Stationary	1,75,000
Other Overheads	3,75,000

Calculate:

- ✓ Production Volume Variance
- ✓ Overhead Expenses Variance

(Study Material)

Q.27 XYZ Company has established the following standards for the factory overheads:

Variable Overheads	Rs.10
Fixed Overheads per month	Rs. 1,00,000

Capacity of the plant 20,000 units per month.

The actual data for the month are as follows:

Actual Overheads Incurred	Rs.3,00,000
Actual Output(units)	15,000 units

Required:

- ✓ Production Volume Variance
- ✓ Overhead Expenses Variance

ADVANCE PROBLEMS

Q.28 An engineering company manufactures a single product whose standard cost structure is as follows:

	Rs.
Direct material 2.4 kg at Rs.30 per kg	72.00
Direct labour 6 hour at Rs.4 per hour	24.00
Factory overhead 6 hours at Rs.0.75 per hour	<u>4.50</u>
	<u>100.50</u>

The factory overhead is based on the following flexible budget:

Level	80%	90%	100%	110%
Production (units)	6,000	6,750	7,500	8,250
	Rs.	Rs.	Rs.	Rs.
Variable overheads	18,000	20,250	22,500	24,750
Fixed overheads	<u>11,250</u>	<u>11,250</u>	<u>11,250</u>	<u>11,250</u>
	<u>29,250</u>	<u>31,500</u>	<u>33,750</u>	<u>36,000</u>

Actual data for the month of January 2010:

Budgeted production	7,500 units
Material used	19,240 kg at Rs.31 per kg
Direct labour	46,830 hours at Rs.4.20 per hour
Actual factory overhead	Rs.36,340 (fixed Rs,11,250)
Production completed	7,620 units

Details of work-in-progress

Opening	120 units material fully supplied 50% completed
Closing	100 units material fully supplied 50% completed

Compute variances.

(CA Final)

Q.29 The summarised results of a company for the two years ended 31st December, 2009 and 2008 are given below:

	2009 (Rs.lacs)	2008 (Rs.lacs)
Sales	770	600
Direct materials	324	300
Direct wages	137	120
Variable overheads	69	60
Fixed overheads	150	80
Profit	90	40

As a result re-organization of production methods and extensive of production methods and extensive advertisement campaign used the company was able to secure an increase in the selling prices by 10% during the year 2009 as compared to the previous year.

In the year 2008, the company consumed 1, 20,000 kg of raw-materials and used 24, 00,000 hours of direct labour. In the year 2009 the corresponding figures were 1, 35,000 kg of raw-materials and 26, 00,000 hours of direct labour.

You are required to: Use the information given for the year 2008, as the base year information to analyse the result of the year 2009 and to show in a form suitable to the management the amount each factor has contributed by way of price, usage and volume to the change in profit in 2009.

Q.30 The trading result of ZED Ltd. for 2008-09 & 2009-10 are as follows:

	2008-09 (Rs.)	2009-10 (Rs.)
Material	1,60,000	2,05,200
Wages	96,000	1,32,000
Variable overheads	40,000	46,000
Fixed overheads	<u>50,000</u>	<u>54,800</u>
Total costs	3,46,000	4,38,000
Profit	<u>54,000</u>	<u>90,000</u>
Sales	<u>4,00,000</u>	<u>5,28,000</u>

Selling price was enhanced by 10% in 2009-10. Material prices and wage rates too have increased by 8% & 10% respectively.

Prepare a statement showing how much each factor has contributed to the variation in profit.

(PE-II June 1988, CA final)

Q.31 One kilogram of product K requires two chemicals 'A' & 'B'. The following were the details of product K for the month of June, 2009:

- Standard mix Chemical 'A' 50% & Chemical 'B' 50%.
- Standard price per kilogram of Chemical 'A' Rs.12 and Chemical 'B' Rs.15.
- Actual input of Chemical 'B' 70 kilogram.
- Actual price per kilogram of Chemical 'A' Rs.15.
- Standard normal loss 10% of total input.

(f) Material cost variance total Rs.650 (A)

(g) Material yield variance total Rs.135 (A)

You are required to calculate:

(1) Material mix variance total

(2) Material usage variance total

(3) Material price variance total

(4) Actual loss of actual input

(5) Actual input of Chemical 'A'

(6) Actual price per kilogram of Chemical 'B'

Q.32 Compute the missing data indicated by the questions marks from the following:

	<u>Product R</u>	<u>Product S</u>
Sales quantity		
Standard (units)	?	400
Actual (units)	500	?
Price/unit	Rs.	Rs.
Standard	12	15
Actual	15	20
Sales price variances	?	?
Sales volume variance	1,200 F	?
Sales value variance	?	?

Sales mix variance for both the products together was Rs.450 F, "F" denotes favourable.

(Practice Manual, Nov.2001, May2008)

Q.33 The Managing Director of your company has been given the following statement showing the result for august, 2001.

Month ending 31st August 2001

	Master budget	Actual	Variance
Units produced and sold	10,000	9,000	
	Rs.	Rs.	Rs.
Sales	<u>40,000</u>	<u>35,000</u>	<u>5,000A</u>
Direct materials	10,000	9,200	800F
Direct wages	15,000	13,100	1,900F
Variable overhead	5,000	4,700	300F
Fixed overhead	5,000	4,900	100F
Total cost	35,000	31,900	3,100
Net profit	5,000	3,100	1,900

The standard cost of the product is as following.

Per units

Direct material (1 kg @ Rs.1 per kg)	1.00
Direct wages (1 hour @ Rs.1.50)	1.50
Variable overhead (1hour @ Rs.0.50)	0.50

Actual result for the month showed that 9,800 kgs of material were used and 8,800 labour hours were recorded.

Required:

- Prepare a flexible budgeted for the month and compare with actual results
- Calculate the variables which have arisen.

(Practice Manual, Nov 2007)

Q.34 United Limited operates a system of standard costing in respect of one of its products which is manufactured within a single cost centre.

The standard cost card of a product is as under: Unit cost (Rs.)

Standard material	5 kgs @ Rs. 4.20	21.00
Direct labour	3 hours @ Rs. 3.00	9.00
Factory overheads	Rs. 1.20 per labour hour	<u>3.60</u>

Total manufacturing cost 33.60

The production schedule for the month of June, 2007 required completion of 40,000 units. However 40,960 units were completed during the month without opening and closing work in process inventories.

Purchases during the month 2,25,000 kgs of material at the rate of Rs. 4.50 per kg.

