

PAPER – 4 : COST ACCOUNTING AND FINANCIAL MANAGEMENT

Section A : Cost Accounting

QUESTIONS

1. ABC Ltd specialises in producing and packaging compact discs (CDs) for the music recording industry. ABC Ltd uses a job order cost system. The following data summarise the operations related to production for March, the first month of operations:

- (a) Materials purchased on account, Rs. 15,500.
 (b) Materials requisitioned and labour used:

	<i>Materials</i>	<i>Factory Labour</i>
	Rs.	Rs.
Job No. 100	2,650	1,770
Job No. 101	1,240	650
Job No. 102	980	420
Job No. 103	3,420	1,900
Job No. 104	1,000	500
Job No. 105	2,100	1,760
For general factory use	450	650

- (c) Factory overhead costs incurred on account, Rs. 2,700.
 (d) Depreciation of machinery, Rs. 1,750.
 (e) Factory overhead is applied at a rate of 70% of direct labour cost.
 (f) Jobs completed: Nos. 100, 101, 102, 104.
 (g) Jobs 100, 101 and 102 were shipped, and customers were billed for Rs. 8,100, Rs. 3,800, and Rs. 3,500 respectively.

Instructions:

- Journalise the entries to record the transactions identified above.
 - Determine the account balances for Work in Process and Finished Goods.
 - Prepare a schedule of unfinished jobs to support the balance in the work in process account.
 - Prepare a schedule of completed jobs on hand to support the balance in the finished goods account.
2. ABC Ltd manufactures concrete by a series of four processes. All materials are introduced in Crushing. From Crushing, the materials pass through Sifting, Baking and Mixing, emerging as finished concrete. All inventories are costed by the first-in, first-out method.

The balances in the accounts Work in Process – Mixing and Finished Goods were as follows on May 1, 2006:

	Rs.
Work in Process – Mixing (2,000 units, $\frac{1}{4}$ completed)	13,700
Finished Goods (1,800 units at Rs. 8.00 a unit)	14,400

The following costs were charged to Work in Process – Mixing during May:

	Rs.
Direct materials transferred from Baking: 15,200 units at Rs. 6.50 a unit	98,800
Direct labour	17,200
Factory overhead	11,780

During May, 16,000 units of concrete were completed, and 15,800 units were sold. Inventories on May 31 were as follows:

Work in Process – Mixing: 1,200 units, $\frac{1}{2}$ completed

Finished Goods : 2,000 units

Instructions:

1. Prepare a cost of production report for the Mixing Department.
2. Determine the cost of goods sold (indicate number of units and unit costs).
3. Determine the finished goods inventory, May 31, 2006.
3. A cost centre in a factory furnishes the following working conditions:

Normal working week	40 hours
Number of machines	15
Normal weekly loss of hours on maintenance, etc.	4 hours per machine
Estimated annual overhead	Rs. 1,55,520
Estimated direct wage rate	Rs. 3 per hour
Number of weeks worked per year	48

Actual results in respect of a 4–week period are:

Overhead incurred	Rs. 15,000
Wages incurred	Rs. 7,000
Machine-hours produced	2,200

You are required to:

- (a) Calculate the overhead rate per machine-hour, and
- (b) Calculate the amount of under or over-absorption of both wages and overhead.
4. XYZ Co. uses a historical cost system and applies overheads on the basis of pre-determined rates. The following data are available from the records of the company for the year ended 31st March, 2003:

	Rs.
Manufacturing overhead incurred	8,50,000
Manufacturing overhead applied	7,50,000
Work-in-progress	2,40,000
Finished goods stock	4,80,000
Cost of goods sold	16,80,000

Apply two methods for disposal of under-absorbed overhead showing the implications of each method on the profit of the company.

5. (i) What is normal and abnormal wastage? How are they dealt in cost accounts?

- (ii) Jupiter Manufacturing uses a weighted-average process costing system at its satellite plant. Goods pass from the Major Assembly Department to the Finishing Department to finished goods inventory. The goods are inspected twice in the Finishing Department. The first inspection occurs when the goods are 30% complete, and second inspection occurs at the end of production. The following data pertain to the Finishing Department for the month of July.

	Units
Good units started and completed during July	65,000
Normal spoilage – first inspection	2,000
Abnormal spoilage – second inspection	150
Ending work-in-process inventory, 60% complete	15,000

There was no beginning work-in-progress inventory in July. Juniper recognizes spoiled units to make the cost of all spoilage visible in their management reporting. What would be the Equivalent units for assigning costs for July ?

6. The three workers Govind, Ram and Shyam produced 80, 100 and 120 pieces respectively of a product 'X' on a particular day in May in a factory. The time allowed for 10 units of Product X is 1 hour and their hourly rate is Rs. 4. Calculate for each of these three workers the following:
- Earnings for the day, and
 - Effective Rate of Earnings per hour under: (a) Straight piece-rate, (b) Halsey Premium Bonus and (c) Rowan Premium Bonus methods of labour remuneration.
7. Calculate the monthly remuneration of three workers M, N and Q from the following data:
- Standard production per month per worker – 4,000 units.
 - Actual production during the month:

M – 3,400 units
N – 3,000 units
Q – 3,800 units
 - Piece work rate is 25 paise per unit.
 - Additional production bonus is Rs. 10 for each percentage of actual production exceeding 80% standard production (e.g., 79% nil, 80% nil, 81% Rs. 10, 82% Rs. 20 and so on).
 - Fixed dearness allowance , Rs 150 per month
8. A company has three production departments and two service departments. Following details relating to overheads analysed to production and service departments is made available to you.

		Rs
Production department	X	48,000
	Y	42,000
	Z	30,000
Service department	1	14,040
	2	18,000

The expenses of service department are apportioned as follows:

	Production departments			Service departments	
	X	Y	Z	1	2
Service department 1	20%	40%	30%		10%
Service department 2	40%	20%	20%	20%	

You are required to allocate the service department costs over the production departments using the simultaneous equation method.

9. A factory with two production processes. Normal loss in each process is 10% and scrapped units sell for Rs. 0.50 each from process 1 and Rs. 3 each from process 2. Relevant information for costing purposes relating to period 5 is as follows.

