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 appropriate statement in Column II [1x5]

(i) Scatter Diagram	(A) Supervisor's Salaries
(ii) Escalator Clause	(B) Point Rating
(iii) Stepped Cost	(C) Technique to assist interfirm comparison
(iv) Uniform Costing	(D) Splitting of Semi-Variable Costs
(v) Job evaluation	(E) Contract Costing

(b) State whether the following statements are TRUE or FALSE: [1x5]

(i) Time and Motion study which is a function of the engineering department is useless for the determination of wages.
(ii) Integral accounts merge financial and cost accounts in one set of accounts.
(iii) In ZBB important reference is made to previous level of expenditure.
(iv) A key factor, which at a particular time or over a period will not limit the activities of the organization.
(v) Profit planning and control is not a part of budgetary control mechanism.

(c) Fill in the blanks: [1x5]

(i) Two methods used for calculation of equivalent production are …….. and ……
(ii) Reorder level is …… multiplied by ……
(iii) Transfer Pricing have significance for the purpose of measurement of …… performance.
(iv) A flexible budget recognizes the behavior of ……. and ……
(v) Profit volume graph shows the relationship between …….. and ……..

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

(i) If the ordering cost per order is ₹ 20, carrying cost is 10% of average inventory value, purchase cost is ₹ 10 per unit and economic order quantity (EOQ) for the product is 400 units; the expected annual demand for the product will be……..
(A) 2,000 units
(B) 4,000 units
(C) 5,000 units
(D) 6,000 units

(ii) Selling price of a product is ₹ 8 per unit, variable cost is ₹ 5 per unit and fixed cost is ₹ 12,000. B.E point in units will be…….
(A) 2,400 units
(B) 4,000 units
(C) 5,000 units

(D) None of the above

(iii) The cost per unit of a product manufactured in a factory of ZENION LTD. amounts to ₹160 (75% variable) when production is 10,000 units. If the production increases by 25% what would be the total cost of production per unit?
(A) ₹132
(B) ₹152
(C) ₹160
(D) ₹180

(iv) Time allowed for a job is 45 hours; a worker takes 42 hours to complete the job. Time rate per hour is ₹15. The total earnings of the worker under Halsey Premium Plan will be…….
(A) ₹600.50
(B) ₹612.50
(C) ₹622.50
(D) ₹652.50

(v) The following figures have been given for Profit and Sales from the accounts of ZEESLIN LTD.

Year	Sales (₹)	Profit (₹)
2013	2,00,000	20,000
2014	3,00,000	40,000

To earn a Profit of ₹50,000, sales will be……

(A) ₹2,60,000
(B) ₹3,00,000
(C) ₹3,50,000
(D) ₹4,00,000

Answer:

1. (a) (i) - (D)
(ii) - (E)
(iii) - (A)
(iv) - (C)
(v) - (B)

(b) (i) False
(ii) True
(iii) False
(iv) False
(v) False

(c) (i) FIFO, average method
(ii) Maximum usage, maximum lead period
(iii) Divisional
(iv) Variable, fixed cost
(v) Sales, Profit

(d) **(i)** **(B) 4,000 units**

A=Annual demand of the product

O=Ordering cost
C=Carrying cost

$$EOQ = \sqrt{\frac{2AO}{C}}$$

$$=>400= \sqrt{\frac{2 \times A \times 20}{1}}$$

=>A=4,000 Units

(ii) **(B) 4,000 units**

Break-even point=Fixed Cost/Contribution per unit
=12,000/8-5
=4,000 units

(iii) **(B) ₹152**

Variable Cost per unit = ₹160 x 0.75 = ₹120
Fixed Cost per unit = (160 - 120) = ₹40
Total fixed Cost = 10,000 x 40 = ₹4,00,000
Total Cost per unit when production is 12,500 units (10,000 x 1.25)

$$= 120 + \frac{4,00,000}{12,500} = 120 + 32 = ₹152$$

(iv) **(D)₹652.50**

Total Earnings	=Time taken X Rate + 50% [Time allowed - Time taken] Rate
Total Earnings	=42X₹15+50% [45-42] ₹15
Total Earnings	=₹630+₹22.5= ₹652.50