Production and sales records for the month showed the following actual results:

Material used	2,05,600 kgs.
Direct labour 1,21,200 hours; cost incurred	Rs. 3,87,840
Total factory overhead cost incurred	Rs. 1,00,000
Sales	40,000 units

Selling price to be so fixed as to allow a mark-up of 20 % on selling price.

Required:

- (i) Calculate material variances based on consumption of material.
- (ii) Calculate labour variances and the total variances for factory overheads.
- (iii) Prepare income statement for June, 2007 showing actual gross margin.
- (iv) An incentive scheme is in operation in the company whereby employees are paid a bonus of 50% of direct labour hour saved at standard direct labour hour rate. Calculate the bonus amount.

BUDGETARY CONTROL

(Study Material)

Q.1 A factory which expects to operate 7,000 hours, i.e., at 70% level of activity, furnishes details of expenses as under:

Variable expenses	Rs. 1,260
Semi-variable expenses	Rs. 1,200
Fixed expenses	Rs. 1,800

The semi-variable expenses go up by 10% between 85% and 95% activity and by 20% above 95% activity. **Construct a flexible budget for 80, 90 and 100 per cent activities.**

(Study Material)

Q.2 A department of Company X attains sale of **Rs. 6, 00,000 at 80 per cent** of its normal capacity and its expenses are given below:

Administration Cost:	Rs.
Office salaries	90,000
General expenses	2% of sales
Depreciation	7,500
Rates & Taxes	8,750
Selling Cost:	
Salaries	8% of sales
Travelling expenses	2% of sales
Sales office expenses	1% of sales
General expenses	1% of sales
Distribution Costs:	
Wages	15,000
Rent	1% of sales
Other expenses	4% of sales

Draw up flexible administration, selling and distribution costs budget, operating at 90%, 100% and 110% of normal capacity.

(Study Material)

Q.3 Action Plan Manufacturers **normally produce 8,000 units** of their product in a month, in their Machine Shop. For the month of January, they had planned for a production of 10,000

units. Owing to a sudden cancellation of a contract in the middle of January, they could only produce 6,000 units in January.

Indirect manufacturing costs are carefully planned and monitored in the Machine Shop and the Foreman of the shop is paid a 10% of the savings as bonus when in any month the indirect manufacturing cost incurred is less than the budgeted provision.

The Foreman has put in a claim that he should be paid a bonus of Rs. 88.50 for the month of January. The Works Manager wonders how anyone can claim a bonus when the Company has lost a sizeable contract. The relevant figures are as under:

Indirect Manufacturing Cost	Expenses for a normal month	Planned for January	Actuals cost for January
	Rs.	Rs.	Rs.
Salary of foreman	1,000	1,000	1,000
Indirect labour	720	900	600
Indirect material	800	1,000	700
Repair & maintenance	600	650	600
Power	800	875	740
Tools consumed	320	400	300
Rates & Taxes	150	150	150
Depreciation	800	800	800
Insurance	100	100	100
	5,290	5,875	4,990

Do you agree with the Works Manager? Is the Foreman entitled to any bonus for the performance in January? Substantiate your answer with facts and figures.

(May 1999)

Q. 4 Goodluck Ltd. is currently operating at **75%** of its capacity. In the past two years, the level of operations was 55% and 65% respectively. Presently the production is 75,000 units. The company is planning for 85% capacity level during 1999-2000. The cost details (amount in Rs.) are as follows:

Particulars	55%	65%	75%
Direct materials	11,00,000	13,00,000	15,00,000
Direct labour	5,50,000	6,50,000	7,50,000
Factory overheads	3,10,000	3,30,000	3,50,000
Selling overheads	3,20,000	3,60,000	4,00,000
Administrative overheads	1,60,000	1,60,000	1,60,000
Total cost	24,40,000	28,00,000	31,60,000

Profit is estimated at 20% on sales. The following increases in costs are expected during the year: Direct materials-8%; Direct labour-5%; Variable factory OH-5%; Variable selling OH-8%; Fixed factory OH-10%; Fixed selling OH-15%; Administrative OH-10%.

Prepare flexible budget for the next year at 85% level of capacity. Also ascertain the profit and contribution.

(May2000)

Q.5 A company prepared the following budget for a year:

	% to total sales
Direct materials	40
Direct labour	20
Factory overheads—Variable	10
Fixed	10
Selling and Adm. Overheads –Variable	5
Fixed	12
Profit	3
Sales	100

After evaluating the half-yearly performance, it was observed that the company would be able to achieve only 80% of the original budgeted sales.

The revised budgeted sale as envisaged above was estimated at Rs.1080 lacs after taking into account a reduction in the selling price by 10%.

You are required to prepare a statement showing the breakup of the original and revised budget for the year.

(Study Material)

Q.6 Float glass Manufacturing Company requires you to present the Master budget for the next year from the following information:

Sales:		
Toughened Glass		Rs. 6,00,000
Bent Glass		Rs.2,00,000
Direct material cost		60% of sales
Direct wages	20 workers	Rs. 150 per month
Factory overheads		
Indirect Labour-		

Works Manager	Rs. 500 per month
Foreman	Rs. 400 per month
Stores & spares	2.5% on sales
Depreciation on machinery	Rs.12,600
Light & Power	Rs.3,000
Repairs & maintenance	Rs.8,000
Others sundries	10% on direct wages

Administration, selling and distribution expenses Rs. 36,000 per year.

(Study Material)

Q.7 The cost accountant of manufacturing company provides you the following details for year 2007 :

Direct Materials	1,75,000	Other Variable costs	80,000
Direct Wages	1,00,000	Other fixed costs	80,000
Fixed factory overheads	1,00,000	Profit	1,15,000
Variable factory overheads	1,00,000	Sales	7,50,000

During the year, the company manufactured two products A and B and the output and costs were :

	A	B
Output (units)	2,00,000	1,00,000
Selling price per unit	Rs. 2.00	Rs. 3.50
Direct materials per unit	Re. 0.50	Re.0.75
Direct wages per unit	Re. 0.25	Re.0.50

Variable factory overhead are absorbed as a percentage of direct wages. Other variable costs have been computed as : Product A Re.0.25 per unit; and B Re.0.30 per unit.

During 2008, it is expected that the demand for product A will fall by 25 % and for B by 50%.

It is decided to manufacture a further product C, the cost for which are estimated as follows :

	Product C
Output (units)	2,00,000
Selling price per unit	Rs.1.75
Direct materials per unit	Re.0.40
Direct wages per unit	Re.0.25

It is anticipated that the other variable costs per unit will be the same as for product A.