<i>Direct materials added:</i>	<i>Process 1</i>	<i>Process 2</i>
Units	2,000	1,250
Cost	Rs. 8,100	Rs. 1,900
Direct labour	Rs. 4,000	Rs. 10,000
Production overhead	150% of direct labour cost	120% of direct labour cost
Output to process 2/finished goods	1,750 units	2,800 units
Actual production overhead	Rs. 17,800	

Required

Prepare the accounts for process 1, process 2, scrap, abnormal loss or gain and production overhead.

10. ABC Ltd. operates an integrated accounting system. It is a chemical processing company, which converts three raw materials – W, X and Y – into a final product Z which is used as a fertilizer in the farming industry.

On 30 September, 2005, an extract of the trial balance taken from its ledgers was as follows:

	<i>Rs.</i>	<i>Rs.</i>
Raw material control account	15,400	
Work-in-progress control account	21,520	
Production overhead control account		2,360
Abnormal loss account	1,685	
Abnormal gain account		930
Finished goods control account	27,130	

The following notes are also relevant:

- ABC Ltd. prepares its financial accounts to 31 October each year:
- The raw material control account balance comprises:

Direct materials:	<i>Rs.</i>
Material X: 4,200 kg @ Rs. 2 per kg.	8,400
Material Y: 1,050 kg @ Rs. 4 per kg.	4,200
Indirect materials	<u>2,800</u>
	<u>15,400</u>

- The work in progress control account balance comprises:

		<i>Rs.</i>
Process 2	8,400 kg	Process 1
		8,720
		Materials
		2,000
		Labour
		3,600
		Overhead
		<u>7,200</u>
		<u>21,520</u>

During October, 2005, the following transactions occurred:

- (i) Indirect materials purchased on credit amounted to Rs. 1,300.
- (ii) Direct materials were purchased on credit as follows:

	Rs.
Material W: 10,500 kg costing	4,960
Material X: 10,000 kg costing	21,000
Material Y: 5,000 kg costing	19,000

- (iii) Direct wages were incurred as follows:

	Rs.
Process 1	17,160
Process 2	8,600

- (iv) Indirect wages were incurred amounting to Rs. 2,980.
- (v) Production overhead costs incurred (excluding materials and labour costs) amounted to Rs. 31,765.
- (vi) Indirect materials consumed in the month amounted to Rs. 1,450.
- (vii) Direct materials were issued to production as follows:

	Rs.
Process 1	
10,500 kg of W costing	4,960
7,200 kg of X costing	14,700
Process 2	
4,050 kg of Y costing	15,600

There was no opening or closing stock of material W.

- (viii) The cost of finished goods sold during the month amounted to Rs. 1,25,740. The completed output from the two processes for October, 2005 amounted to:

Process 1	13,100 kg
Process 2	20,545 kg

Closing work in progress, which is 100% complete as to materials but only 50% completed as to conversion cost, amounted to:

Process 1	2,000 kg
Process 2	1,500 kg

Normal losses, caused by evaporation and occurring at the end of processing are expected in each of the processes as follows:

Process 1	15% of throughput
Process 2	10% of throughput

Note: Throughput equals opening work in progress plus materials introduced less closing work in progress.

Production overhead is absorbed using the following absorption rates:

Process 1	150% of direct labour cost
Process 2	200% of direct labour cost

Requirements:

- (a) Prepare the accounts for each of the two processes for the month of October, 2005.
 - (b) Prepare the Six ledger accounts for which opening balances have been given, commencing with those balances, entering the transactions for the month of October, 2005 and making entries in those accounts for 31 October, 2005 as appropriate.
11. (a) Pane Company uses a job costing system and applies overhead to products on the basis of direct labour cost. Job No. 75, the only job in process on January 1, had the following costs assigned as of that date: direct materials, Rs. 40,000; direct labor, Rs. 80,000; and factory overhead, Rs. 120,000. The following selected costs were incurred during the year.

Traceable to jobs:

Direct materials	Rs. 1,78,000	
Direct labor	3,45,000	Rs. 523,000

Not traceable to jobs:

Factory materials and supplies	46,000	
Indirect labor	2,35,000	
Plant maintenance	73,000	
Depreciation on factory equipment	29,000	
Other factory costs	76,000	4,59,000

Pane's profit plan for the year included budgeted direct labor of Rs. 3,20,000 and factory overhead of Rs. 4,48,000. There was no work-in-process on December 31. What were Pane's overhead for the year?

- (b) Define the following terms:
 - (i) Cost Driver
 - (ii) Activity Cost Pool.
12. 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 particulars were obtained from their books for April 2005:

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

Actually passengers carried were 75% of seating capacity. All buses ran all 30 days of the month. Each bus made one round trip per day.

Find out the cost per passenger kilometer.

13. ABC Ltd has received a request for a price quotation from one of its regular customers for an order of 500 units with the following characteristics,

Direct labour per unit produced	2 hours
Direct material per unit produced	Rs 22
Machine hours per unit produced	1 hour
Number of component and material purchases	6
Number of production runs for the component prior to the assembly	4
Average set up time per production run	3 hours
Number of deliveries	1
Number of customer visits	2
Engineering design and support	50 hours
Customer support	50 hours

Details of the activities required for the order are as follows:

Direct labour processing and assembly activities	Rs 10 per labour hour
Machine processing	Rs 30 per machine hour
Purchasing and receiving materials and components	Rs 100 per purchase order
Scheduling production	Rs 250 per production run
Setting – up machines	Rs 120 per set up hour
Packaging and delivering orders to customers	Rs 400 per delivery
Invoicing and account administration	Rs 120 per customer order
Marketing and order negotiation	Rs 300 per customer visit
Customer support activities including after sales service	Rs 50 per customer service hour
Engineering design and support	Rs 80 per engineering hour

You are required to estimate the full cost of the order under an activity based setup classifying expenses as

- Ø Unit level expenses
- Ø Batch level expenses
- Ø Product sustaining expenses
- Ø Customer sustaining expenses

14. ABC Ltd operates an integrated cost accounting system and has a financial year which ends on 30 September. It operates in a processing industry in which a single product is produced by passing inputs through two sequential processes. A normal loss of 10 per cent of input is expected in each process.

