Paper – 8: Cost & Management Accounting

Time Allowed: 3 Hours **Full Marks: 100**

Question No 1 is Compulsory. Answers any five Questions from the rest.
Working Notes should form part of the answer.

Question.1

(a) Match the statement in Column I with the most appropriate statement in Column II: **[1×5 =5]**

Column I	Column II
(i) Value analysis	(a) Value of benefit lost by choosing alternative course of action
(ii) Pareto distribution	(b) Technique of cost reduction
(iii) Opportunity cost	(c) Reverse cost method
(iv) By-product cost accounting	(d) Single output costing
(v) Brick making	(e) ABC analysis

(b) Fill in the blanks:

(i) In ……contract with escalation clause, the contractor can claim for increase in prices of inputs to the agreed extent.
(ii) …… arises when the actual process loss is less than the normal predetermined process loss.
(iii) …… Costing reduce the possibility of under pricing.
(iv) No distinction is made between direct and indirect materials in …….. Costing.
(v) …….. of overheads occur when absorbed overheads exceed actual overheads.

(c) State whether the following statements are TRUE or FALSE: **[1×5 =5]**

(i) The cost of drawings, design and layout is an example of production cost.
(ii) Cost accounting is a government reporting system for an organistaion.
(iii) Internal instruction to buy the specified quantity and description is called stores requisition note.
(iv) The stock turnover ratio indicates the slow moving stocks.
(v) An automobile service unit uses batch costing.

(d) In the following cases, You are required to indicate the correct answer and give workings: **[2x5 =10]**

(i) Selling price of a product is ₹5 per unit, variable cost is ₹3 per unit and fixed cost is ₹12,000. Calculate the break-even point in unit.

(A) 2,400 units
(B) 4,000 units
(C) 6,000 units
(D) 12,000 units

(ii) Bharat Ltd. is preparing its cash budget for the period. Sales are expected to be ₹ 1,00,000 in April 2014, ₹2,00,000 in May 2014, ₹ 3,00,000 in June 2014 and ₹ 1,00,000 in July 2014. Half of all sales are cash sales, and the other half are on credit. Experience indicates that 70% of the credit sales will be collected in the month following the sale, 20% the month after that, and, 10% in the third month after the sale. Calculate the budgeted collection for the month of July 2014.

(A) ₹75,000
(B) ₹1,00,000
(C) ₹1,30,000
(D) ₹1,80,000

(iii) Calculate the total wages earned by a workman for a working day of 8 hours under Rowan plan:

- **Standard production per hour** **110 units**
- **Actual production of the day** **1,100 units**
- **Wages rate per hour** **₹ 30**

(A) ₹240
(B) ₹288
(C) ₹300
(D) ₹350

(iv) A concern producing a single product estimates the following expenses for a production period.

Particulars	₹
Direct Material	68,750
Direct Labour	68,750
Direct Expenses	6,875
Overhead Expenses	2,88,750

Estimate the overhead recovery rate based on prime cost.

(A) 2 times
(B) 2.13 times
(C) 4.5 times
(D) 5 times

(v) XYZ Company fixes the inter-divisional transfer prices for its products on the basis of cost plus an estimated return on investment in its divisions. The relevant portion of the budget for the Division A for the year 2014 -15 is given below.

Particulars	Amount in ₹

Fixed Assets	**5,00,000**
Current Assets (other than debtors)	**3,00,000**
Debtors	**2,00,000**
Annual Fixed Cost for the Division	**8,00,000**
Variable Cost Per unit of product	**10**
Budgeted Volume of Production per year (units)	**4,00,00**
Desired Return on Investment	**20%**

You are required to determine the transfer price for Division A.

(A) ₹12

(B) ₹12.50

(C) ₹10

(D) ₹10.50

Answer:

(a)

Column I	Column II
(i) Value analysis	**(b)** Technique of cost reduction
(ii) Pareto distribution	(**e)** ABC analysis
(iii) Opportunity cost	**(a)** Value of benefit lost by choosing alternative course of action
(iv) By-product cost accounting	**(c)** Reverse cost method
(v) Brick making	**(d)** Single output costing

(b)

(i) Fixed price.

(ii) Abnormal gain.

(iii) Absorption.

(iv) Process.

(v) Overabsorption.

