PAPER – 10: COST & MANAGEMENT ACCOUNTANCY

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL B	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence

Paper – 10: Cost & Management Accountancy

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

This paper contains 4 questions. All questions are compulsory, subject to instruction provided against each question. All workings must form part of your answer. Assumptions, if any, must be clearly indicated.

1. Answer all questions [2x10=20]

(a) Opening work-in-progress: 4,000 units
Completed as to — materials: 80%, labour: 60%; overhead: 60%.
Units introduced: 6,000 units
Closing work-in-progress: 3,000 units
Degree of completion — materials: 80%, labour: 60%; overhead: 60%.
Find out the equivalent production as per FIFO method assuming there is process loss.

Answer:

Statement of equivalent production (FIFO method)

	Total units	Equivalent Units		
		Materials	Labour	Overhead
Opening work-in-progress (completed now)	4,000	800	1,600	1,600
Units introduced & completed	3,000	3,000	3,000	3,000
Closing work-in-progress	3,000	2,400	1,800	1,800
	10,000	6,200	6,400	6,400

(b) ANKIT LTD. operates a throughput accounting system. The details of product B-1 per unit are as under:

Selling Price	**` 45**
Material Cost	**` 18**
Conversion Cost	**` 22**

Time on bottleneck resources 12 minutes
Calculate the Return per hour for Product B-1

Answer:

$$\text{Return per hour for Product B-1} = \frac{\text{Selling Price - Material Cost}}{\text{Time of bottle neck resource}}$$

$$= \frac{45-18}{12\text{ minutes}} \times 60\text{ minutes}$$

$$= \frac{27}{12} \times 60 = ` 135$$

(c) A firm engaged in the profession of rendering software services provides three different kinds of services to its clients. The following are relating to these services:

Types of services	A	B	C

	`/Job	`/Job	`/Job
Annual fee	**9,000**	**7,200**	**5,400**
Annual variable cost	**4,050**	**2,400**	**2,430**
Annual fixed costs	**1,800**	**960**	**675**

The total annual fixed costs are budgeted at ` 17,22,600 and none of these costs are specific to any type of service provided by the firm.

The firm has estimated the number of service contracts to be sold in the next year in the proportion of 20%, 30% and 50% respectively for the three types of services namely A, B and C.
Calculate the break-even of the firm.

Answer:

Service Type	A	B	C
	`/Job	`/Job	`/Job
Annual fee	9,000	7,200	5,400
Annual Variable cost	4,050	2,400	2,430
Contribution	4,950	4,800	2,970
Proportion of Services	2	3	5
Contribution per set of three services	9,900	14,400	14,850

Total of contribution for a set= ` (9,900 + 14,400 + 14,850) = ` 39,150
No. of sets to breakeven= F/C= ` 17,22,600 / ` 39,150 = 44
Annual fee for a set of services= ` 9,000 x 2 + ` 7,200 x 3 + ` 5,400 x 5 = ` 66,600
Breakeven sales= 44 x ` 66,600 = ` 29,30,400.

(d) The standard set of material consumption was 350 kg. @ ` 2.25 per kg.
In a cost period:
Opening stock was 350 kg. @ ` 2.25 per kg.
Purchase made 1,750 kg. @ ` 2.15 per kg.
Consumption 385 kg.
Calculate usage variance and price variance.

Answer:

Computation of Material usage variance
Material usage variance= SQSP-AQSP
= SP (SQ-AQ)
= ` 2.25 (350 - 385)
= ` 78.75 (A)

Computation of Price Variance:
Material Price Variance= AQSP-AQAP
= (385 x ` 2.25) - (385 x ` 2.15)
= ` 38.5 (F)

(e) The following information relates to budgeted operations of Division A of a manufacturing Company.

Particulars	Amount in `

Sales-50,000 units @`8	**4,00,000**
Less: Variable costs @`6 per unit	**3,00,000**
Contribution margin	**1,00,000**
Less: Fixed Costs	**75,000**
Divisional Profits	**25,000**

The amount of divisional investment is `1,50,000 and the minimum desired rate of return on the investment is the cost of capital of 10%.