Prepare a budget to present to the management, showing the current position and the position for 2008. Comment on the comparative results.

(Study Material)

Q.8 A single product company estimated its sales for the **next year quarter wise** as under:

Quarter	Sales (units)
I	30,000
II	37,500
III	41,250
IV	45,000

The **opening stock** of finished goods is 10,000 units and the company expects to maintain the **closing stock** of finished goods at 16,250 units at the end of the year. The production pattern in each quarter is based on 80% of the sales of the current quarter and 20% of the sales of the next quarter.

The opening stock of raw materials in the beginning of the year is 10,000 kg. and the closing stock at the end of the year is required to be maintained at 5,000 kg. Each unit of finished output requires 2 kg. of raw materials.

The company proposes to purchase the entire annual requirement of raw materials in the first three quarters in the proportion and at the prices given below:

Quarter annual requirement in quantity	Purchase of raw materials % of total	Price per kg
I	30%	2
II	50%	3
III	20%	4

The value of the opening stock of raw materials in the beginning of the year is Rs. 20,000.

You are required to present the following for the next year, quarter wise:

- (i) Production budget (in units).
- (ii) Raw material consumption budget (in quantity).
- (iii) Raw material purchase budget (in quantity and value).
- (iv) Priced stores ledger card of the raw material using First in First out method.

(Study Material)

Q.9 A company is engaged in the manufacture of specialised sub-assemblies required for certain electronic equipments. The company envisages that in the forthcoming month, December, 2006, **the sales will take a pattern in the ratio of 3: 4: 2** respectively of subassemblies, ACB, MCB and DP.

The following is the schedule of components required for manufacture:

Sub-assembly	Selling price	<u>Component requirements</u>			
		Base board	IC08	IC12	IC26
ACB	520	1	8	4	2
MCB	500	1	2	10	6
DP	350	1	2	4	8
Purchase price		Rs.60	20	12	8

The direct labour time and variable overheads required for each of the sub-assemblies are:

	<u>Labour hour per sub-assembly</u>		Variable Overheads per sub-assembly
	Grade A	Grade B	
ACB	8	16	36
MCB	6	12	24
DP	4	8	24
Direct Wages rate per hour	Rs.5	4	-

The labourers work 8 hours a day for 25 days a month.

The opening stocks of sub-assemblies and components for December, 2006 are as under:

<u>Sub-assembly</u>		<u>Components</u>	
ACB	800	Base board	1,600
MCB	1,200	IC08	1,200
DP	2,800	IC12	6,000
		IC26	4,000

Fixed overheads amount to Rs. 7, 57,200 for the month and a monthly profit target of Rs. 12 lacs has been set.

The company is eager for a reduction of closing inventories for December, 2006 of subassemblies and components by 10% of quantity as compared to the opening stock.

Prepare the following budgets for December 2006:

- Sales budget in quantity and value.
- Production budget in quantity
- Component usage budget in quantity.
- Component purchase budget in quantity and value.
- Manpower budget showing the number of workers and the amount of wages payable.

(Study Material)

Q.10 P. Ltd. manufactures two products using one type of material and one grade of labour.

Shown below an extract from the company's working papers for the next period's budget:

	Product A	Product B
Budgeted Sales(units)	3,600	4,800
Budgeted material consumption per product (kg)	5	3
Budgeted material cost Rs.12 per kg		
Standard hours allowed per product	5	4
Budgeted wages rate Rs.8per hour		

Overtime premium is 50% and is payable, if a worker works for more than 40 hours a week. There are 90 direct workers.

The target productivity ratio (or efficiency ratio) for the productive hours worked by the direct workers in actually manufacturing the products is **80%**; in addition the non-productive down time is budgeted at 20% of the productive hours worked.

There are twelve 5 day weeks in the budget period and it is anticipated that sales and production will occur evenly throughout the whole period.

It is anticipated that stock at the beginning of the period will be:

Product A 1,020 units; Product B 2,400 units; raw material 4,300 kgs.

The target closing stocks, expressed in terms of anticipated activity during the budget period are: Product A 15 days sales; Product B 20 days sales; Raw material 10 days consumption.

Required: Calculate the material purchases budget and the wages budget for the direct workers, showing the quantities and values, for the next period.

Q.11 Manufactures Ltd. produce three products from three produce from three basis raw materials in three departments. The company operates budgetary control system and makes its stock to finished goods on a total cost basis. From the following data you are required to produce for the month of July 1996 the following budgets.

- (a) Production
- (b) Material usage
- (c) Purchases
- (d) Profit and loss account for each product and in total.

Budgeted data for July 1986

	Product		
	A	B	C
Sales	Rs.15,00,000	Rs.10,80,000	Rs.16,80,000
Stock of finished products at July 1.1996 in units	3,000	2,000	2,500

	Department		
	I	II	III
Production overhead	Rs.2,39,000	Rs.2,01,300	Rs.3,91,200
Direct labour hours	47,800	67,100	65,200
	Direct material		
	M1	M2	M3
Stock at July 1.1986 (in units)	24,500	20,500	17,500

Stock on 31st July, 1986 will be reduced as follows-Raw Material by 10% & Finished Product by 20%. Fixed production overhead is charged on the basis of direct labour hour basis. Administration cost is absorbed on products at the rate of 20% of production cost while selling & distribution cost @ 40% of production cost.

Profit is budgeted as a percentage of total cost as follows:

Product A 25%, Product B 12 ½ % & Product C 16 2/3%.

Standard cost data, per unit of product:

		Product		
	Price per unit	A	B	C
Direct Material:	Rs.	Units	Units	Units
M1	2.00	5	--	12
M2	4.00	--	10	9
M3	1.00	5	5	--
	Rate per			
Direct wages:	hour	Hours	Hours	Hours
	Rs.			
Department I	2.50	4	2	2
Department II	2.00	6	2	3
Department III	1.50	2	4	6
Other Variable Cost		Rs.10	Rs.20	Rs.15

(Study Material)

Q.12 A firm is engaged in the manufacture of two products A & B. Product A uses one unit of component P and two units of components Q product B uses two unit of component P one unit of component Q and two units of component R component R which is assembled in the factory uses one unit of component Q. Component P & Q are purchased from the market.

The firm has prepared the following forecast of sales and inventory for the next year.

Products	A	B
Sales (units)	8,000	15,000

Inventories:(units)

At the end of the year	1,000	2,000
At the beginning year	3,000	5,000

The production of both the products and the assembling of the component R will be spread out uniformly throughout the year.