(c)

(i) False – The cost of drawing, design and layout is an example of direct expense and not of **production cost**.

(ii) False – Cost accounting is an **internal reporting** system for an organistaion.

(iii) False - Internal instruction to buy the specified quantity and description is called **purchase** requisition note.

(iv) True – The statement is correct.

(v) False - An automobile service unit uses **job** costing.

(d)

(i) (C) 6,000 units

Contribution=Sales-variable cost

=5-3

=2

Break-even point=Fixed cost/contribution per unit
=12,000/2
=6,000 units

(ii) (D) ₹1,80,000

Collection from

July 2014 cash sales will be half of total sales or	₹50,000
From April ₹ 50,000 of credit sales, collection should be 10% or	₹5,000
From May ₹ 1,00,000 of credit sales, collections should be 20% or	₹20,000
From June ₹ 1,50,000 of credit sales, collection will be 70% or	₹ 1,05,000

Thus total collections will amount to ₹ 1,80,000

(iii) (B) ₹288

$$\text{Standard time} = \frac{1,100}{110} = 10 \text{ hrs}$$

Total wages in Rowan Plan:

Total wages

$$= \text{(Actual time x wages rate)} + \left(\frac{\text{Standard time - Actual time}}{\text{Standard time}}\right) \text{x Actual Time x wage rate}$$

$$= 8 \times 30 + \left(\frac{10 - 8}{10}\right) \times 8 \times 30$$

= ₹ 288.

(iv) (A) 2 times

Prime cost = Direct Material + Direct Labour + Direct Expenses	= ₹1,44,375
Overhead Expenses	= ₹ 2,88,750

Overhead recovery rate based on prime cost = ₹2,88,750/ ₹1,44,375 = 2 times or 200 % of prime cost.

(v) (B) ₹12.50

Computation of Transfer Price per unit

Particulars	Amount (₹)
Variable cost	10.00
Fixed cost (8,00,000 / 4,00,000)	2.00

Total Cost	12.00
Add: Desired return (10,00,000 x 20%) ÷ 4,00,000	0.50
Transfer Price	12.50

Question.2

(a) Singh Limited has received an offer of quantity discount on its order of materials as under:

Price per tone	Tones number
₹ 9,600	Less than 50
₹ 9,360	50 and less than 100
₹ 9,120	100 and less than 200
₹ 8,880	200 and less than 300
₹ 8,640	300 and above

The annual requirement for the material is 500 tonnes. The ordering cost per order is ₹12,500 and the stock holding cost is estimated at 25% of the material cost per annum.

Required

(I) Compute the most economical purchase level.

(II) Compute EOQ if there are no quantity discounts and the price per tonne is ₹10,500.

[5+2=7]

Answer

(I)

Order size (Q) (Units)	No. of orders A/Q (Units)	Cost of purchase Ax per unit cost	Ordering cost $\frac{A}{Q}$ ×₹12500	Carrying cost $\frac{Q}{2}$ ×C×25%	Total cost (3+4+5)
(1)	(2)	(3)	(4)	(5)	(6)
40	12.5	48,00,000 (500×9600)	1,56,250	48,000 $\left(\frac{40}{2}\times 9600\times 0.25\right)$	50,04,250
50	10	46,80,000 (500×9360)	1,25,000	58,500 $\left(\frac{50}{2}\times 9360\times 0.25\right)$	48,63,500
100	5	45,60,000 (500×9120)	62,500	1,14,000 $\left(\frac{100}{2}\times 9120\times 0.25\right)$	47,36,500
200	2.5	44,40,000 (500×8880)	31,250 (2.5×12500)	2,22,000 $\left(\frac{200}{2}\times 8880\times 0.25\right)$	46,93,250
300	1.67	43,20,000 (500×8640)	20,875 (1.67×12500)	3,24,000 $\left(\frac{300}{2}\times 8640\times 0.25\right)$	46,64,875

The above table shows that the total cost of 500 units including ordering and carrying cost is minimum (₹ 46,64,875) where the order size is 300 units. Hence the most economical purchase level is 300 units.

(II) EOQ = $\sqrt{\frac{2AO}{c \times i}} = \sqrt{\frac{2 \times 500 \times 12500}{10500 \times 25\%}}$ = 69 tonnes.