The following account balances have been extracted from its ledger at 31st August, 2005:

	<i>Debit</i>	<i>Credit</i>
	<i>Rs.</i>	<i>Rs.</i>
Process 1 (materials Rs. 4,400: conversion costs Rs. 3,744)	8,144	
Process 2 (process 1 Rs. 4,431: conversion costs Rs. 5,250)	9,681	
Abnormal loss	1,400	
Abnormal gain		300
Overhead control account		250

Sales	5,85,000
Cost of sales	4,42,500
Finished goods stock	65,000

ABC Ltd uses the weighted average method of accounting for work in process. During September, 2005 the following transactions occurred:

		Rs.
Process 1:	Materials input 4,000 kg costing	22,000
	Labour cost	12,000
	Transfer to process 2	2,400 kg
Process 2:	Transfer from process 1	2,400 kg.
	Labour cost	15,000
	Transfer to finished goods	2,500 kg.

Overhead costs incurred amounted to Rs. 54,000.

Sales to customers were Rs. 52,000.

Overhead costs are absorbed into process costs on the basis of 150 per cent of labour cost.

The losses which arise in process 1 have no scrap value: those arising in process 2 can be sold for Rs. 2 per kg.

Details of opening and closing work in process for the month of September, 2005 are as follows:

	Opening	Closing
Process 1	3,000 kg.	3,400 kg.
Process 2	2,250 kg.	2,600 kg.

In both processes closing work in process is fully complete as to material cost and 40 per cent complete as to conversion cost.

Stocks of finished goods at 30 September 2005 were valued at cost of Rs. 60,000.

Requirements:

Prepare the ledger accounts for September, 2005 and the annual profit and loss account of ABC Ltd. (Commence with the balances given above, balance off and transfer any balances as appropriate).

15. ABC Ltd is a construction company, which has undertaken three contracts. Information for the previous year along with other details is provided to you below;

	Contract A (Rs.000).	Contract B (Rs.000).	Contract C (Rs.000)
Contract price	1,760	1,485	2,420
Balances brought forward at the beginning of the year:			
Material on site		20	30
Written down value of plant and machinery		77	374
Wages accrued		5	10
Transactions during previous year:			
Profit previously transferred to profit and loss a/c			35

Cost of work certified (cost of sales)		418	814
Transactions during current year:			
Material delivered to site	88	220	396
Wages paid	45	100	220
Salaries and other cost	15	40	50
Written down value of plant issued to site	190	35	
Head office expenses apportioned during the year	10	20	50
Balances c/fwd at the end of the year:			
Material on site	20		
Written down value of plant and machinery	150	20	230
Wages accrued	5	10	15
Value of work certified at the end of the year	200	860	2100
Cost of work not certified at the end of the year			55

The agreed retention rate is 10% of the value of work certified by the contractee's architect. Contract C is scheduled to be handed over to the contractee in the near future. It is estimated that Rs 3,05,000 shall be needed to be spent in addition to what has been tabulated above to complete this particular contract. This amount includes an allowance for plant depreciation, construction services and for contingencies.

You are required to prepare contract accounts for each of the three contracts and recommend how much profit or loss should be taken up for the year.

16. (a) AC Ltd. absorbs production overhead in the assembly department on the basis of direct labour hours. Budgeted direct labour hours for the period were 200,000. The productionoverheads absorption rate for the period was Rs. 2 per direct labour hour.

Actual results for the period were as follows.

Direct labour hours worked	220,000
Production overheads incurred	Rs. 480,000

You are required to compute the over/under absorbed production overheads.

- (b) Department L production overheads are absorbed using a direct labour hour rate. Budgeted production overheads for the department were Rs. 480,000 and the actual labour hours were 100,000. Actual production overheads amounted to Rs. 516,000. Based on the above data, and assuming that the production overheads were over absorbed by Rs. 24,000, what was the overhead absorption rate per labour hour ?

17. The budgeted production overheads and other budget data of Eiffel Ltd. are as follows

Budget	Production dept X
Overhead cost	Rs. 36,000
Direct materials cost	Rs. 32,000
Direct labour cost	Rs. 40,000
Machine hours	10,000
Direct labour hours	18,000

What would be the absorption rate for Department X using the various bases of apportionment?

- (a) % of direct material cost
 (b) % of direct labour cost=

- (c) % of total direct cost
- (d) Rate per machine hour
- (e) Rate per direct labour hour
- 18. (a) Describe the factors which should be taken into consideration before introducing an incentive system.
- (b) Explain normal wastage, abnormal wastage and, state how they should be dealt within process cost accounts.
- 19. (a) Briefly explain the concept of 'Opportunity Cost'.
- (b) Distinguish between 'Cost control' and 'Cost reduction'.
- 20. (a) What is 'Defective Work'? How it is accounted for in cost accounts?
- (b) Distinguish between 'Committed Fixed Costs' and 'Discretionary Fixed Costs'.
- (c) How will you treat the research and development costs in connection with
 - (i) job undertaken on behalf of a customer; and
 - (ii) improvement in existing products ?

SUGGESTED ANSWERS/HINTS

1. (1)		Rs.	Rs.
(a)	Materials	15,500	
	Accounts Payable		15,500
(b)	Work in process	11,390	
	Materials		11,390
	Work in Process	7,000	
	Wages payable		7,000
	Factory Overhead	1,100	
	Materials		450
	Wages Payable		650
(c)	Factory Overhead	2,700	
	Accounts Payable		2,700
(d)	Factory Overhead	1,750	
	Accumulated Depreciation – Machinery		1,750
(e)	Work in Process	4,900	
	Factory Overhead (70% of Rs. 7,000)		4,900
(f)	Finished Goods	11,548	
	Work in Process		11,548
(g)	Accounts receivable	15,400	
	Sales		15,400
	Cost of Goods sold	9,698	
	Finished Goods		9,698

Computation of the cost of jobs finished:

<i>Job</i>	<i>Direct Materials</i>	<i>Direct Labour</i>	<i>Factory Overhead</i>	<i>Total</i>
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Job No. 100	2,650	1,770	1,239	5,659
Job No. 101	1,240	650	455	2,345
Job No. 102	980	420	294	1,694
Job No. 104	1,000	500	350	<u>1,850</u>
				<u>11,548</u>

Cost of jobs sold computation:

	<i>Rs.</i>
Job No. 100	5,659
Job No. 101	2,345
Job No. 102	<u>1,694</u>
	<u>9,698</u>

2. Work in Process : Rs. 11,742 (Rs. 11,390 + Rs. 7,000 + Rs. 4,900 – Rs. 11,548)
 Finished Goods: Rs. 1,850 (Rs. 11,548 – Rs. 9,698)