Calculate

I. Divisional expected ROI and

II. Divisional expected RI

Answer:

I. ROI= `25,000/1,50,000x100=16.7%

II. RI = Divisional profit- Minimum desired rate of return
= 25,000-10% of 1,50,000=`10,000

(f) How will you treat Cenvat availed as credit on purchased raw materials in the Cost Accounting Records?

Answer.

Cenvat credit to be deducted from the cost of raw materials, and only the net value should be taken in the priced stores ledger, which forms the basis for pricing materials issues to cost centres.

(g) A company manufactures various types of the product. As a Cost Auditor would you accept the absorption of "Selling and Distribution" expenses as a percentage on Sales Values?

Answer:

The method of absorption of Selling and Distribution Overheads as a percentage of sales value is not correct because:

- Some quantities of product have been consumed captively.
- Separate seminars or advertisement expenses incurred for various type of products
- Freight cost is different for different type of product
- Product has different demand in different areas and their selling expenses cannot be pooled as common.

(h) State the essential conditions to obtain the equilibrium position of the industry under perfect competition?

Answer:

In order to obtain the equilibrium position of the industry under perfect competition the following conditions are essential.

- The industry gets an equilibrium position where MC=MR.
- All firms in the industry get only normal profits.
- At equilibrium point the Mc, AC, MR and AR are equal.
- Number of the firms is constant.
- Possible only in long period.

(i) The Revenue function of a firm given by $R = (1,800 - 3x)\frac{x}{2}$, calculate the firm's marginal revenue function.

Answer:

$$R = (1,800 - 3x)\frac{x}{2} = \frac{1,800x}{2} - \frac{3}{2}x^2$$

$$MR = \frac{dR}{dx} = \frac{1,800}{2} - \frac{3}{2} \times 2x$$

$$= 900 - 3x$$

(j) Illustrate Average Fixed Cost.

Answer:

Average fixed cost is obtained by dividing the total fixed cost of the firm by its output.

$$\text{Average Fixed Cost (AFC)} = \frac{\text{Total Fixed Cost (TFC)}}{\text{Output (Q)}}$$

Example: If the total fixed cost incurred by a firm was ` 5,00,000 p.a. and the total output produced by it was 50,000 units in that year, then the average fixed cost per unit was ` 10.

2. Answer any two questions. [2x20=40]

(a)

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

Number of Club members	**5,000**
Number of Library members	**1,000**
Library fee per member per month	**`100**
Fine for late return of books	**` 1 per book per day**
Average No. of books returned late per month	**500**
Average No. of days each book is returned late	**5 days**
Number of available old books	**50,000 books**
Cost of new books	**` 300 per book**
Number of books purchased per year	**1,200 books**
Cost of maintenance per old book per year	**`10**

Staff details	**No.**	**Per Employee**
		Salary per month (`)
Librarian	**01**	**10,000**
Assistant Librarian	**03**	**7,000**
Clerk	**01**	**4,000**

You are required to calculate:

I. The cost of maintaining the library per year excluding the cost of new books;

II. The cost incurred per member per month on the library excluding cost of new books; and

III. The net income from the library per year.

If the club follows a policy that all new books must be purchased out of library revenue, what is the maximum number of books that can be purchased per year and how many excess books are being purchased by the library per year?

Also, comment on the subsidy policy of the club. [2+2+2+2+2=10]

Answer:

I. Computation of total revenue

No. of library members	No	1,000
Library fees per month	`	1,00,000
Late fees per month (500 × 5 × 1)	`	2,500
Total Revenue per month	`	1,02,500
Total Revenue per annum (1,02,500 × 12)	`	12,30,000

Computation of total cost

Staff details	**No.**	**Salary per month**	**Total cost**
		`	`
Librarian	1	10,000	10,000
Assistant Librarian	3	7,000	21,000
Clerk	1	4,000	4,000
Total Staff cost per month			35,000
Total Staff cost per year (35,000 × 12)			4,20,000
	No.	**Cost per book**	
Books maintenance cost	50,000	` 10	5,00,000
Total maintenance cost per annum excluding cost of new books (4,20,000 + 5,00,000)			9,20,000