(v) **(C)₹3,50,000**

$$P/V Ratio = \frac{Change\ in\ Profit}{Change\ in\ Sales} x100 = \frac{20,000}{1,00,000} x100 = 20\%$$

Fixed Cost = Sales x P/V Ratio – Profit = 2,00,000 x 0.2 – 20,000
= ₹20,000

Sales required to earn a desired Profit of ₹50,000
= (Fixed Cost + Desired Profit) / P/V Ratio
= (₹20,000 + 50,000) ÷ 0.2 = ₹3,50,000

Question:

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

		₹
Direct material consumed		**12,00,000**
Manufacturing Wages		**7,00,000**
Manufacturing overhead:		
Fixed	**3,60,000**	
Variable	**2,50,000**	**6,10,000**
		25,10,000

In the year 2015, following changes are expected in production and cost of 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. [6+2]

(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:

2. (a)

Budgeted Cost Sheet for the year 2015

Particulars			Amount (₹)
Direct material consumed		12,00,000	
Add: 44% due to increased output		5,28,000	
		17,28,000	
Less: 6% for decline in price		1,03,680	16,24,320
Direct wages (manufacturing)		7,00,000	
Add: 60% increase		4,20,000	11,20,000

Prime cost			27,44,320
Manufactured Overhead:			
Fixed	3,60,000		
Add: 20% increase	72,000		
		4,32,000	
Variable	2,50,000		
Add: 60% increase	1,50,000		
		4,00,000	8,32,000
Cost of production			35,76,320
Add: 1/9 of Cost or 10% on selling price			3,97,368.88
Selling price			39,73,688.88

Production will increase by 60% but efficiency will decline by 10%.
160 – 10% of 160 = 144%
So increase by 44%.

(b) (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:

3. (a) ABC Ltd 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:

Standard		**Unit cost (₹)**

Direct Material	**5 kgs @ ₹ 4.20**	**21.00**
Direct Labour	**3 hours @ ₹ 3.00**	**9.00**
Factory Overhead	**₹ 1.20 per labour hour**	**3.60**
	Total manufacturing Cost	**33.60**

The production schedule for the month of June, 2014 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 of June, 2014, 2,25,000 kgs of material at the rate of ₹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 ₹3,87,840
Total factory overhead cost incurred ₹1,00,000
Sales 40,000 units
Selling price to be so fixed as to allow a mark-up of 20 per cent on selling price.

Required:

(i) Calculate material variances based on consumption of material.

(ii) Calculate labour variances and the total variance for factory overhead.

(iii) Prepare Income statement for June, 2014 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. [3+4+3+2=12]

(b) State the treatment of By-product Cost in Cost Accounting, when they are of small total value. [3]

Answer:

3. (a) (i) Material variances:

(a) Direct material cost variance = Standard cost – Actual cost
= 40,960 *21 – 2,05,600 * 4.50
= 8,60,160 – 9,25,200 = 65,040 (A)

(b) Material price variance = Actual Quantity (Standard Price – Actual Price)
= 2,05,600 (4.20 – 4.50) = 61,680 (A)

(c) Material usages variance = Standard Price (Standard Quantity – Actual Quantity)
= 4.20 (40,960 *5 – 2,05,600) = 3,360 (A)

(ii) Labour variances and overhead variances:

(a) Labour cost variance = Standard cost – Actual cost
= 40,960 * 9 – 3,87,840 = 19,200 (A)

(b) Labour rate variance = Actual Hours (Standard Rate – Actual Rate)
=1,21,200 (3 – 3.20) = 24,240 (A)

(c) Labour efficiency variance = Standard Rate (Standard Hours – Actual Hours)

= 3 (40,960 * 3 – 1,21,200) = 5,040 (F)

(d) Total factory overhead variance = Factory overhead absorbed
– factory overhead incurred
= 40,960 *3 *1.20 – 1,00,000 = 47,456 (F)