3 Schedule of unfinished jobs

<i>Job</i>	<i>Direct Materials</i>	<i>Direct Labour</i>	<i>Factory Overhead</i>	<i>Total</i>
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Job No. 103	3,420	1,900	1,330	6,650
Job No. 105	2,100	1,760	1,232	<u>5,092</u>
Balance of work in process, March 31				<u>11,742</u>

4 Schedule of Completed Jobs

	<i>Rs.</i>
Job No. 104:	
Direct Materials	1,000
Direct Labour	500
Factory overhead	<u>350</u>
Balance of Finished Goods, March 31	<u>1,850</u>

2. 1 ABC Ltd

Cost of Production Report – Mixing Department
 for the month ended May 31, 2006

UNITS	<i>Equivalent Units</i>		<i>Conversion</i>
	<i>Whole Units</i>	<i>Direct Materials</i>	
Units charged to production:			
Inventory in process, May 1	2,000		

Received from Baking	<u>15,200</u>		
Total units accounted for by the Mixing Department	<u>17,200</u>		
Units to be assigned cost:			
Inventory in process, May 1 (25% completed)	2,000	0	1,500
Started and completed in May	<u>14,000</u>	<u>14,000</u>	<u>14,000</u>
Transferred to finished goods in May	16,000	14,000	15,500
Inventory in process, May 31 (50% complete)	<u>1,200</u>	<u>1,200</u>	<u>600</u>
Total units to be assigned cost	<u>17,200</u>	<u>15,200</u>	<u>16,100</u>

COSTS	Cost		
	<i>Direct Materials</i>	<i>Conversion</i>	<i>Total costs</i>
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Unit costs:			
Total cost for May in Mixing	98,800	28,980	
Total equivalent units (from above)	<u>÷15,200</u>	<u>÷16,100</u>	
Cost per equivalent unit	<u>6.50</u>	<u>1.80</u>	
Costs charged to production:			
Inventory in process, May 1			13,700
Cost incurred in May			<u>1,27,780</u>
Total costs accounted for by the Mixing Department			<u>1,41,480</u>

	<i>Direct Materials</i>	<i>Conversion</i>	<i>Total costs</i>
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Costs allocated to completed and partially completed units:			
Inventory in process, May – 1, balance			13,700
To complete inventory n process, May 1	0	2,700 (a)	2,700
Started and completed in May	91,000 (b)	25,200 (c)	<u>1,16,200</u>
Transferred to finished goods in May			1,32,600
Inventory in process, May 31	7,800 (d)	1,080 (e)	<u>8,880</u>
Total costs assigned by the Mixing Department			<u>1,41,480</u>

(a) $1,500 \times \text{Rs. } 1.80 = \text{Rs. } 2,700$

(b) $14,000 \times \text{Rs. } 6.50 = \text{Rs. } 91,000$

(c) $14,000 \times \text{Rs. } 1.80 = \text{Rs. } 25,200$

(d) $1,200 \times \text{Rs. } 6.50 = \text{Rs. } 7,800$

(e) $600 \times \text{Rs. } 1.80 = \text{Rs. } 1,080$

2 Cost of goods sold:

Rs.	Rs.	
1,800 units at Rs. 8.00	Rs. 14,400	(from finished goods beginning inventory)
2,000 units at Rs. 8.20*	Rs. 16,400	(from work in process beginning inventory)
<u>12,000</u> units at Rs. 8.30**	<u>Rs. 99,600</u>	(from May production started and completed)
<u>15,800</u> units	<u>Rs. 1,30,400</u>	

*(Rs. 13,700 + Rs. 2,700) ÷ 2,000

** Rs. 1,16,200 ÷ 14,000

3 Finished goods inventory, May 31:

2,000 units at Rs. 8.30 Rs. 16,600.

3. (a) Annual overhead – Rs. 1,55,520

Annual workings hours (Normal) = Number of machines × No. of weeks p.a. × Effective weekly hours

$$= 15 \times 48 \times 36 = 25,920$$

Overhead rate per machine hour = Rs. 1,55,520 ÷ 25,920 = Rs. 6.00

(b) Overhead incurred = Rs. 15,000

Overhead absorbed = Rs. 13,200 (i.e., 2,200 × Rs. 6)

Under-absorbed overhead = 15,000 – 13,200 = Rs. 1,800

Wages incurred = Rs. 7,000

Wages absorbed = Rs. 7,200 (i.e., 40 hours × 15 machines × Rs. 3 × 4 weeks)

Wages over-absorbed = 7,200 – 7,000 = Rs. 200.

	Rs.
Manufacturing overhead – Actual	8,50,000
Manufacturing overhead – Applied	<u>7,50,000</u>
Under-absorbed overhead	<u>1,00,000</u>

Methods of Disposal

Method 1:

Under-absorbed amount of overhead of Rs. 1,00,000 is added to cost of sales, work-in-progress and finished stock in the ratio of 168:24:48: or 7:1:2 as under:

	Amount	Under-absorbed overhead added	Total
	Rs.	Rs.	Rs.
Cost of sales	16,80,000	70,000	17,50,000
Work-in-progress	2,40,000	10,000	2,50,000
Finished stock	<u>4,80,000</u>	<u>20,000</u>	<u>5,00,000</u>
	<u>24,00,000</u>	<u>1,00,000</u>	<u>25,00,000</u>

Effect on Profit: The profit will reduce by Rs. 70,000 because of increase in the cost of sales which is debited to Profit and Loss Account. On the other hand, Rs. 30,000 will be credited to Profit and Loss Account on account of increase in the value of closing stock of work-in-progress

and finished goods, i.e., Rs. 10,000 + 20,000. Thus the net effect of using this method is that the profit for the year will be reduced by Rs. 40,000, i.e., Rs. 70,000 – (10,000 + 20,000).

Method 2:

The entire amount of under-absorbed manufacturing overhead may be carried forward to the next year if it is presumed that such under-absorption has arisen due to cyclical or seasonal fluctuations. In such a case, the profit of the current year will then be based on pre-determined overheads and remain unaffected.