II. Cost incurred per library member per annum (` 9,20,000/1,000)	`	920
Cost incurred per member per month on the library excluding cost of new books (920/12)	`	76.67
Cost incurred per club member per annum (9,20,000/5,000)	`	184
Cost incurred per club member per month (184/12)	`	15.33
III. **Net income from the library per annum** (12,30,000 – 9,20,000)	`	3,10,000
Cost per new book	`	300
Maximum number of new books per annum (3,10,000/300)	No.	1033.333
Present number of books purchased	No.	1200

Excess books purchased (1200 – 1033.333)	No.	166.6667
Subsidy being given per annum	`	50,000
Subsidy per library member per annum (50,000/1,000)	`	50
Subsidy per club member per annum (50,000/5,000)	`	10

Comment:
The club is exceeding its subsidy target to members by `45 (`50 – 5) per library member and `5 (`10 – 5) per club member.

(ii) Raj Ltd produces and sells a single budget. Sales budget for calendar year 2014 by quarters is as under:

Quarters	I	II	III	IV
No. of units to be sold	20,000	22,000	25,000	27,000

The year is expected to open with an inventory of 6,000 units of finished products and close with inventory of 8,000 units. Production is customarily scheduled to provide for 70% of the current quarter's sales demand plus 30% of the following quarter demand. The budgeted selling price per unit is ` 40.
The standard cost details for one unit of the product are as follows:
Variable Cost ` 34.50 per unit.
Fixed Overheads 2 hours 30 minutes @ ` 2 per hour based on a bused on a budgeted production volume of 1,10,000 direct labour hours for the year. Fixed overheads are evenly distributed through-out the year.
You are required to:
I. Prepare Quarterly Production Budget for the year.
II. Calculate the break-even point. [4+2]

Answer:

I. Quarterly Production Budget for 2014

Particulars	Q-I	Q-II	Q-III	Q-IV	Total
70% of current quarter sales demand (units)	14,000	15,400	17,500	18,900	65,800
30% of the following quarter (units)	6,600	7,500	8,100	8,000	30,200
	20,600	22,900	25,600	26,900 (note#1)	96,000

Working Note # 1: Production in Q-IV
Production for the year = Sales + Closing Stock - Opening Stock
= (20,000 + 22,000 +25,000 + 27,000) + 8000 - 6,000 = 96,000 units
∴ Production for Q-IV (units) = Total production for the year - production for first 3 quarters
= 96,000 - (20,600 + 22,900 + 25,600)
= 26,900 units

Production Cost

Particulars	Q-I	Q-II	Q-III	Q-IV	Total
Units to be produced	**20,600**	**22,900**	**25,600**	**26,900**	**96,000**
	(`)	(`)	(`)	(`)	(`)
Variable Cost @ ` 34.50 pu	7,10,700	7,90,050	8,83,200	9,28,050	33,12,000
Fixed Overhead [Note # 2]	55,000	55,000	55,000	55,000	2,20,000

	7,65,700	8,45,050	9,38,200	9,83,050	35,32,000

Working Note # 2: Fixed Overhead

Fixed overhead = 1,10,000 hrs x ` 2 per hr = ` 2,20,000

∴ Fixed overhead per quarter = $\frac{\text{` } 2,20,000}{4}$ = ` 55,000

II. Break-even sales quantity = Fixed Cost ÷ Contribution per unit

$= \frac{\text{` } 2,20,000}{\text{` } (40 - 34.50) \text{ per unit}}$ = ` 40,000 units

(iii) A Ltd. showed a net loss of ` 10,500 as per their Cost Accounts for the year ended on 31.03.2015. However, the Financial Accounts disclosed a net profit of ` 70,500 for the same period. The following informations are revealed as a result of scrutiny of the figures of Cost Accounts and Financial Accounts:

Particulars	Amount in `
Depreciation under charged in Cost Accounts	**25,000**
Dividend received	**19,000**
Factory overhead over recovered	**97,000**
Goodwill written-off in Financial Accounts	**10,000**

Prepare a reconciliation statement by taking costing net loss as base. [4]

Answer:

Reconciliation Statement

Particulars	Amount in `	Amount in `
Net loss as per Cost Accounts		(10,500)
Add: Dividend received	19,000	
Factory overhead over recovered	97,000	1,16,000
Less: Depreciation under charged in Cost Accounts	25,000	
Goodwill written-off in Financial Accounts	10,000	(35,000)
Net profit as per Financial Accounts		70,500

(b)

(i) GREEN ENVIRON LTD. has two divisions—M and N. Division-M manufactures product A-15 which it sells in outside market as well as to Division-N which processes it to manufacture Z-25. The Manager of Division-N has expressed the opinion that transfer price is too high. The two Divisional Managers are about to enter into discussions to resolve the conflict and Manager of Division-M to supply him with some information prior to discussions.