(b) Gross pay ₹12,80,000 (including cost of idle time hours paid to employee ₹85,000); Accommodation provided to employee free of cost [this accommodation is owned by employer, depreciation of accommodation ₹2,00,000, maintenance charges of the accommodation ₹1,00,000, municipal tax paid for this accommodation ₹5,000], Employer's Contribution to P.F. ₹1,00,000 (including a penalty of ₹2,000 for violation of PF rules), Employee's Contribution to P.F. ₹75,000. Compute the Employee cost. [6]

Answer:

Computation of Employee Cost

	Particulars	**Amount(₹)**
	Gross Pay (net of cost of idle time) =[12,80,000 (-) 85,000]	11,95,000
Add	Cost of accommodation provided by employer = Depreciation (+) Municipal Tax paid (+) maintenance charges = 2,00,000 + 5,000 + 1,00,000 = 1,93,000	3,05,000
Add	Employer's Contribution to PF excluding penalty paid to PF authorities [= 1,00,000 (-) 2,000]	98,000
	Employee Cost	**15,98,000**

Note:

- Assumed that the entire accommodation is exclusively used by the employee. Hence, cost of accommodation provided includes all related expenses/costs, since these are identifiable /traceable to the cost centre.
- Cost of idle time hours is an excludible item. Since it is already included in the gross pay, hence excluded.
- Penalty paid to PF authorities is not a normal cost. Since, it is included in the amount of contribution, it is excluded.

(c) State Explicit costs. [2]

Answer.

Explicit costs: These costs 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 because they involve immediate cash payment. These payments are recorded in the books of account and can be easily measured.

Question.3

(a) A radio manufacturing company finds that while it costs ₹6.25 each to make componenet X 273 Q, the same is available in the market at ₹5.75 each, with an assurance of continued supply. The breakdown of cost is:

Materials	**₹2.75 each**
Labour	**₹1.75 each**
Other Variable Costs	**₹0.50 each**
Depreciation and other Fixed Cost	**₹1.25 each**
Total Cost	**₹6.25 each**

(I) Should you make or buy?

(II) What would be your decision if the supplier offered the component at ₹4.85 each?

[3+2]

Answer:

(I) The variable cost of manufacturing a component is ₹5 calculated as follows:

Materials	₹2.75
Labour	₹1.75
Other Variable Costs	₹0.50
	₹5.00

The market price is ₹5.75. This is more than the variable cost by Re. 0.75. It is therefore not profitable to procure from outside because in any case the fixed costs will continue to be incurred. However, if the surplus capacity released on account of procuring the component from outside could be put to a more profitable use, it may be better to buy from outside rather than manufacturing the component.

(II) In case the supplier is prepared to supply the component at ₹4.85, there is saving of 15 paise in the variable cost too. Hence, it is profitable to procure from outside. The surplus capacity released may be put to some other profitable use.

(b) A manufacturing concern, engaged in mass production produces standardized electric motors in one of its departments. From the following particulars of a job of 50 motors you are required to value the work-in-progress and finished goods. [5+5]

I. Costs incurred as per job card:

Particulars	**₹**
Direct Material	**75,000**
Direct Labour	**20,000**
Overheads	**60,000**

II. Selling price per motor: ₹4,500

III. Selling and distribution expenses are at 30% of sales value.

IV. 25 Motors are completed and transferred to finished goods.

V. Completion stage of work-in-progress:

Particulars	
Direct Material	**100%**
Direct Labour & Overheads	**60%**

Answer:

Statement of equivalent production and cost

Particulars	Direct Material		Labour & Overheads		Total
	%	Quantity	%	Quantity	
Transferred to Finished Goods	100	25	100	25	
Work-in-progress	100	25	60	15	
Equivalent Units		50	40		
Total Cost (₹)		75,000	80,000		1,55,000
Cost per Equivalent Unit (₹)		1,500	2,000		3,500

Actual Cost of Production per Unit of Finished Goods

Particulars	₹
Direct Material	1,500
Labour & Overheads	2,000
Total	**3,500**

Market Value per Unit of Finished Goods

Particulars	₹
Selling price	4,500
Less: Selling & Distribution Overheads @ 30% of ₹4,500	1,350
Total	**3,150**

Stocks should be at the lower of the cost (i.e., ₹3,500) or market value (i.e., ₹3,150). Hence, basis of valuation will be market value in this case.