(iii) (I) Preparation of income statement

Calculation of unit selling price	₹
Direct Material	21
Direct Labour	9
Factory overhead	3.60
Factory cost	33.60
Margin 25% on factory cost	8.40
Selling Price	42.00

(II) Income statement

		₹
Sales 40,000 units *42		16,80,000
Less: Standard cost of goods sold 40,000 * 33.60		13,44,000
		3,36,000
Less: Variances adverse	61,680	
Material Price variance	3,360	
Material quantity variance	24,240	89,280
Labour rate variance		2,46,720
Add: Favourable variance		
Labour efficiency variance	5,040	
Factory overhead	47,456	52,496
Actual gross margin		2,99,216

(iv) Labour hour saved

		₹
Standard labour hours		1,22,880
Actual labour hour worked		1,21,200
Labour hour saved		1,680
Bonus for saved labour	= 0.50 (1,680 * 3)	2,520

(b) Treatment of By-product cost in Cost Accounting:

When the by-products are of small total value:

- Miscellaneous Income or Other Income Method
  This method is adopted when the sales value of the products is very small as compared to the sales value of the main product and is sold off without further processing. Here the sales value of the by-product is credited to the Costing Profit & Loss A/c as miscellaneous income. The entire joint costs (or common processing costs) are apportioned among the main products and nothing is apportioned to the by-product.
- Total cost less sales value of by-product
  The sales value of the by-products is deducted from the total common costs of the main products. The common costs, so reduced will then be apportioned among the main products. If the by-product requires further processing or certain selling and distribution expenses are required to be incurred, then these costs will have to be first

subtracted from the sales value of the by-products. The balance amount, if any is to be deducted from the common costs.

Question

4. (a) State 'Operating Costing' and mention at least five activities where it is applicable. [2+5]

(b) A retail dealer in garments is currently selling 24,000 shirts annually. He supplies the following details for the year ended 31st March 2014.
Selling price per shirt: ₹ 800
Variable cost per shirt: ₹ 600
Fixed Cost:
Staff salaries: ₹24,00,000
General Office Cost: ₹8,00,000
Advertising Cost: ₹8,00,000
As a CMA, you are required to answer the following each part independently:
(i) Calculate Break Even Point and margin of safety in sales revenue and number of shirts sold. [2+2]
(ii) Assume that 28,000 shirts were sold during the year, find out the net profit of the firm. [2]
(iii) Assuming that in the coming year, an additional staff salary of ₹ 8,00,000 is anticipated, and price of shirt is likely to be increased by 15%, what should be the break- even point in number of shirts and sales? [2]

Answer:

4. (a) Operating Costing is the cost of providing services. Service Costing is the term applied to describe the system used to find the cost of performing a service such as transport, gas or electricity. Service costs are particularly suitable for the costing of road and rail transport services and they are also utilized by electricity undertaking, hospitals, canteen, boiler-house, etc. The method of costing is different from the used in connection with production, and the difference lies chiefly in the manner of assembling the cost data and finally in its allocation to cost units. The principle of Service or Operating Costing is to accumulate costs under suitable headings and to express them in terms of the unit of service rendered.

A major problem that can arise in Operating Costing is determining suitable cost units to be used for cost ascertainment. The following are some examples of cost units used in different enterprises:

Enterprises	**Service Cost Units**
Hospital	Patient-days, per bed day, per operations
Boiler-house	Quantity (Kg.) of steam raised
Transport Department	Tonne-Km, Kms. travelled
Bus Companies	Passenger-Km, Seat Km
Electricity Boards	Killowatt-hours
Canteen	Meals served; Cups of tea sold
Road maintenance	Kilometres of road maintained

Operating Costing is similar to output costing. All costs are suitably classified under fixed and variable. These costs are then collected, analysed and expressed in term of an appropriate cost unit. The classification of costs into fixed and variable is very important, as it draws management's attention to the fixed costs to which they are committed regardless of the units of service ultimately given.