5. (i) Normal wastage: It is defined as the loss of material which is inherent in the nature of work. Such wastage can be estimated in advance on the basis of past experience or technical specifications. If the wastage is within the specified limit, it is considered as normal. Suppose a company states that the normal wastage in Process A will be 5% of input. In such a case wastage upto 5% of input will be considered as normal wastage of the process.

When the wastage fetches no value, the cost of normal wastage is absorbed by good production units of the process and the cost per unit of good production is increased accordingly. If the normal wastage realises some value, the value is credited to the process account to arrive at normal cost of normal output.

Abnormal wastage: It is defined as the wastage which is not inherent to manufacturing operations. This type of wastage may occur due to the carelessness of workers, a bad plant, design etc. Such a wastage cannot be estimated in advance. In other words any wastage excess of normal wastage is abnormal wastage.

The units representing abnormal wastage are valued like good units produced and debited to the separate account which is known as abnormal wastage account. If the abnormal wastage fetches some value, the same is credited to abnormal wastage account. The balance of abnormal wastage account i.e. difference between value of units representing abnormal wastage minus realisation value is transferred to Costing Profit and Loss account for the year.

(ii)	Physical units	Equivalent units
Started and completed during month(100%)	65,000	65,000
Normal spoilage (30%)	2,000	600
Abnormal spoilage(100%)	150	150
Ending work in process inventory (60%)	15,000	9,000
	82,150	74,750

6. Statement of Earnings

	Govind	Ram	Shyam
(i) Production (units)	80.00	100	120
(ii) Time allowed (Hours @ 10 pieces per hour)	8.00	10	12
(iii) Piece rate (Rs. 4 ÷ 10)	0.40	0.40	0.40
(iv) Time taken (Assumed 1 day = 8 hours)	8.00	8	8
(v) Time saved	0	2	4
Earnings per day (Rs.)			
(a) Straight Piece Rate	80 × 0.4 =32.00	100 × 0.4 =40.00	120 × 0.4 =48.00
(b) Halsey Premium Bonus (See Note)	32.00	36.00	40.00
(c) Rowan Premium Bonus (See Note)	32.00	38.40	42.60

Effective Rate of Earning per hour (Earning ÷ Hours)

	Rs.	Rs.	Rs.
(a) Straight Piece Rate	4.00	5.00	6.00
(b) Halsey Premium Bonus	4.00	4.50	5.00
(c) Rowan Premium Bonus	4.00	4.80	5.33

Notes:

1. *Halsey Premium Bonus*

Wages = (Time taken + 50% of time saved) × Time rate

Govind = (8 + 0) × Rs. 4 = Rs. 32

Ram = (8 + 1) × Rs. 4 = Rs. 36

Shyam = (8 + 2) × Rs. 4 = Rs. 40

2. *Rowan Premium Bonus*

Wages = Time taken × Rate + $\left(\frac{\text{Time saved}}{\text{Time allowed}} \times \text{Time taken} \times \text{Rate} \right)$

Govind = $8 \times 4 + \left(\frac{0}{8} \times 8 \times 4 \right)$ = Rs. 32

Ram = $8 \times 4 + \left(\frac{2}{10} \times 8 \times 4 \right)$ = Rs. 38.40

Shyam = $8 \times 4 + \left(\frac{4}{12} \times 8 \times 4 \right)$ = Rs. 42.67

7. *Statement of Monthly Remuneration*

Worker	Standard production (units)	Actual production (units)	% of actual to standard production	Piece wages @ Rs. 0.25	Bonus	D.A.	Total earnings
					Rs.	Rs.	Rs.
M	4,000	3,400	85%	850	50	150	1,050
N	4,000	3,000	75%	750	—	150	900
Q	4,000	3,800	95%	950	150	150	1,250

8. Let

X = total overhead of service department 1

Y = total overhead of service department 2

The total overhead transferred into service departments 1 and 2 can be expressed as

X = 14,040 + 0.2 Y

Y = 18,000 + 0.1 X

Rearranging the above equations:

X – 0.2 Y = 14,040(1)

- 0.1X + Y = 18,000(2)

Multiplying equation (1) by 5 and equation (2) by 1, we get

5X – Y = 70,200

-0.1X + Y = 18,000

Adding the above equations together we have

$$4.9X = 88,200$$

$$\text{or } X = 18,000$$

$$\text{and hence } Y = 19,800$$

Apportioning the values of X and Y to the production departments in the agreed percentages, we have

	X	Y	Z	Total
Allocation as per overhead analysis	48,000	42,000	30,000	1,20,000
Allocation of service department 1	3,600(20%)	7,200(40%)	5,400(30%)	16,200
Allocation of service department 2	7,920(40%)	3,960(20%)	3,960(20%)	15,840
	59,520	53,160	39,360	1,52,040

9. Output and losses

	Process 1 Units	Process 2 Units
Output	1,750	2,800
Normal loss (10% of input)	200	300
Abnormal loss	50	-
Abnormal gain	-	(100)
	2,000	3,000*

* 1,750 units from Process 1 + 1,250 units input to process.

Cost per unit of output and losses

	Process 1 Rs.	Process 2 Rs.
Cost of input		
- material	8,100	1,900
- from process 1	-	(1,750 × Rs. 10)
-labour	4,000	10,000
-overhead (150% × Rs. 4,000)	6,000	(120% × Rs. 10,000)
	18,100	41,400
Less scrap value of normal loss (200 × Rs 0.50)	(100)	(300 × Rs 3)
	18,000	40,500
Expected output		
90% of 2,000	1,800	
90% of 3,000		2,700
Cost per unit		
Rs. 18,000 ÷ 1,800	Rs. 10	
Rs. 40,500 ÷ 2,700		Rs. 15

Total cost of output and losses

	Process 1		Process 2	
	Rs.		Rs.	
Output (1,750×Rs. 10)	17,500	(2,800×Rs. 15)	42,000	
Normal loss (200×Rs. 0.50)*	100	(300×Rs. 3)*	900	
Abnormal loss (50×Rs. 10)	500		-	
	<u>18,100</u>		<u>42,900</u>	
Abnormal gain	-	(100×Rs. 15)	(1,500)	
	<u>18,100</u>		<u>41,400</u>	

* Normal loss is valued at scrap value only.