Value of Work-in-progress

Particulars	₹
Direct Material: ₹1,500 x 25 units	37,500
Labour & Overheads: ₹(3,150 – 1,500) × 15 units	24,750
Total	**62,250**

Value of Finished Goods Stock

25 units × ₹3,150	₹78,750
Total Value of Inventory = ₹78,750 + ₹62,250	1,41,000

Question.4

(a) P Ltd. has two divisions; S and T. S transfer all its output to T, which finishes the work. Costs and revenues at various levels of capacity are as follows:

Output	S. cost	T Net revenues (i.e. revenue minus costs incurred in T)	Profit
Units	**₹**	**₹**	**₹**
600	**600**	**2,950**	**2,350**

700	**700**	**3,250**	**2,550**
800	**840**	**3,530**	**2,690**
900	**1,000**	**3,780**	**2,780**
1,000	**1,200**	**4,000**	**2,800**
1,100	**1,450**	**4,200**	**2,750**
1,200	**1,800**	**4,350**	**2,550**

Company profits are maximized at ₹2,800 with output of 1,000 units. If P Ltd. wish to select a transfer price in order to establish S and T as profit centres, what transfer price would motivate the managers of S and T together to produce 1,000 units, no more and no less?

P Ltd. wants that the transfer price should be set at ₹2.10 per unit. Comment on this proposal.

[6+(4+1)]

Answer:

The transfer price will be notional revenue to S and notional cost to T.

- S will continue to produce more output until the costs of further production exceed the transfer price revenue.
- T will continue to want to receive more output from S until its net revenue from further processing is not sufficient to cover the incremental transfer price costs.

Output	Division S Incremental Costs	Division T Incremental Costs
Units	**₹**	**₹**
600	-	-
700	100	300
800	140	280
900	160	250
1,000	200	220
1,100	250	200
1,200	350	150

Since S will continue to produce more output if the transfer price exceeds the incremental costs of production, a price of at least ₹ 200 per 100 units (₹2 per unit) is required to 'persuade' the manager of S to produce as many as 1,000 units, but a price in excess of ₹ 250 per 100 units would motivate the manager of S to produce 1,100 units (or more).

By a similar argument, T will continue to want more output from S if the incremental revenue exceed the transfer costs from S. If T wants 1,000 units the transfer price must be less than ₹ 220 per 100 units. However, if the transfer price is lower than ₹ 200 per 100 units, T will ask for 1,100 units from S in order to improve its divisional profit further.

In summary

- The total company profit is maximized at 1,000 units of output.
- Division S will, want to produce 1,000 units, no more and no less, if the transfer price is between ₹ 2 and ₹ 2.50 (₹200 to ₹ 250 per 100 units).
- Division T will want to receive and process 1,000 units, no more and no less, if the transfer price is between ₹2 and ₹2.20
- A transfer price must therefore be selected in the range ₹2.00 to ₹2.20 per unit (exclusive).

If a price of ₹2.10 per unit is selected, profits at 1,000 units of output would be:

₹2.10			
Particulars	Division S	Division T	Total
Sales/net revenue	2,100	4,000	4,000
Costs	1,200	2,100	1,200
Profit	900	1,900	2,800

At a transfer price of ₹2.10 any increase in output above 1,000 units, or shortfall in output below this amount, would reduce the profits of the company as a whole, but also the divisional profits of S and T.

(b) Discuss the treatment of overtime wages in Cost Accounts. [4]

Answer:

Overtime wages and its Treatment:

Work done by a worker beyond his normal working hours is known as overtime. Payment made to the worker for working overtime is known as overtime premium. Normal working hours may be as specified in the Factories Act, 1948 or work agreement with the union. The overtime is paid at a higher rate than the normal rate - usually double - one for normal wages during extra time and the other for additional wages for overtime.

- Overtime hours at normal rate are treated as labour cost and charged to production accordingly but premium paid during the overtime is recovered as production overhead through overhead recovery rate.
- If overtime is for a specific job to meet the deadlines or to carry out specific rush orders for which extra revenue is received, then the entire labour cost, should be charged to that job.
- If overtime wages are paid due to carelessness or negligence of a worker of a particular department, then the entire overtime cost is charged to that department.
- If overtime premium is paid due to abnormal causes such as floods, earthquakes, etc., it should be charged to Costing Profit and Loss A/c.