The firm at present orders its inventory of components P & Q in quantities equivalent to 3 month's consumption. The firm has been advised that savings in the provisioning of components can arise by changing over to the ordering system based on economic ordering quantities. The firm has complied the following data relating to the two components.

	P	Q
Component usage per annum	30,000	48,000
Price per unit	Rs.2.00	0.80
Order placing cost per order	Rs.15.00	15.00
Carrying costs p.a.	20%	20%

Required:

- Prepare a budget of production and requirements of components for the next year.
- Find the economic order quantity.
- Based on the economic order quantity calculated in (ii) above, calculate the savings arising from switching over to the new ordering system both in terms of cost and reduction in working capital.

Q.13 Better Ltd. produces and markets a very popular product called P. The company interested in presenting its budget for the second quarter of 1997. The following information are made available for this purpose:

- It expects to sell 50,000 bags of P during the second quarter of 1997 at the selling price of Rs.9 per bag.
- Each bag of P requires 2.5 kg of a raw material called Q and 7.5 kg of raw material called R.

(c) Stock levels are planned as follows:

	Beginning of quarter	End of quarter
Finished bags of P (Nos.)	15,000	11,000
Raw material Q (kgs)	32,000	26,000
Raw material R (kgs)	57,000	47,000
Empty bags (Nos.)	37,000	28,000

- Q costs Rs.1.20 per kg, R cost 20 paise per kg, and empty bag costs 80 paise each.

- (e) It requires 9 minutes of direct labour time to produce and fill one bag of P; labour cost is Rs.5 per hour.
- (f) Variable manufacturing costs are Rs.0.45 per bag. Fixed manufacturing costs Rs.30, 000 per quarter.
- (g) Variable selling and administration expenses are 5% of sales and fixed administration and selling expenses are Rs.25, 000 per quarter.

You are required to:

- (i) Prepare a production budget for the said quarter.
- (ii) Prepare a raw material purchase budget for Q, R and empty bags for the said quarter in quantity as well as in rupees.
- (iii) Compute the budgeted variable cost to produce one bag of P.
- (iv) Prepare a statement of budgeted net income for the said quarter and show both per unit and total cost data.

Q.14 Solo products Ltd. manufactures and sells a single product and has estimated a sales revenue of Rs.126 lakhs this year based on a 20% profit on selling price. Each unit of the product requires 3 lbs of material P and 1-1/2 lbs of material Q for manufacture as well as processing time of 7 hours in the machine shop and 2-1/2 hours in the assembly section. Overheads are absorbed at a blanket rate of 33-1/3% on direct labour. The factory works 5 days of 8 hours a week in a normal 52 weeks a year. On an average statutory holidays, leave and absenteeism and idle time amount to 96 hours. 80 hours and 64 hours respectively, in a year.

The other details are as under:

Purchase Price		Material P	Rs. 6 per lb
		Material Q	Rs.4 per lb
Comprehensive Labour Rate		Machine Shop	Rs. 4 per hour
		Assembly	Rs. 3.20 per hour
No. Of Employees		Machine Shop	600
		Assembly	180
	Finished Goods	Material P	Material Q
Opening Stock	20,000 units	54,000 lbs	33,000 lbs
Closing Stock (Estimates)	25,000 units	30,000 lbs	66,000 lbs

You are required to calculate:

- (a) The number of units of the product proposed to be sold.
- (b) Purchases to be made of materials P and Q during the year in Rupees.
- (c) Capacity utilisation of machine shop & assembly section along with your comments.

INTEGRATED & NON- INTEGRATED ACCOUNTS

NON INTEGRATED ACCOUNTS

(Study Material, Practice Manual)

Q.1 As on 31st March, 2006, the following balances existed in a firm's Cost Ledger:

	Dr.	Cr.
	Rs.	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>6,65,220</u>
	<u>6, 75,745</u>	<u>6, 75,745</u>

During the next three months the following items arose:

	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; write up the accounts and schedule the balances, stating what each balance represents.

(Study Material)

Q.2 From the following details show the necessary accounts in the Cost Ledger

Materials	Work-in- Progress	Finished Stock
Rs.	Rs.	Rs.

Opening Balance	8,000	5,000	10,000
Closing Balance	11,000	9,000	12,000

Transactions during the period:**Rs.**

Materials purchased	25,000
Wages paid	10,000
	(including Rs. 2,000 indirect)
Overheads incurred	8,000
Overheads absorbed	9,000
Sales	50,000

(Study Material)

Q.3 On 31st March, 2006 the following balances were extracted from the books of the Supreme Manufacturing Company:

	Dr. Rs.	Cr. Rs.
Stores Ledger Control A/c	35,000	
Work-in-Progress Control A/c	38,000	
Finished Goods Control A/c	25,000	
Cost Ledger Control A/c	—	<u>98,000</u>
	98,000	98,000

The following transactions took place in April 2006:

Raw Materials:

Purchased	95,000
Returned to suppliers	3,000
Issued to Production	98,000
Returned to stores	3,000
Productive wages	40,000
Indirect labour	25,000
Factory overhead expenses incurred	50,000
Selling and Administrative expenses	40,000
Cost of finished goods transferred to warehouse	2,13,000
Cost of Goods sold	2,10,000
Sales	3,00,000

Factory overheads are applied to production at 150% of direct wages, any under/over absorbed overhead being carried forward for adjustment in the subsequent months. All administrative and selling expenses are treated as period costs and charged off to the Profit and Loss Account of the month in which they are incurred.

Show the following Accounts:

- (a) Cost Ledger Control A/c
- (b) Stores Ledger Control A/c
- (c) Work-in-Progress Control A/c
- (d) Finished Goods Stock Control A/c
- (e) Factory Overhead Control A/c
- (f) Costing Profit and Loss A/c
- (g) Trial Balance as at 30th April, 2006.

(Study Material)

Q.4 Acme Manufacturing Co. Ltd. opens the costing records, with the balances as on 1st July, 2005 as follows:

	Rs.	Rs.
Material control A/c	1,24,000	
Work-in-progress A/c	62,500	
Finished Goods A/c	1,24,000	
Production Overheads A/c	8,400	
Administration Overhead		12,000
Selling and Distribution Overhead A/c	6,250	
General Ledger Control A/c	_____	<u>3,13,150</u>
	3,25,150	3,25,150

The following are the transactions for the quarter ended 30th September 2005:

	Rs.
Materials purchased	4, 80,100
Materials issued to jobs	4, 77,400
Materials to works maintenance	41,200
Materials to administration office	3,400
Materials to selling department	7,200
Wages direct	1, 49,300
Wages indirect	65,000
Transportation for incoming materials	8,400
Production overheads	2, 42,250
Absorbed overheads production	3, 59,100
Administration overheads	74,000
Administration allocation to production	52,900
Administration allocation to sales	14,800
Sales overheads	64,200
Sales overheads absorbed	82,000
Finished goods produced	9,58,400
Finished goods sold	9,77,300
Sales Realisation	14,43,000

Make up the various accounts as you envisage in the Cost Ledger and prepare a Trial Balance as at 30th September, 2005.