Complete accounts

PROCESS 1 ACCOUNT

	Units	Rs.		Units	Rs.
Direct material	2,000	8,100	Scrap a/c (normal loss)	200	100
Direct labour		4,000	Process 2 a/c	1,750	17,500
Production overhead a/c		6,000	Abnormal loss a/c	50	500
	<u>2,000</u>	<u>18,100</u>		<u>2,000</u>	<u>18,100</u>

PROCESS 2 ACCOUNT

	Units	Rs.		Units	Rs.
Direct materials					
From process 1	1,750	17,500	Scrap a/c (normal loss)	300	900
Added materials	1,250	1,900	Finished goods a/c	2,800	42,000
Direct labour		10,000			
Production overhead		12,000			
	3,000	41,400			
Abnormal gain	100	1,500			
	<u>3,100</u>	<u>42,900</u>		<u>3,100</u>	<u>42,900</u>

ABNORMAL LOSS ACCOUNT

	Rs.		Rs.
Process 1 (50 units)	500	Scrap a/c: sale of scrap of extra loss (50 units)	25
		Profit and loss a/c	475
	<u>500</u>		<u>500</u>

ABNORMAL GAIN ACCOUNT

	Rs.		Rs.
Scrap a/c (loss of scrap revenue due to abnormal gain, 100 units ×Rs. 3)	300	Process 2 abnormal gain (100 units)	1,500
Profit and loss a/c	<u>1,200</u>		<u>1,500</u>
	<u>1,500</u>		<u>1,500</u>

SCRAP ACCOUNT

	Rs.		Rs.
Scrap value of normal loss		Cash a/c – cash received	
Process 1 (200 units)	100	Loss in process 1(250 units)	125
Process 2 (300 units)	900	Loss in process 2 (200 units)	600
Abnormal loss a/c (process 1)	25	Abnormal gain a/c (process 2)	300
	<u>1,025</u>		<u>1,025</u>

PRODUCTION OVERHEAD ACCOUNT

	Rs.		Rs.
Overhead incurred	17,800	Process 1 a/c	6,000
Over-absorbed overhead a/c (or P & L a/c)	200	Process 2 a/c	12,000
	<u>18,000</u>		<u>18,000</u>

10. (a)

Process I

	Kg.	Rs.		Kg.	Rs.
Wages control		17,160	Process 2	13,100	55,961
Raw materials control	17,700	19,660	Abnormal loss	245	1,047
			Normal loss	2355	
Production overhead control		<u>25,740</u>	Closing work in progress	<u>2,000</u>	<u>5,552</u>
	<u>17,700</u>	<u>62,560</u>		<u>17,700</u>	<u>62,560</u>

Equivalent units:

	Material	Labour/Overhead
Process 2	13,100	13,100
Closing work in progress	2,000	1,000
Abnormal loss	<u>245</u>	<u>245</u>
	<u>15,345</u>	<u>14,345</u>
	Rs.	Rs.
Costs	19,660	42,900
Cost/equivalent unit (rounded)	1.28	2.99

	Materials	Labour/Overhead	Total
Valuation	Rs.	Rs.	Rs.
Process 2	16,784	39,177	55,961
Closing work in progress	2,562	2,990	5,552
Abnormal loss	<u>314</u>	<u>733</u>	<u>1,047</u>
	<u>19,660</u>	<u>42,900</u>	<u>62,560</u>

Process 2

	Kg.	Rs.		Kg.	Rs.
Opening WIP	8,400	21,520	Finished goods	20,545	1,06,615
Process 1	13,100	55,961	Abnormal loss	1,100	5,707
Wages control		8,600	Normal loss	2,405	—
Raw materials control	4,050	15,600	Closing work in progress	1,500	6,559
Production overhead control		<u>17,200</u>			
	<u>25,550</u>	<u>1,18,881</u>		<u>25,550</u>	<u>1,18,881</u>

Equivalent units:

	Process 1 materials	Labour/Overhead	
Finished goods	20,545	20,545	
Closing work in progress	1,500	750	
Abnormal loss	<u>1,100</u>	<u>1,100</u>	
	<u>23,145</u>	<u>22,395</u>	
	Rs.	Rs.	
Costs:			
Opening work in progress	10,720	10,800	
Input	<u>71,561</u>	<u>25,800</u>	
	<u>82,281</u>	<u>36,600</u>	
Cost per equivalent unit (rounded)	3.56	1.63	
			Total
Valuation:	Rs.	Rs.	Rs.
Finished goods	73,039	33,576	1,06,615
Closing work in progress	5,333	1,226	6,559
Abnormal loss	3,910	1,797	5,707

(b)

Raw material control account

	Rs.		Rs.
Balances b/f	15,400	Production overhead control	1,450
Creditors control	46,260	Work in progress control	35,260
		Balance c/f	<u>24,950</u>
	<u>61,660</u>		<u>61,660</u>

Work in progress control account

	Rs.		Rs.
Balances b/f	21,520	Finished goods control	1,06,615
Raw material control	35,260	Abnormal loss	6,754
Production overhead control	42,940	Balance c/f	12,111
Wages control	<u>25,760</u>		
	<u>1,25,480</u>		<u>1,25,480</u>

Production overhead control account

	Rs.		Rs.
Stores control	1,450	Balance b/f	2,360
Wages control	2,980	Work in progress control	42,940
Cost ledger control	31,765		
Profit and loss	<u>9,105</u>		
	<u>45,300</u>		<u>45,300</u>

Abnormal loss account

	Rs.		Rs.
Balance b/f	1,685	Profit and loss	8,439
Work in progress control	<u>6,754</u>		
	<u>8,439</u>		<u>8,439</u>

Abnormal loss account

	Rs.		Rs.
Profit and loss	<u>930</u>	Balance b/f	<u>930</u>

Finished goods control account

	Rs.		Rs.
Balance b/f	27,130	Cost of sales	1,25,740
Work in progress control	<u>1,06,615</u>	Balance c/f	<u>8,005</u>
	<u>1,33,745</u>		<u>1,33,745</u>

11. (a) Applied overhead – actual = amount over/under applied
 Rs. 4,48,000/Rs 3,20,000 = budgeted application rate of 1.4
 Rs. 3,45,000 direct labour actual × 1.4 = Rs 4,83,000 applied
 Rs. 4,83,000 applied – Rs 4,59,000 total not traceable = Rs 24,000 over applied.
- (b) (i) Cost Driver: A cost driver is a characteristic of an event or activity that results in the increase of costs. In activity based costing the most significant cost drivers are identified.
- (ii) Activity cost pool: It is a measure of the frequency and intensity of demand placed on activities by cost objects. It is used to assign activity cost to cost objects.
12. Calculation of passenger kilometer