Question.5

(a) A factory incurred the following expenditure during the year 2014:

		₹
Direct material consumed		**15,00,000**
Manufacturing Wages		**10,00,000**
Manufacturing overhead:		
Fixed	**4,00,000**	
Variable	**3,50,000**	**7,50,000**
		32,50,000

In the year 2015, following changes are expected in production and cost of production.

(I) Production will increase due to recruitment of 50% 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 15% in Fixed overhead and 70% in Variable overhead.
(IV) The cost of direct material will be decreased by 5%.
(V) The company desire to earn a profit of 10% on selling price.
Ascertain the cost of production and selling price. [8]

Answer:

Budgeted Cost Sheet for the year 2015:

Particulars			Amount ₹
Direct material consumed		15,00,000	
Add: 35% due to increased output		5,25,000	
		20,25,000	
Less: 5% for decline in price		1,01,250	19,23,750
Direct wages (manufacturing)		10,00,000	
Add: 50% increase		5,00,000	15,00,000
Prime cost			34,23,750
Manufactured Overhead:			
Fixed	4,00,000		
Add: 15% increase	60,000		
		4,60,000	
Variable	3,50,000		
Add: 70% increase	2,45,000		
		5,95,000	10,55,000
Cost of production			44,78,750.00
Add: 1/9 of Cost or 10% on selling price			4,97,638.88
Selling price			49,76,388.88

Production will increase by 50% but efficiency will decline by 10%.
150 – 10% of 150 = 135%
So increase by 35%.

Note: If we consider that variable overhead once will change because of increase in production (From 3,50,000 to 5,95,000) then with efficiency declining by 10% it shall be 5,35,500 and then again as mentioned in point No. (iii) of this question it will increase by 70% then variable overhead shall be ₹ 5,35,500 × 170% = 9,10,350. Hence, total costs shall be ₹ 47,94,100 and profit shall be 1/9th of ₹ 47,94,100 = 5,32,678. Thus, selling price shall be 53,26,778.

(b) Relevant data relating to a Company are:

	Products			
	A	**B**	**C**	**Total**
Production and sales (Units)	**60,000**	**40,000**	**16,000**	

Raw material usage in units	**10**	**10**	**22**	
Raw material costs (₹)	**45**	**40**	**22**	**24,76,000**
Direct labour hours	**2.5**	**4**	**2**	**3,42,000**
Machine hours	**2.5**	**2**	**4**	**2,94,000**
Direct Labour Costs (₹)	**16**	**24**	**12**	
No. of production runs	**6**	**14**	**40**	**60**
No. of deliveries	**18**	**6**	**40**	**64**
No. of receipts	**60**	**140**	**880**	**1,080**
No. of production orders	**30**	**20**	**50**	**100**

Overheads:	**₹**
Setup	**60,000**
Machines	**15,20,000**
Receiving	**8,70,000**
Packing	**5,00,000**
Engineering	**7,46,000**

The Company operates a JIT inventory policy and receives each component once per production run.

Required:

(I) Compute the product cost based on direct labour-hour recovery rate of overheads.

(II) Compute the product cost using activity based costing. [2+5]

Answer:

I. Traditional method of absorption of overhead i.e. on the basis of Direct Labour Hours

$$\text{Total Overheads} = \frac{36,96,000}{[\text{Hours}(60,000 \times 2.5) + (40,000 \times 4) + (16,000 \times 2)}$$

= 36,96,000/3,42,000

= ₹10.81 per labour hour

Calculation of Factory cost of the products under Traditional Method of apportioning overheads:

	A	**B**	**C**
	₹	₹	₹
Raw Material	45.000	40.00	22.00
Direct Labour	16.000	24.00	12.00
Overheads (2.5 x 10.81)	27.025	43.24	21.62
Factory cost (Total)	88.025	107.24	55.62