(Study Material)

Q.5 The following incomplete accounts are furnished to you for the month ended 31st October, 2005.

Stores Control Account		
1.10.05 To Balance	Rs. 54,000	
Work in Progress Control Account		
1.10.05 To Balance	Rs. 6,000	
Finished Goods Control Account		
1.10.05 To Balance	Rs. 75,000	
Factory Overheads Control Account		
Total debits for October 05	Rs. 45,000	
Factory Overheads Applied Account		
Cost of Goods Sold Account		
Creditors for Purchases Account		
	1.10.05 by Balance	Rs. 30,000

Additional information:

- (i) The factory overheads are applied by **using a budgeted rate based on Direct Labour Hours**. The budget for overheads for 2005 is Rs. 6,75,000 and the budget of direct labour hours is 4,50,000.
- (ii) The balance in the account of creditors for purchases on 31.10.05 is Rs. 15,000 and the payments made to creditors in October, 2005 amount to Rs. 1,05,000.
- (iii) The finished goods inventory as on 31st October, 2005 is Rs. 66,000.
- (iv) The cost of goods sold during the month was Rs. 1,95,000.
- (v) On 31st October, 2005 there was only one unfinished job in the factory. The cost records show that Rs. 3,000 (1,200 direct labour hours) of Direct Labour Cost and Rs. 6,000 of Direct Material Cost had been charged.
- (vi) A total of 28,200 direct labour hours were worked in October, 2005. All factory workers earn same rate of pay.
- (vii) All actual factory overheads incurred in October, 2005 have been posted.

You are required to find:

- (a) Materials purchased during October, 2005.

- (b) Cost of goods completed in October, 2005.
- (c) Overheads applied to production in October, 2005.
- (d) Balance of work in progress on 31st October, 2005.
- (e) Direct materials consumed during October, 2005.
- (f) Balance of Stores Control Account on 31st October, 2005.
- (g) Over absorbed or under absorbed overheads for October, 2005.

(Study Material, May 1986)

Q.6 A company operates on historic job cost accounting system, which is not integrated with the financial accounts. At the beginning of a month, the opening balances in cost ledger were:

	Rs. (in lakhs)
Stores Ledger Control Account	80
Work-in-Progress Control Account	20
Finished Goods Control Account	430
Building Construction Account	10
Cost Ledger Control Account	540

During the month, the following transaction took place:

Materials	– Purchased	40
	Issued to production	50
	Issued to general maintenance	6
	Issued to building construction	4
Wages	– Gross wages paid	150
	Indirect wages	40
	For building construction	10
	Works Overheads – Actual amount incurred (excluding items shown above)	160
	Absorbed in building construction	20
	Under absorbed	8
Royalty paid		5
Selling, distribution and administration overheads		25
Sales		450

At the end of the month, the stock of raw material and work-in-progress was Rs. 55 lakhs and Rs. 25 lakhs respectively. The loss arising in the raw material accounts is treated as factory

overheads. The building under construction was completed during the month. Company's gross profit margin is 20% on sales.

Prepare the relevant control accounts to record the above transactions in the cost ledger of the company.

(Study Material, Nov1998)

Q.7 The following balance was extracted from a company's ledger as on 31st December, 1997:

	Rs.	Rs.
Raw materials control A/c	48,836	
Work in progress control A/c	14,745	
Finished stock control A/c	21,980	
Nominal ledger control A/c	<u> </u>	<u>85,561</u>
	85,561	85,561

Further transaction took place during the following quarter as follows:

Factory overhead-allocated to WIP	11,786
Goods finished-at cost	36,834
Raw materials purchased	22,422
Direct wages-allocated to WIP	18,370
Cost of goods sold	42,000
Raw materials-issued to production	17,000
Raw materials-credited by suppliers	1,000
Inventory audit-raw material losses	1,300
WIP rejected (with no scrap value)	1,800
Customer's returns (at cost) of finished goods	3,000

Prepare all the Ledger Accounts in Cost Ledger.

(Practice Manual, May-2005, May2008)

Q.8 The following figures have been extracted from the cost records of a manufacturing unit:

	Rs.
Stores: Opening balance	32,000
Purchases of materials	1,58,000
Transfer from work in progress	80,000
Issues to work in progress	1,60,000
Issues to repairs and	20,000
Deficiencies found in stock taking	6,000
Work in progress: Opening balance	60,000
Direct wages applied	65,000
Overheads applied	2,40,000

Closing balance of WIP 45,000

Finished products:

Entire output is sold at a profit of 10% on actual cost from work in progress. Wages incurred Rs.70,000, overheads incurred Rs.2,50,000.

Items not included in cost records:

Income from investment Rs.10, 000. Loss on sale of capital assets Rs.20, 000.

Draw up store Control account, Work in progress Control account, Costing Profit & Loss account, Profit & Loss account and Reconciliation statements.

INTEGRATED ACCOUNTS

(Study Material, Nov1990)

Q.9 Dutta Enterprises operates an integral system of accounting. You are required to pass the Journal Entries for the following transactions that took place for the year ended 30th June, 2006.

(Narrations are not required.)

	Rs.
Raw materials purchased (50% on Credit)	6,00,000
Materials issued to production	4,00,000
Wages paid (50% Direct)	2,00,000
Wages charged to production	1,00,000
Factory overheads incurred	80,000
Factory overheads charged to production	1,00,000
Selling and distribution overheads incurred	40,000
Finished goods at cost	5,00,000
Sales (50% Credit)	7,50,000
Closing stock	Nil
Receipts from debtors	2,00,000
Payments to creditors	2,00,000

(Study Material)

Q.10 Bangalore Petrochemicals Co. keeps books on integrated accounting system. The following balances appear in the books as on 1st January, 2005.