No. of Buses × Distance × "To" and "Fro" × Seating capacity × Percentage of seating capacity × No. of days in a month

$$= 5 \times 50 \times 2 \times 50 \times \frac{75}{100} \times 30 = 5,62,500 \text{ kms}$$

Operating cost sheet

Standing charges:-	Rs	Rs
Wages of drives, conductors and cleaners	24,000	
Salaries of office staff	10,000	

Taxation, Insurance	16,000	
Interest & other expenses	<u>20,000</u>	
		<u>70,000</u>
Running & Maintenance cost:-		
Repairs and maintenance	8,000	
Diesel and other oil	35,000	
Depreciation	<u>26,000</u>	<u>69,000</u>
		<u>1,39,000</u>
$\text{Cost per passenger km} = \frac{1,39,000}{5,62,500} = 0.2471.$		

13.

Estimate of cost

	Rs	Rs
<i>Unit level expenses</i>		
Direct materials (500 × Rs 22)	11,000	
Direct labour (500 × 2 hours × Rs 10)	10,000	
Machining (500 × 1 hour × Rs 30)	15,000	36,000
<i>Batch level expenses</i>		
Purchasing and receiving materials and components(6× Rs 100)	600	
Scheduling production (4 production runs × Rs 250)	1,000	
Setting up machines (4 production runs × 3 hours × Rs 120)	1,440	
Packaging and delivering(1 delivery at Rs 400)	400	3,440
<i>Product sustaining expenses</i>		
Engineering design and support(50 hours × Rs 80)		4,000
<i>Customer sustaining expenses</i>		
Marketing and order negotiating (2 visits × Rs 300 per visit)	600	
Customer support (50 support hours × Rs 50)	2,500	3,100
Estimated Cost		<u>46,540</u>

14. (a)

Process 1

	Kg.	Rs.		Kg.	Rs.
WIP b/f	3,000	8,144	Normal loss	400	—
Stock control	4,000	22,000	Process 2	2,400	27,360
Wages control		12,000	Abnormal loss	800	9,120
Overhead control	<u> </u>	<u>18,000</u>	WIP c/f	<u>3,400</u>	<u>23,664</u>
	<u>7,000</u>	<u>60,144</u>		<u>7,000</u>	<u>60,144</u>

Equivalent units:

	Material	Conversion
Process 2	2,400	2,400
Abnormal loss	800	800
CWIP	<u>3,400</u>	<u>1,360</u>
	<u>6,600</u>	<u>4,560</u>

	Rs.	Rs.
Costs	22,000	30,000
OWIP	<u>4,400</u>	<u>3,744</u>
	<u>26,400</u>	<u>33,744</u>
Cost/EU (Rs. 26,400 ÷ 6,600)	Rs. 4.00	Rs. 7.40
Valuation	Rs.	Rs.
		(Total)
Process 2	9,600	17,760
Abnormal loss	3,200	5,920
CWIP	13,600	10,064
		23,664

Process 2					
	Kg.	Rs.		Kg.	Rs.
WIP b/f	2,250	9,681	Normal loss	240	480
Process 1	2,400	27,360	Finished goods	2,500	55,250
Wages control		15,000	WIP c/f	2,600	34,060
Overhead control		22,500			
Abnormal gain	<u>690</u>	<u>15,249</u>			
	<u>5,340</u>	<u>89,790</u>		<u>5,340</u>	<u>89,790</u>

Equivalent units:

	Process 1	Conversion
Finished goods	2,500	2,500
Abnormal gain	(690)	(690)
CWIP	<u>2,600</u>	<u>1,040</u>
	<u>4,410</u>	<u>2,850</u>
	Rs.	Rs.
Costs:	27,360	37,500
OWIP	<u>4,431</u>	<u>5,250</u>
Total cost	31,791	42,750
Normal loss scrap value	<u>(480)</u>	<u>—</u>
	<u>31,311</u>	<u>42,750</u>
Cost/EU (Rs. 31,311 ÷ 4,410)	Rs. 7.10	Rs. 15.00
Valuation:	Rs.	Rs.
Finished goods	17,750	37,500
Abnormal gain	4,899	10,350
CWIP	18,460	15,600

Abnormal loss

	Rs.	Rs.
B/f	1,400	Profit and loss
Process 1	<u>9,120</u>	
	<u>10,520</u>	<u>10,520</u>

Abnormal gain

	Rs.		Rs.
Normal loss	1,380	Brought forward	300
Profit and loss	<u>14,169</u>	Process 2	<u>15,249</u>
	<u>15,549</u>		<u>15,549</u>

Overhead control

	Rs.		Rs.
Bank/expense creditors	54,000	Brought forward	250
		Process 1	18,000
		Process 2	22,500
		Profit and Loss – underabsorbed	<u>13,250</u>
	<u>54,000</u>		<u>54,000</u>

Sales

	Rs.		Rs.
Profit and loss	6,37,000	Brought forward	5,85,000
	<u>6,37,000</u>	Debtors	<u>52,000</u>
			<u>6,37,000</u>

Finished goods

	Rs.		Rs.
Balance b/f	65,000	Cost of sales	60,250
Process 2	<u>55,250</u>	Carry forward	<u>60,000</u>
	<u>1,20,250</u>		<u>1,20,250</u>

Cost of sales

	Rs.		Rs.
Balance b/f	4,42,500	Profit and loss	5,02,750
Finished goods	<u>60,250</u>		<u>5,02,750</u>
	<u>5,02,750</u>		<u>5,02,750</u>

ABC plc – Profit and loss account
for the year ended September, 2005

	Rs.		Rs.
Cost of sales	5,02,750	Sales	6,37,000
Abnormal loss	10,520	Abnormal gain	14,169
Overhead control	13,250		
Profit	<u>1,24,649</u>		<u>6,51,169</u>
	<u>6,51,169</u>		<u>6,51,169</u>

15.