II. Under Activity Based Costing System

Computation of Cost driver's rates

Cost Pool	**Cost Driver**	**Cost per cost driver**
Set up cost	No. of production run	60,000/ 60 = ₹ 1,000 per run
Machines	Machine hour rate	15,20,000/ 2,94,000 = ₹5.17 per machine hour
Receiving cost	No. of receipts	8,70,000/ 1,080 = ₹805.56
Packing	No. of deliveries	5,00,000/ 64= ₹7,812.5 per delivery
Engineering	No. of production order	7,46,000/ 100= ₹7,460 per order

Question.6

(a) List out the advantages of Cost control. [5]

Answer:

Advantages of Cost Control

The advantages of cost control are mainly as follows

- Achieving the expected return on capital employed by maximizing or optimizing profit
- Increase in productivity of the available resources
- Reasonable price of the customers
- Continued employment and job opportunity for the workers
- Economic use of limited resources of production
- Increased credit worthiness
- Prosperity and economic stability of the industry

(b) A factory has a key resource (bottleneck) of Facility X which is available for 15,650 minutes per week. Budgeted factory costs and data on two products, A and B, are shown below:

Product	Selling price/Units	Material cost/Unit	Time in Facility X
A	₹30	₹15.00	2.5 minutes
B	₹30	₹13.125	5 minutes

Budgeted factory cost per week:

	₹
Direct labour	18,750
Indirect labour	9,375
Power	1,312.5
Depreciation	16,875
Space Costs	6,000
Engineering	2,625
Administration	3,750

Actual production during the last week is 2,375 units of product A and 325 units of product B. Actual factory cost was ₹58,687.5.

Calculate:

(I) Total factory costs (TFC)

(II) Cost per factory minute

(III) Return per factory minute for both products

(IV)TA ratios for both product

(V) Throughput cost per the week

(VI)Efficiency ratio [1+1+3+2+$1\frac{1}{2}$+$1\frac{1}{2}$]

Answer:

(I) Total factory cost= Total of all costs except materials.

= ₹18,750 + ₹9,375 + ₹1,312.5 + ₹16,875 + ₹6,000 + ₹2,625 + ₹3,750

= ₹58,587.5

(II) Cost per Factory Minute=Total Factory Cost÷ Minutes available

= ₹58,687.5 ÷ 15,650
=₹3.75

(III)

(a) Return per bottleneck minute for the product A= $\frac{\text{Selling Price} - \text{Material Cost}}{\text{Minutes in bottleneck}}$
= (30-15)/ 2.5
= ₹6

(b) Return per bottleneck minute for the product B= $\frac{\text{Selling price} - \text{Material Cost}}{\text{Minutes in bottleneck}}$
= (30 – 13.125)/ 5
= ₹3.375

(IV) Throughput Accounting (TA) Ratio for the product A= $\frac{\text{Return per Minute}}{\text{Cost per Minute}}$
= (6/ 3.375)
=₹1.778

Throughput Accounting (TA) Ratio for the product B= $\frac{\text{Return per Minute}}{\text{Cost per Minute}}$
= (3.375/ 3.75
=₹0.9

Based on the review of the TA ratios relating to two products, it is apparent that if we only made product B, the enterprise would suffer a loss, as its TA ratio is less than 1. Advantage will be achieved, when product A is made.

(V) Standard minutes of throughput for the week:
= [2,375 × 2.5] + [325 ×5]
= 5,937.5 + 1,625
=7,562.5 minutes
Throughput Cost per week:
=7,562.5 × ₹3.75 per minutes
=₹28,359.375

(VI) Efficiency % =(Throughput Cost/ Actual TFC) %
= (₹28,359.375/ ₹58,687.5) ×100
=48.323%

The bottleneck resource of facility A is advisable for 15,650 minutes per week but produced only 30,250 standard minutes. This could be due to:

- The process of a 'wandering' bottleneck causing facility A to be underutilized.
- Inefficiency in facility A.