(b) (i) Break Even Point : [units] = Fixed Cost / Contribution Per Unit
= ₹40, 00, 000/₹200
= 20,000 number of shirts

Note: Contribution per units =selling price – variable cost per unit
= ₹800 – ₹600 = ₹200

Break Even Point [sales value] = 20000 units × ₹800 = ₹1,60,00,000

Margin of safety = Actual Sales – Break Even Sales
= (24, 000 shirts × ₹800) – ₹1,60,00,000
= ₹1,92,00,000 – ₹1,60,00,000
= ₹32, 00, 000

Margin of safety [units] = 24,000 shirts – 20,000 shirts = 4000 shirts

(i) Amount of profit if 28,000 shirts are sold :
Sales [units] = Fixed Cost + (Profit / Contribution per unit)
Or, 28, 000 = ₹40, 00, 000 + (Profit / ₹200)
Or, Profit = ₹16, 00, 000

(ii) Revised Break Even Point if fixed cost rise by ₹8, 00, 000 and selling price increase by 15%:
New selling price = ₹800 + 15% of 800 = ₹920,
New fixed cost = ₹40, 00, 000 + ₹8,00,000 = ₹48,00,000
Revised Break Even Point [number of shirts] = ₹48,00,000 / (₹920 – ₹600)
= 15,000 shirts
Break Even Point (₹) = 15,000 x ₹920 = ₹1,38,00,000

Question

5. (a) Explain Zero-Base Budgeting (ZBB). [5]

(b) Henna Limited uses a small casting in one of its finished products. The castings are purchased from a foundry. Henna Limited purchases 54,000 casting per year at a cost of ₹800 per casting.
The castings are used evenly throughout the year in production process on a 360 day per year basis. The company estimates that it costs ₹9,000 to place a single purchase order and about ₹300 to carry one casting in inventory for a year. The carrying costs result from the need to keep the castings in carefully controlled temperature and humidity conditions, and from the high cost of insurance.
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 table-

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

(i) Compute the Economic Order Quantity.
(ii) Assume that the company is willing to take a 15% risk of being out of a stock. What would be the safety stock and the Re-Order point?
(iii) Assume that the company is willing to take a 5% risk of being out of stock. What would be the safety stock and Re-Order point?

(iv) Refer to the original data. Assume that using process re-engineering the company reduces its cost of placing a purchase of order to only ₹600. In addition, the company estimates that when the waste and in efficiency caused by inventories are considered, the true cost of carrying a unit in stock is ₹720 per year. (a) Compute new EOQ and (b) How frequently would the company be placing an order, as compared to the old purchasing policy? [2+2+2+4=10]

Answer

5. (a) Zero Base Budgeting is a method of budgeting starting from scratch or zero level. Proposals for the coming period should be based on merit and not related to past performance. Budgets prepared by conventional methods are the incremental type of budget based on actual performance in the past periods. In the zero base budget, the results of the past year is not accepted as a basis, since the past may conceal inefficiencies.

Zero Base Budget is mainly prepared by taking the following steps.

- Identification of decision units
- Preparation of decision packages.
- Ranking of decision packages using cost benefit analysis.
- Allotment of available funds according to the priority determined by ranking each decision package is a self contained module explaining the need for a certain activity, its costs, its benefits consequences if the packages is not accepted etc. The ranking of package based on cost benefit analysis by the difficult levels of management starring from the bottom upward ensures allotment of funds to relatively more important and essential activities.

(b)

(i) EOQ= $\sqrt{2AB \div C}$, Where,

A=Annual Requirement of materials= 54,000 castings

B= Buying cost per order= ₹9,000 per order

C=Carrying cost p.u. p.a.= ₹300 per unit per annum.