	Dr. Rs.	Cr. Rs.
Stores control A/c	18,000	
Work-in-Progress A/c	17,000	
Finished goods A/c	13,000	
Bank A/c	10,000	
Creditors A/c		8,000
Fixed assets A/c	55,000	

Debtors A/c	12,000	
Share capital A/c		80,000
Depreciation provision A/c		5,000
Profit and loss A/c	_____	<u>32,000</u>
	1,25,000	1,25,000

Transactions for the year ended 31st December 2005 were as given below:

	Rs.	Rs.
Wages-direct	87,000	
Wages-indirect	<u>5,000</u>	92,000
Purchase of materials (on credit)		1,00,000
Materials issued to production		1,10,000
Materials for repairs		2,000
Goods finished during the year (at cost)		2,15,000
Sales (credit)		3,00,000
Cost of goods sold		2,20,000
Production overhead absorbed		48,000
Production overhead incurred		40,000
Administration overhead incurred		12,000
Selling overhead incurred		14,000
Payments of creditors		1,01,000
Payments of debtors		2,90,000
Depreciation of machinery		1,300
Prepaid rent (included in factory overheads)		300

Write up accounts in the integrated ledger and prepare a trial balance.

(Study Material, May1988)

Q.11 In the absence of the Chief Accountant, you have been asked to prepare a month's cost accounts for a company which operates a batch costing system fully integrated with the financial accounts. The following relevant information is provided to you:

	Rs.
Balances at the beginning of the month:	
Stores Ledger Control Account	25,000
Work-in-Progress Control Account	20,000
Finished Goods Control Account	35,000
Prepaid Production Overheads brought forward from previous month	3,000
Transactions during the month:	
Materials Purchased	75,000
Materials Issued:	Rs.
To Production	30,000

To Factory Maintenance	<u>4,000</u>	34,000
Materials transferred between batches		5,000
Total wages paid:	Rs.	
To Direct workers	25,000	
To Indirect workers	<u>5,000</u>	30,000
Direct wages charged to batches		20,000
Recorded non-productive time of direct workers		5,000
Selling and Distribution Overheads Incurred		6,000
Other Production Overheads Incurred		12,000
Sales		1,00,000
Cost of Finished Goods Sold		80,000
Cost of Goods completed and transferred into finished goods during the month		65,000
Physical value of work-in-progress at the end of the month		40,000
The production overhead absorption rate is 150% of direct wages charged to work-in-progress.		

Required:**Prepare the following accounts for the month:**

- (a) Stores Ledger Control Account.
- (b) Work-in-Progress Control Account.
- (c) Finished Goods Control Account.
- (d) Production Overhead Control Account.
- (e) Profit and Loss Account.

(Practice Manual, Nov.2003)

Q.12 BPR Limited keeps books on integrated accounting system. The following balance appear in the books as on April 1, 2002:

	Dr. (Rs.)	Cr. (Rs.)
Stores control A/c	40,950	---
Work in progress A/c	38,675	---
Finished goods A/c	52,325	---
Bank A/c	---	22,750
Creditors A/c	---	18,200
Fixed assets A/c	1,47,875	---
Debtors A/c	27,300	---
Share capital A/c	---	1,82,000
Provision for depreciation A/c	---	11,375
Provision for doubtful debts A/c	---	3,725
Factory overheads outstanding A/c	---	6,250
Pre-paid administration overheads A/c	9,975	---

Profit and loss A/c	---	72,800
	3,17,100	3,17,100

The transactions for the year ended March 31, 2003 were as given below:

	Rs.	Rs.
Direct wages	1,97,925	
Indirect wages	<u>11,375</u>	2,09,300
Purchase of materials (on credit)		2,27,500
Materials issued to production		2,50,250
Materials issued for repairs		4,550
Goods finished during the year (at cost)		4,89,125
Credit sales		6,82,500
Cost of goods sold		5,00,500
Production overheads absorbed		1,09,200
Production overheads paid during the year		91,000
Production overheads outstanding at the end of year		7,775
Administration overheads paid during the year		27,300
Selling overheads incurred		31,850
Payment to creditors		2,29,775
Payment received from debtors		6,59,750
Depreciation of machinery		14,789
Administration overheads outstanding at the end of year		2,225
Provision for doubtful debts at the end of the year		4,590

Required:

Write up accounts in the integrated ledger of BPR Limited and prepare a trial balance.

(Study Material, May1997)

Q.13A fire destroyed some accounting records of a company. You have been able to collect the following from the spoilt papers/records and as a result of consultation with accounting staff in respect of January, 2006:

(i) Incomplete Ledger Entries:

	Raw-Materials A/c		
	Rs.		Rs.
Beginning Inventory	32,000		
	Work-in-Progress A/c		
	Rs.		Rs.
Beginning Inventory	9,200	Finished Stock	1,51,000
	Creditors A/c		
	Rs.		Rs.
		Opening Balance	16,400
Closing Balance	19,200		

	Manufacturing Overheads A/c	
	Rs.	Rs.
Amount Spent	29,600	
	Finished Goods A/c	
	Rs.	Rs.
Opening Inventory	24,000	
	Closing Inventory	30,000

(ii) Additional Information:

- (1) The cash-book showed that Rs. 89,200 have been paid to creditors for raw-material.
- (2) Ending inventory of work-in-progress included material Rs. 5,000 on which 300 direct labour hours have been booked against wages and overheads.
- (3) The job card showed that workers have worked for 7,000 hours. The wage rate is Rs. 10 per labour hour.
- (4) Overhead recovery rate was Rs. 4 per direct labour hour.

You are required to complete the above accounts in the cost ledger of the company:

RECONCILIATION OF COST & FINANCIAL ACCOUNTS

(Study Material, May85, Nov96)

Q.1 The following figures are available from the financial records of ABC Manufacturing Co. Ltd. for the year ended 31-3-2006.

	Rs.
Sales (20,000 units)	25,00,000
Materials	10,00,000
Wages	5,00,000
Factory Overheads	4,50,000
Office and administrative Overhead	2,60,000
Selling and distribution Overheads	1,80,000
Finished goods (1,230 units)	1,50,000

Rs.

Work-in-Progress:

Materials	30,000	
Labour	20,000	
Factory overheads	<u>20,000</u>	70,000
Goodwill written off		2,00,000
Interest on capital		20,000

In the Costing records, factory overhead is charged at 100% wages, administration overhead 10% of factory cost and selling and distribution overhead at the rate of Rs. 10 per unit sold.

Prepare a statement reconciling the profit as per cost records with the profit as per financial records.

(Study Material)

Q.2 Following are the figures extracted from the Cost Ledger of a manufacturing unit.