Question.7

(a) The share of production and the cost-based fair price computed separately for a common product for each of the four companies in the same industry are as follows:

	A	B	C	D
Share of Production (%)	**40**	**25**	**20**	**15**
Costs:				
Direct materials (₹ /Unit)	**75**	**90**	**85**	**95**
Direct Labour (₹ /Unit)	**50**	**60**	**70**	**80**
Depreciation (₹ /Unit)	**150**	**100**	**80**	**50**
Other Overheads(₹ /Unit)	**150**	**150**	**140**	**120**
Total (₹ / Unit)	**425**	**400**	**375**	**345**
Fair Price (₹ /Unit)	**740**	**615**	**550**	**460**
Capital employed per Unit:				
(i) Net Fixed Assets(₹ /Unit)	**1,500**	**1,000**	**800**	**500**
(ii) Working Capital (₹ /Unit)	**70**	**75**	**75**	**75**
Total (₹ /Unit)	**1,570**	**1,075**	**875**	**575**

Required:

What should be the uniform price that should be fixed for the common product? [10]

Answer:

Assume Total Production = 100

	A	B	C	D	Total
Price	740	615	550	460	
(-)Cost	425	400	375	345	
Profit per unit	315	215	175	115	
Share of production(%)	40	25	20	15	
Total Return	12,600	5,375	3,500	1,725	23,200
Capital Employed	1,570 x 40	1,075 x 25	875 x 2	575 x 15	1,15,800

$\therefore$ Average Return on Capital Employed = $\frac{23,200}{1,15,800}$ = 20% (approx)

Calculation of Uniform Price

A	[425 + (20% of 1,570)] x 40	29,560
B	[400 + (20% of 1,075)] x 25	15,375
C	[375 + (20% of 875)] x 20	11,000
D	[345+ (20% of 575)] x 15	6,900
	Total Cost + Profit	62,835
	No. of Units	100

Uniform Price Per Unit $\left(\frac{62,835}{100}\right)$ = 628.35

(b) How do you deal with the following in Cost Accounts? [$2^1/_2+2^1/_2$]

(i) Fringe benefits

(ii) Data processing cost.

Answer:

The treatment will be as follows:

(i) Fringe benefits**:** The employees are paid additional benefits like leave with pay, contributions to the schemes like provident fund, E.S.I., medical reimbursement, subsidized canteen facility, leave travel concession, group insurance, etc. These benefits are called 'fringe benefits'. If these benefits are provided for the factory personnel, they are treated as Production Overhead and are apportioned to all cost centres, including both production and service cost centres on the basis of number of employees in each centre. The fringe benefits provided to the office staff, sales staff and distribution staff should be treated as Administration, Selling and Distribution Overheads respectively.

(ii) In the environment of processing information with the help of computers, the data processing cost represents the cost incurred for processing data relating to accounts, secretarial, personnel, finance, marketing, sales etc. This may be done either utilizing in house facilities or hiring outside facilities. The costs incurred is accumulated for separate service centre if in-house facilities are made available. Where the costs of data processing centre or hiring charges are identifiable to a particular department or activity it should be charged with its portion of cost. In case of common costs incurred for service of all departments, the data processing cost should be apportioned to different departments on equitable basis.

Question.8

Write short note on any three: [3x5=15]

(a) The procedure for the valuation of Work-in-process.
(b) The principles to be followed while taking credit for profit on incomplete contracts.
(c) The advantages of integrated accounting.
(d) The different methods of by-product cost accounting.
(e) The advantages of a Balanced Score-card.

Answer:

(a) The procedure for the Valuation of Work-in process:

The valuation of work-in-process can be made in the following three ways, depending upon the assumptions made regarding the flow of costs.

- First-in-first out (FIFO) method
- Last-in-first out (LIFO) method
- Average cost method

A brief account of the procedure followed for the valuation of work-in-process under the above three methods is as follows;

FIFO method: According to this method the units first entering the process are completed first. Thus the units completed during a period would consist partly of the units which were incomplete at the beginning of the period and partly of the units introduced during the period.

The cost of completed units is affected by the value of the opening inventory, which is based on the cost of the previous period. The closing inventory of work-in-process is valued at its current cost.

LIFO method: According to this method units last entering the process are to be completed first. The completed units will be shown at their current cost and the closing-work in process

will continue to appear at the cost of the opening inventory of work-in-progress along with current cost of work in progress if any.

Average cost method: According to this method opening inventory of work-in-process and its costs are merged with the production and cost of the current period, respectively. An average cost per unit is determined by dividing the total cost by the total equivalent units, to ascertain the value of the units completed and units in process.

(b) Under Contract Accounting it may be noticed that certain contracts are completed, while others are still in progress at the end of a financial year. These incomplete contracts may require a few more years for their completion. The figures of profit made (the excess of credit over the debit items in a contract) on completed contracts can be safely taken to the credit of Profit and Loss Account, but this practice is not being followed in the case of incomplete contracts.