Contract Accounts

(in Rs 000)

	A	B	C		A	B	C
Material on site b/fwd		20	30	Wages accrued b/fwd		5	10
Plant on site b/fwd		77	374	Material on site c/fwd	20		
Material control a/c	88	220	396	Plant on site c/fwd	150	20	230
Wages control a/c	45	100	220	Cost of work not certified c/fwd			55
Salaries	15	40	50	Cost of sales – current period	183	497	840
Plant control a/c	190	35		(balance) c/fwd			
Apportionment of HO expenses	10	20	50		353	522	1,135
Wages accrued c/fwd	5	10	15				
	353	522	1,135				
Cost of sales b/fwd	183	497	840	Attributable sales revenue (current period)*	183	442	1,122
Profit taken this period			282	Loss taken		55	
	183	497	1,122		183	497	1,122
Cost of work not certified b/fwd			55	Wages accrued b/fwd	5	10	15
Material on site b/fwd	20						
Plant on site b/fwd	150	20	230				

* Profit taken plus cost of sales for the current period or cost of sales less loss to date

Note

- Ø Profit/loss on the three contracts are calculated by deducting the cost of sales (both previous years and current year) from the value of work certified

(Rs 000)

Contract A	17	(Rs 200 – Rs 183)
Contract B	(55)	(Rs 860 – Rs 915)
Contract C	446	(Rs 2,100 – Rs 1,654)

Recommendation

Computation of profit taken for Contract C is as follows

(Rs000)

Cost of work certified(cost of sales to date = 814 + 840)	1,654
Cost of work not certified	55
Estimated costs to complete	305
Estimated cost of contract	2,014
Contract price	2,420
Anticipated profit	406

$$\text{Profit taken} = \frac{(0.90 \times \text{Rs}2,100)}{\text{Rs}2,420} \times \text{Rs}406 \text{ less profit previously transferred}$$

$$= \text{Rs } 3,17,000 - \text{Rs } 35,000 = \text{Rs } 2,82,000$$

- Ø No profit has been taken for Contract A as it is in very early stages of completion
- Ø Prudence concept has been utilized for Contract B. All loss has been taken.

16. (a) Production overheads were Rs. 40,000 under absorbed
(b) Rs. 5.40
17. (a) 112.5 (b) 90 (c) 50 (d) Rs 3.60 (e) Rs 2
18. (a) An incentive system should encourage workers to give their best. It should increase productivity and be simple to understand. Following are the important factors which may be considered before introducing an incentive system:
 - (i) Nature of product
 - (ii) Quantitative measurement
 - (iii) Should cover all categories of workers.
 - (iv) The incentive system should be acceptable by of labour trade union
 - (v) Easy computation
 - (vi) No restriction on earnings
 - (vii) Minimum wages should be guaranteed.

- (b) Normal wastage: It is defined as the loss of material which is inherent in the nature of work. Such wastage can be estimated in advance on the basis of past experience or technical specifications. If the wastage is within the specified limit, it is considered as normal. Suppose a company states that the normal wastage in Process A will be 5% of input. In such a case wastage upto 5% of input will be considered as normal wastage of the process.

When the wastage fetches no value, the cost of normal wastage is absorbed by good production units of the process and the cost per unit of good production is increased accordingly. If the normal wastage realises some value, the value is credited to the process account to arrive at normal cost of normal output.

Abnormal wastage: It is defined as the wastage which is not inherent to manufacturing operations. This type of wastage may occur due to the carelessness of workers, a bad plant, design etc. Such a wastage cannot be estimated in advance. In other words any wastage excess of normal wastage is abnormal wastage.

The units representing abnormal wastage are valued like good units produced and debited to the separate account which is known as abnormal wastage account. If the abnormal wastage fetches some value, the same is credited to abnormal wastage account. The balance of abnormal wastage account i.e. difference between value of units representing abnormal wastage minus realisation value is transferred to Costing Profit and Loss account for the year.

19. (a) Opportunity cost is primarily an economic concept. In Economics, the opportunity cost of a designated alternative is the greatest 'net benefit lost by selecting an alternative. It is the benefit given by rejecting one alternative and, selecting another."

Accounting takes the same view and defines it as the benefits forgone by rejecting the second best alternative in favour of the best. Opportunity costs represent the measurable value of opportunity bypassed by rejecting an alternative use of resources. It is the value in its best alternative use - the profit that is lost by the diversion of an input factor from one use to another. It is defined as the maximum contribution that is forgone by using limited resources for a particular purpose.

Opportunity cost concept is helpful to the management in making profitability calculations when one or more of the inputs required by one or more of the alternative courses of action is already available.

(b) The main points of distinction between "Cost control" and 'Cost reduction' are as follows:

Cost Control	Cost Reduction
1. It aims at achieving the established cost standards	It aims at achieving a reduction in cost by using any suitable technique like value analysis engineering; work study; standardisation; simplification etc.,
2. It is 'operated through targets or established standards and comparing them with actual performance. Identifying deviations from standards and taking corrective actions. Thus it lacks dynamic approach.	It is a continuous process of critical. cost examination,' analysis and challenging of established standards. Each aspect of the business. viz., products, process, procedures, methods, organisation, personnel, etc.-, is critically. examined and reviewed, with a view to improving- the efficiency and effectiveness and reducing the costs.
3. It assumes existence of norms or standards which are not challenged.	It assumes the existence of concealed potential savings in norms or standards.
4. It is a preventive function.	It is a corrective action.

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

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

- When defectives are normal and it is not beneficial to try to identify them job wise, the following methods are generally used:
 - Charged to good products: The cost of rectification of normal defectives is charged to good units. This method is used when defectives rectified are normal.
 - Charged to general overheads: Where the department responsible for defective cannot be correctly identified, because defectives caused in one department are reflected only on further processing, the rework costs are charged to general overheads.
 - Charged to departmental overheads: If the department responsible for defectives can be correctly identified, the rectification costs should be charged to that department.
- Where normal defectives are easily identifiable with specific jobs, the rework costs are debited to the jobs.
- When defectives are abnormal and are due to causes within the control of the organisation, the rework cost should be charged to the costing profit and loss account.

(b) Committed fixed costs, are those fixed costs that arise from the possession of: (i) a plant, building and equipment (e.g. depreciation, rent, taxes, insurance premium etc.) or (ii) a functioning organisation (i.e. salaries of staff). These costs remain unaffected by any short-run actions. These costs are affected primarily by long-run sales forecasts that, in turn

indicates the long-run capacity targets. Hence careful long range planning, rather than day-to-day monitoring, is the key to managing committed costs.

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

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