Stores:	Rs.
Opening balance	15,000
Purchases	80,000
Transfer from WIP	40,000
Issue of WIP	80,000
Issue to repairs and maintenance	10,000
Sold as a special case of cost	5,000
Shortage in the year	3,000
Work-in-Progress:	
Opening inventory	30,000

Direct labour cost charged	30,000
Overhead cost charged	1,20,000
Closing Balance	20,000

Finished Products:

Entire output is sold at 10% profit on actual cost from work-in-process.

Others:

Wages for the period	35,000
Overhead Expenses	1,25,000

Ascertain the profit or loss as per financial account and cost accounts and reconcile them.

(Study Material)

Q.3 The following figures have been extracted from the Financial Accounts of a Manufacturing Firm for the first year of its operation:

	Rs.
Direct Material Consumption	50,00,000
Direct Wages	30,00,000
Factory Overhead	16,00,000
Administration Overheads	7,00,000
Selling and Distribution Overheads	9,60,000
Bad Debts	80,000
Preliminary Expenses written off	40,000
Legal Charges	10,000
Dividends Received	1,00,000
Interest Received on Deposits	20,000
Sales (1,20,000 units)	1,20,00,000
Closing Stock:	
Finished Goods (4,000 units)	3,20,000
Work-in-Progress	2,40,000

The cost accounts for the same period reveal that the direct material consumption was Rs. 56, 00,000. Factory overhead is recovered at 20% on prime cost. Administration overhead is recovered at Rs. 6 per unit of production. Selling and distribution overheads are recovered at Rs. 8 per unit sold.

Prepare the Profit and Loss Accounts both as per financial records and as per cost records. Reconcile the profits as per the two records.

(Study Material, May95)

Q.4 The following information is available from the financial books of a company having a normal production capacity of 60,000 units for the year ended 31st March, 2006:

- (i) Sales Rs. 10, 00,000 (50,000 units).
- (ii) There was no opening and closing stock of finished units.
- (iii) Direct material and direct wages cost were Rs. 5, 00,000 and Rs. 2, 50,000 respectively.
- (iv) Actual factory expenses were Rs. 1, 50,000 of which 60% are fixed.
- (v) Actual administrative expenses were Rs. 45,000 which is completely fixed.
- (vi) Actual selling and distribution expenses were Rs. 30,000 of which 40% are fixed.
- (vii) Interest and dividends received Rs. 15,000.

You are required to:

- (a) Find out profit as per financial books for the year ended 31st March, 2006;
- (b) Prepare the cost sheet and ascertain the profit as per cost accounts for the year ended 31st March, 2006 assuming that the indirect expenses are absorbed on the basis of normal production capacity; and
- (c) Prepare a statement reconciling profits shown by financial and cost books.

(May 2002)

Q.5 The financial books of a company reveal the following data for the year ended 31st March, 2002:

Rs.

Opening stock:

Finished goods (875 units)	74,375
Work in process	32,000

1.4.2001 to 31.3.2002

Raw, material consumed	7,80,000
Direct labour	4,50,000
Factory overheads	3,00,000
Goodwill	1,00,000
Administration overheads	2,95,000
Dividend paid	85,000
Bad debts	12,000
Selling and distribution overheads	61,000
Interest received	45,000
Rent received	18,000
Sales 14,500 unit	20,80,000
Closing stock: finished goods 375 units	41,250
Work in process	38,667

The cost records provide as under:

- (a) Factory overheads are absorbed at 60% of direct wages.
- (b) Administration overheads are recovered at 20% of factory cost.
- (c) Selling and distribution overheads are charged at Rs.4 per unit sold.
- (d) Opening stock of finished goods is valued at Rs.104 per unit.

The company values work in process at factory cost for both financial and cost profit reporting.

Required:

(i) Prepare statement for the year ended 31st March, 2002 to show

(a) The profit as per financial records

(b) The profit as per costing records

(ii) Present a statement reconciling the profit as per costing records with the profit as per financial records?

(Practice Manual, Nov.2005)

Q.6 The following is the trading and profit & loss account of Omega Ltd.

Particulars	Rs.	Particulars	Rs.
To Material Consumed	23,01,000	By sales (30,000 units)	48,75,000
To Direct wages	12,05,750	By finished goods	
To Production Overheads	6,92,250	stock (1,000 units)	1,30,000
To Administration Overheads	3,10,375	By work in progress:	
To Selling and Distribution		Material	55,250
Overheads	3,68,875	Wages	26,000
To Preliminary Expenses		Production overheads	<u>16,250</u>
written off	22,750		97,500
To Goodwill written off	45,500	By dividends received	3,90,000
To Fines	3,250	By interest on bank deposits	65,000
To Interest on Mortgage	13,000		
To Loss on Sale of Machine	16,250		
To Taxation	1,95,000		
To Net Profit for the year	<u>3,83,500</u>		
	<u>55,57,500</u>		<u>55,57,500</u>

Omega Ltd. manufactures a standard unit.

The cost Accounting records of Omega Ltd. show the following:

- (i) Production overheads have been charged to work in progress at 20% on prime cost.
- (ii) Administration Overheads have been recovered at Rs.9.75 per finished unit.
- (iii) Selling and distribution overheads have been recovered at Rs.13 per unit sold.
- (iv) The under-or Over-absorption of overheads have not been transferred to costing P/L A/c.

Required:

(i) Prepare a Performa costing profit & loss account, indicating net profit.

(ii) Prepare control accounts for production overheads, administration overheads and selling & distribution overheads.

- (iii) Prepare a statement reconciling the profit disclosed by cost records with that shown in financial accounts

(May 1992, May 1993)

Q.7 Given below is the trading and profit and loss account of a company for the year ended 31st March, 1993:

	Rs.		Rs.
To Material	27,40,000	By Sales (60,000 units)	60,000
To Wages	15,10,000	Stock (2,000 units)	
To Factory expenses	8,30,000	Work in progress: Rs.	1,60,000
To Administration expenses	3,82,400	Materials 64,000	
To Selling expenses	4,50,000	Wages 36,000	
To Preliminary expenses		Factory expenses <u>20,000</u>	
written off	60,000		1,20,000
Net profit	3,25,600	By Dividend Received	18,000
	62,98,000		62,98,000

The company manufactures standard units. In the cost account:

- (i) Factory expenses have been allocated to production at 20% of prime cost:
(ii) Administration expenses at Rs.6 per unit produced: and
(iii) Selling expenses at Rs. 8 per unit sold

Prepare the costing profit and loss account of the company and reconcile the same with the profit disclosed by the financial account.