On substitution, EOQ=1,800 castings

(ii)

Average Consumption per day	=54,000 castings÷360 days	=150 castings
Average lead time	=(10+6)÷2	=8 days
For **15% stock-out risk**, relevant delivery time (Cumulative percentage of occurrence up to 7 days is 75 +10 = 85%. Hence, risk of stock-out is 15%)		=7 days
Hence Safety stock	=7days consumption=7x150	**=1,050 Castings**

Re-order point	=safety stock+ Lead time consumption	=1,050+(150x 8)	**2,250 Castings**

(iii)

For 5% stock-out risk, relevant delivery time		= 9 days
(Cumulative % of occurrence up to 9 days is 75+10+5+5=95%. Hence, risk of stock-out is 5%)		
Hence, Safety Stock	= 9 days consumption = 9 x 150	**=1,350 castings**

Re-order point	=Safety Stock+ Lead time consumption	=1,350+(150x8)	**=2,550 castings**

(iv) EOQ= $\sqrt{2AB \div C}$, Where,

A=Annual Requirement of Raw Materials= 54,000 castings.
B=Buying Cost per order =₹600 per order.
C=Carrying Cost p.u. p.a.=₹720 per unit per annum.

On substitution, **EOQ=300 castings.**

Number of orders p.a.	=54,000÷1,800	**=30 orders(old)**	And 54,000÷300	**=180 orders(new)**

The Company should be placing an order every alternative day (360÷180) i.e. once in two days under the new system, whereas it was making an order once in 12 days earlier. (360÷30)

Question

6. (a) A factory has three production departments A, B and C and also two service departments 'X' and 'Y'. The primary distribution of the estimated overheads in the factory has just been completed. These details and the quantum of service rendered by the service departments, to the other departments are given below:

	A	B	C	X	Y
Primary distribution(₹)	**2,40,000**	**2,10,000**	**2,50,000**	**1,40,000**	**96,000**
Service rendered by					
Dept 'X'	**30%**	**20%**	**35%**	**-**	**15%**
Dept 'Y'	**25%**	**40%**	**25%**	**10%**	**-**

Prepare a statement showing the distribution of service dept. overheads to the production departments, by the simultaneous equation method. [5]

(b) ABC Ltd. is manufacturing three products X, Y and Z. All the products use the same raw material which is scarce and availability to the extent of 61,000 kg. only. The following information is available from records of the company.

Particulars	Product X	Product Y	Product Z
Selling price per unit (₹)	**100**	**140**	**90**
Variable cost per unit (₹)	**75**	**110**	**65**
Raw Material Requirement per unit (Kg.)	**5**	**8**	**6**
Market Demand (Units)	**5,000**	**3,000**	**4,000**
Fixed Costs			**₹ 1,50,000**

Advice the Company about the most profitable product mix. Compute the amount of profit resulting from such product mix. [2+4]

(c) What are the essential features of an effective Wage Plan? [4]

Answer

6. (a) Let, P and N be the total overheads of the service departments 'X' and 'Y' respectively. Then,

P=1,40,000+0.10N i.e.,	10P-N	=14,00,000
N=96,000+0.15P and	-0.15P+N	=96,000
(By adding)	9.85P	14,96,000

	P=14,96,000/9.85	=₹1,51,878
By substitution,	N=96,000+0.15X1,51,875 = 96,000+22,782	=₹1,18,782

Statement showing the distribution of service dept. overheads to the production departments

(Production Depts.)				
Distribution of overheads of	**A(₹)**	**B(₹)**	**C(₹)**	**Total (₹)**
1,40,000 Deptt. X(85% of ₹1,51,878)	45,563	30,376	53,157	1,29,096
96,000 Deptt. Y(90% of ₹ 1,18,782) 2,36,000	29,696	47,513	29,695	1,06,904
Total	75,259	77,889	82,852	2,36,000

(b) It is given that availability of raw material is limited to the extent of 61,000 kg. only. It can be noticed that if the products are produced to the maximum possible extent according to the market demand, the resultant profit will be highest. However, it is not possible as the raw material is not available to that extent. Therefore it is necessary to find out priority of the product by ranking them on the basis of contribution per kg. of raw material.