In the case of incomplete contracts the entire profit is not being credited to Profit and Loss Account because some provision is to be made for meeting contingencies and unforeseen losses. There are no hard and fast rules regarding the calculation of figure of profit to be taken to the credit of profit and loss account. However, the following principles may be followed:–

- Profit should be considered in respect of work certified and uncertified work should be valued at cost.
- If the amount of work certified is less than 1/4th of the contract price, no profit should be taken to Profit and Loss Account. The entire amount in such contracts should be kept as reserve for meeting out contingencies.
- If the amount of work certified is 1/4th or more but less than 1/2 of the contract price, then 1/3rd of the profit disclosed as reduced by the percentage of cash received from the contractee should be taken to the Profit and Loss Account. The balance should be allowed to remain as a reserve.
- If the amount of work certified is $\frac{1}{2}$ or more of the contract price, then 2/3rd of the profit disclosed as reduced by the percentage of cash received from the contractee, should be taken to the Profit and Loss Account. The balance should be treated as reserve.
- If the contract is near completion, the total cost of completing the contract may be estimated if possible. By deducting the total estimated cost from the contract price, the estimated total profit of the contract should be calculated. The proportion of total estimated profit on cash basis, which the work certified bears to the total contract price should be credited to profit and loss account.
- The entire loss, if any, should be transferred to the Profit and Loss Account.

(c) Advantages of Integrated Accounting: Integrated Accounting is the name given to 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. In other words, information and data should be recorded in such a way so as to enable the firm to ascertain the cost (together with the necessary analysis) of each product, job, process, operation or any other identifiable activity. For instance, purchases are

analysed by nature of material and its end-use. Purchases account is eliminated and direct postings are made to Stores Control Account, Work-in-Progress account, or Overhead Account. Payroll is straightway analysed into direct labour and overheads. It also ensures the ascertainment of marginal cost, variances, abnormal losses and gains. In fact all information that management requires from a system of Costing for doing its work properly is made available. The integrated accounts give full information in such a manner so that the profit and loss account and the balance sheet can be prepared according to the requirements of law and the management maintains full control over the liabilities and assets of its business.

The main advantages of Integrated Accounting are as follows:

- 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.
- There is no duplication of recording of entries and efforts to maintain separate set of books.
- Costing data are available from books of original entry and hence no delay is caused in obtaining information.
- The operation of the system is facilitated with the use of mechanized accounting.
- Centralization of accounting function results in economy.

(d) The different methods of by-product cost accounting are as follows:

- Opportunity or replacement cost method : This method is used when by-products are consumed in the same factory as raw material in place of existing material is in use. The cost of material replaced is considered as replacement or opportunity cost of the by-product and is credited to cost of production of main products. The opportunity cost or replacement cost which otherwise would have been incurred if the by-product were to be purchased from outside suppliers, then such product will be valued at market value of like material.
- Standard cost method : The by-products are valued at a predetermined standard rate for each product which may be based on technical assessment. Standard cost of by-product is credited to the Process Account of the main product. This method makes it convenient to ascertain the cost of main product due to operational difficulties in computation of value of by-product.
- Joint cost proration method : Where the by-products are having considerable commercial value or importance or where adoption of normal methods for by-product accounting may not be fair or reasonable to the main product or to the by-product, then the by-products will be treated as equal footing with the main products both for valuation and accounting of costs. The joint costs may be divided over joint products and by-products by using physical unit method (at the split-off point) or ultimate selling price (if sold).

(e) The advantages of a balanced score-card are as under :

- Balanced score-card brings together in a single management report, many of the seemingly disparate elements of a company's competitive agenda (i.e., becoming customer oriented, shortening response time, improving quality, emphasizing team-work and reducing new product launch time.)

- Score-card guards against sub-organization. It forces senior managers to consider all important operational measures together, the balanced score-card lets team see whether an improvement in one area may have been achieved at the expense of another.
- The balanced score-card provides strategic feedback and learning and guards against traditional performance measures which yield sub-optimal results.
- The balanced score-card facilitates communication and understanding.
- The balanced score-card brings to focus strategy and vision.