(Practice Manual, May 2007)

Q.8 ABC Ltd. has furnished the following information from the financial books for the year ended 31st March, 2007:

Profit & Loss Account

	Rs.		Rs.
To opening stock (500 units at Rs. 140 each)	70,000	By Sales (10,250 units)	28,70,000
Material consumed	10,40,000	By Closing stock (250 units at Rs.200 each)	50,000
Wages	6,00,000		
Gross profit c/d	<u>12,10,000</u>		
	<u>29,20,200</u>		<u>29,20,000</u>
To factory overheads	3,79,000	By Gross profit b/d	12,10,000
Administration overheads	4,24,000	By Interest	1,000

Selling expenses	2,20,000	By Rent received	40,000
To Bad debts	16,000		
To Preliminary expenses	20,000		
To Net profit	1,90,000		
	12,51,000		12,51,000

The cost sheet shows the cost of materials at Rs. 104 per unit and the labour cost at Rs. 60 per unit. The factory overheads are absorbed at 60% of labour cost and administration overheads at 20% of factory cost. Selling expenses are charged at Rs.24 per unit. The opening stock of finished goods is valued at Rs. 180 per unit.

You are required to prepare:

- A statements showing profit as per cost accounts for the year ended 31st March, 2007.
- A statements showing the reconciliation of profit as disclosed in cost accounts with the profit shown in financial account.

(May 1994)

Q.9 M/s Sellwell Ltd. has furnished you the following information from the financial books for the year ended 31st December, 1993:

Profit & Loss Account for the year ended 31st December, 1993

	Rs.		Rs.
Opening stock of finished goods		Sales 10,250 units	3,58,750
500 units @ Rs. 17.50 each	8,750	Closing stock of finished goods:	
Materials consumed	1,30,000	250 units @ Rs. 25 each	6,250
Wages	75,000		
Gross profit c/d	<u>1,51,250</u>		
	<u>3,65,000</u>		<u>3,65,000</u>
Factory overheads	47,375	Gross profit c/d	1,51,250
Administration overheads	53,000	Interest	125
Selling expenses	27,500	Rent received	5,000
Bad debts	2,000		
Preliminary expenses	2,500		
Net profit	24,000		
	1,56,375		1,56,375

The cost sheet shows:

- The cost materials at Rs.13 per unit.
- The labour cost at Rs.7.50 per unit.
- The factory overheads are absorbed at 60% of labour cost.
- The administration overheads are absorbed at 20% of factory cost.

(v) Selling expenses are charged at Rs.3 per unit.

(vi) The opening stock of finished goods is valued at Rs. 22.50 per unit.

You are required to prepare:

- (i) The cost sheet showing the number of units produced and the cost of production, by elements of cost, per unit and in total.
- (ii) The statement of profit or loss as per cost account for the year ended 31st December, 1993.
- (iii) The statement showing the reconciliation of profit or loss as shown by the cost account with the profit as shown by the financial account.

(CWA Dec.1999)

Q.10 AMC maintains separate books for financial accounting and cost accounting. The financial profit and loss account of the company for the year ended 31.3.2009 is given.

Profit And Loss Account

For the year ended 31.3.2009

	Rs.		Rs.
To opening bal. of inventory		By Sales	36,08,000
Raw material 2,00,000		By closing bal. of inventory:	
Work in progress 50,000		Raw material 1,80,000	
Finished goods <u>1,50,000</u>	4,00,000	Work in progress 40,000	
To Purchase of raw materials	15,40,000	Finished goods <u>1,60,000</u>	3,80,000
To Wages	4,80,000	By miscellaneous income	22,000
To Factory overheads	2,60,000		
To Admin. overheads	2,40,000		
To Distrn. and selling O/H	1,80,000		
To Debenture interest	40,000		
To Preliminary expenses			
written off	50,000		
To Net Profit	<u>8,20,000</u>		
	<u>40,10,000</u>		<u>40,10,000</u>

A statement reconciling profits as per financial accounts with that as per cost accounting records prepare by firm is also given below:

Reconciliation statement

	Rs.	Rs.	Rs.
Profits as per profit and loss account			8,20,000
(a) Differences in valuation of inventory:			
Raw material-opening stock		20,000	
Work in progress-opening stock		12,000	
Work in progress-closing stock		4,000	
Finished goods-opening stock		<u>30,000</u>	

Add: Raw material-closing balance	(30,000)	66,000	
Finished goods- closing balance	(15,000)	<u>(45,000)</u>	
(b) Other items:		21,000	
Add: Debenture interest	40,000		
Preliminary expenses written off	<u>50,000</u>		
	90,000		
Deduct: Miscellaneous income	<u>22,000</u>	68,000	<u>(47,000)</u>
Profit as per costing profit and loss account			<u>8,67,000</u>

Prepare the following accounts as they would appear in the cost records:

- (i) Raw materials control account
- (ii) Work in progress account
- (iii) Finished goods stock account
- (iv) Cost of sales account
- (v) Costing profit and loss account.

MEMORANDUM RECONCILIATION ACCOUNT

(Practice Manual, May2003, May2009)

Q.11 A manufacturing company disclosed a net loss of Rs.3, 47,000 as per their cost accounts for the year ended March 31, 2003. The financial accounts however disclosed a net loss of Rs.5, 10,000 for the same period. **The following information was revealed as a result of scrutiny of the figures of both the sets of accounts:**

	Rs.
Factory overheads under absorbed	40,000
Administration overheads over absorbed	60,000
Depreciation charged in financial accounts	3,25,000
Depreciation charged in cost accounts	2,75,000
Interest on investment not included in cost account	96,000
Income tax provided	54,000
Interest on loan funds in financial accounts	2,45,000
Transfer fees (credit in financial books)	24,000
Stores adjustment (credit in financial books)	14,000
Dividends received	32,000

Prepare a Memorandum Reconciliation Account.

(Nov2010)

Q.12 A manufacturing company has disclosed a net loss of Rs. 8,75,000 as per their cost accounting records for the year ended March 31, 2010. However, their financial accounting records disclosed a net loss of Rs. 7,91,250 for the same period. A scrutiny of the data of both the sets of books of accounts revealed the following information:

	Rs.
Factory overheads over absorbed	47,500
Administration overheads under absorbed	32,750
Depreciation charged in financial accounts	2,25,000
Depreciation charged in cost accounts	2,42,250
Interest on investment not included in cost account	62,750
Income tax provided in Financial Accounts	7,250
Transfer fees (credit in financial books)	12,500
Preliminary expenses written off	27,500
Under Valuation of opening stock in Cost Accounts	6,250
Under Valuation of closing stock in Cost Accounts	17,500

Prepare a Memorandum Reconciliation Account.