Particulars	**Product X**	**Product Y**	**Product Z**
Selling price per unit	₹100	₹140	₹90
Less: Variable cost/unit	75	110	65
Contribution per unit	₹25	30	25
Contribution per constraint i.e., kg. of raw materials	25/5 = 5	30/8 = 3.75	25/6 = 4.16
Priority Ranking	I	III	II

It is evident that X will be produced 1st to meet total market demand of 5,000 units.

Product	**No. of units**	**Raw material consumed**	**Contribution**
X	5,000	25,000 kg.	₹1,25,000
Y	4,000	24,000kg.	1,00,000
Z	1,500	12,000kg.*	45,000
		(Balance to go upto 61,000kg.) 61,000kg.	₹2,70,000

Contribution	₹2,70,000
Less: Fixed Cost	₹1,50,000
Profit	1,20,000

This will be the highest profit in the given situation by producing

5,000 units of X
1,500 units of Y and
4,000 units of Z

(c) The essential features of an effective Wage Plan may be enumerated as follows:

- It should be based upon scientific time and motion study to ensure a fair output and a fair remuneration.
- There should be guaranteed minimum wages at a satisfactory level.
- The wages should be related to the effort put in by the employee. It should be fair to both the employees and employer.
- The scheme should be flexible to permit any necessary variations which may arise.
- There must be continuous flow of work. After completing one piece, the workmen should be able to go over to the next without waiting.
- After a certain stage, the increase in production must yield decreasing rate so as to discourage very high production which may involve heavy rejections.

- The scheme should aim at increasing the morale of the workers and reducing labour turnover.
- The scheme should not be in violation of any local or national trade agreements.

Question.

7. (a) A company produces three joint products in one common process. Each product can be separately processed further after split-off point. The estimated data for a particular month are as under

	Product		
	A	**B**	**C**
Selling price at split-off point (₹ / litre)	**100**	**120**	**150**
Selling price after further processing (₹ / litre)	**200**	**200**	**250**
Post separation point cost (₹)	**3,50,000**	**4,50,000**	**2,00,000**
Output in litres	**3,500**	**2,500**	**2,000**

Pre-separation point joint costs are estimated to be ₹ 2,40,000. As per current practice such costs are apportioned to the three products according to production quantity.
You are required to

(i) Prepare a statement of estimated profit or loss for each product and in total for the month if all three products are processed further; and [4+4]

(ii) From the profit statement show how profit could be maximized if one or more products are sold at split-off points. [4]

(b) List out the essential features of Uniform Costing. [3]

Answer:

7. (a) (i) Profitability after further processing all three products: (₹ In '000)

	Product			
	A	**B**	**C**	**Total**
Sales revenue	700	500	500	1700
Costs: Pre-separation*	(105)	(75)	(60)	(240)
Post-separation	(350)	(450)	(200)	(1000)
Profit / Loss (-)	245	(25)	240	460

* apportioned on the basis of output, i.e., @ (₹ 2,40,000 / 8,000 liters or ₹ 30 per litre).

Whether to process further or not Profitability by further processing

Product	Incremental Revenue (₹ '000)	Incremental cost (₹ '000)	Incremental Profit (₹ '000)
A	100 x 3,500 = 350	350	Nil
B	80 x 2,500 = 200	450	(250)
C	100 x 2,000 = 200	200	Nil

It is seen that further processing will not be gainful for products A or C, whilst there will be loss of ₹ 2,50,000 in product B.

(ii)

	Product A	Product B	Product C	Total
	₹ '000	**₹ '000**	**₹ '000**	**₹ '000**
Sales revenue	350	300	300	950
Costs up to Pre-separation	(105)	(75)	(60)	(240)

Profit	245	225	240	710
Profit at post-separation, as worked in answer (i)				460

- Further processing will result in reduction of profit by ₹ 2,50,000 [7,10,000 – 4,60,000].

Note: Figures in bracket indicate the negative value.

(b) The essential Features of uniform costing are as follows:

- Common bases for the apportionment and allocation of overhead to be followed by all units in the same industry.
- The Department sections or production centers to be used for analysis and comparison of costs to be determined
- What items shall be regarded as factory or distinct from administration expenses to be clearly indicated.
- Common rates of depreciation should be applied to plant and machinery.
- Uniform method of arriving service departments cost.
- To set up an organization to prepare comparative statistics for the use of those adopting the uniform system. Privacy of individual data and confidence in the coordinating office are essential factors.

Question

8. Write short notes on any three from the following: [3x5=15]

(i) Opportunity Cost.
(ii) Cost Plus Contract
(iii) Features of Management Accounting
(iv) Merits and demerits of Taylor's Differential Piece Rate System
(v) Limitations of Inter firm comparison

Answer:

8. (i) Opportunity Cost

As per CIMA terminology opportunity cost is defined as 'the value of the benefit sacrificed when one course of action is chosen, in preference to an alternative. The opportunity cost is represented by the forgone potential benefit from the best rejected course of action'. In opportunity cost we are to identify the value of benefit forgone as the result of choosing a particular course of action in preference to another.

Notional rent foregone by a company by using its own building instead of renting it out and foregoing rent that it could have earned is an example of opportunity cost.

Another example of opportunity cost is considered for even an obsolete material lying in store for long. When it is found to be useful for a new job, the sale value of material even as scrap is taken as the opportunity cost of using that material for the new job.

(ii) Cost Plus Contract

CIMA defines Cost plus Contract is one where Contractor is reimbursed allowable or otherwise defined Cost Plus a percentage of these costs or a fixed fee towards profit. The customer has the right to verify the actual costs as these forms the basis for calculation of profit. Cost Plus Contracts are usually entered into during times of emergency such as war when there is no time to go through detailed tender formalities for settlement of a contract. It is also resorted when it is not possible to estimate the cost of the work with any degree of accuracy especially when prices are subject to wide fluctuations.

The advantage to the contractor in such contract is that he is protected from fluctuations in prices of materials, labour and services and he is assured of his profit as per

the terms of the agreement. Moreover he need not to go through tender formalities and he can even take up works which cannot be detailed in advance. Further as the customer has the right of conducting cost audit, he cannot be exploited by the contractor and the customer are both benefited by this agreement.

This advantage of such contracts is that the contractor has no motivation to effect cost savings, as it will indirectly bring down his profit also. The customer also has no clear idea of his liability until after completion of the entire work. Unless the contract agreement provides clearly for definition of cost elements, allowable wastage, if any, mode of charging depreciation on assets, settlement of disputes etc. cost plus contracts may lead to dissatisfaction for both the contractor and the customer.

(iii) Features of Management Accounting

The features of Management Accounting are given below.

- The Management Accounting data are derived from both, the financial accounting and cost accounting
- The main thrust in Management Accounting is towards determining policy and formulating plans to achieve desired objectives of Management.
- It is concerned with short and long range planning and uses highly sophisticated techniques like sensitivity analysis, probability techniques, decision tree, ratio analysis etc for planning, control and evaluation.
- Management Accounting systems generate various reports which are extremely useful from the management point of view.
- Management Accounting system cannot be installed without proper cost accounting system.

(iv) Merits and demerits of Taylor's differential Piece Rate System

Merits:

- There is a very strong incentive to the workers, which helps to achieve higher productivity.
- Due to the incentive, best workers are attracted to the Company.
- This method is quite simple and hence easy to understand.

Demerits:

- Slow workers and beginners are penalized severely. Similarly workers get penalized for reasons beyond their control, e.g. medical reason, accidents etc. Therefore it is said that there is no human element in this system,
- In an anxiety to produce more, quality may be neglected in order to achieve higher quantity of production.

(v) Limitations of Inter firm comparison are:

- Top management may not be convinced of the utility of inter-firm comparison.
- Reluctance to disclose data which a concern considers to be confidential.
- A sense of complacence on the part of the management who may be satisfied with the present level of profit.
- Absence of a proper system of cost accounting so that the costing figures supplied may not be relied upon for comparison purposes.
- Non-availability of a suitable base for comparison.