Division-M has been selling 50,000 units to outsiders and 10,000 units to Division-N, all at `25 per unit. It is not anticipated that these demand will change. The variable cost is `15 per unit and the fixed costs are `3 lakhs. Divisional investment in assets is `12 lakhs.

The Manager of Division-M anticipates that Division-N will want a transfer price of `22. If he does not sell to Division-N, `40,000 of fixed costs and `2,00,000 of assets can be avoided. The Manager of Division-M would have no control over the proceeds from the sale of the assets and is judged primarily on his rate of return.

Required:

I. Should the Manager of Division-M transfer its products at `22 to Division-N?
II. What is the lowest price that the Division-M should accept? [7+2=9]

Answer:

GREEN ENVIRON LTD

I. Comparative Profitability Statement of Division M (Figures in `)

	Alternative Situations		
Particulars	**Sell `25**	**Transfer at `22**	**Don't transfer**
Sales Revenue: Market sales (50,000 units × `25)	12,50,000	12,50,000	12,50,000
Transfer to Division – N (10,000 units × `25)	2,50,000	2,20,000	-----
Total (A)	15,00,000	14,70,000	12,50,000
Variable Cost (at `15/ unit)	9,00,000	9,00,000	7,50,000
Fixed Cost	3,00,000	3,00,000	2,60,000
Total (B) (`)	12,00,000	12,00,000	10,10,000
Total Profit (A – B)	3,00,000	2,70,000	2,40,000
Total Assets (`)	12,00,000	12,00,000	10,00,000
ROI (Percentage)	25%	22.50%	24%

Comments:
The manager of Division M should not agree to sell at `22 per unit, as it lowers down its rate of return (ROI) i.e. (25% to 22.50%

II. The lowest transfer price acceptable to Division M is one, which maintains its rate of return of 24% (ROI without selling to Division N):
= (Total sales Revenue -Total Cost) / Total Assets = 0.24
or, [(`12,50,000 + 10,000 x Transfer Price (TP)) –12,00,000] ÷`12,00,000= 0.24
or, 10,000 TP = 2,88,000 –50,000 = 2,38,000
or, (Transfer Price) TP = 2,38,000 ÷ 10,000 = 23.80 i.e. `23.80
The lowest transfer price acceptable to Division -M is `23.80 per unit.

(ii) The following data have been obtained from the records of a shop for an average month:

Budget:	
No. of working days	**25**
Working hours per day	**8**
No. of direct workers	**16**
Efficiency	**One standard hours per clock hour**
Down time	**20%**
Net operator hours worked	**1.920**
Standard hours produced	**2,112**

Calculate:
(i) Efficiency Ratio
(ii) Activity Ratio
(iii) Calendar Ratio
(iv) Standard capacity Usage Ratio [6]

Answer:
(i) Efficiency Ratio:

$$= \frac{\text{Output expressed in standard hrs.}}{\text{Actual hrs. worked}} \times 100$$

$$= \frac{2,112}{1,920} \times 100 = 110\%$$

(ii) Activity Ratio:

$$= \frac{\text{Output in standard hrs.}}{\text{Budgeted output in standard hrs.}} \times 100$$

$$= \frac{2,112}{2,560} \times 100 = 82.5\%$$

(iii) Calendar Ratio:

$$= \frac{\text{Actal working days in a period}}{\text{No. of working days in related budget period}} \times 100$$

$$= \frac{24}{25} \times 100 = 96\%$$

(iv) Standard Capacity Usage Ratio:

$$= \frac{\text{Budgeted hrs.}}{\text{Max. No. of hrs. in related period}} \times 100$$

$$= \frac{2,560}{3,200} \times 100 = 80\%$$

Workings:

Maximum hours = 25 x 8 x 16	= 3,200
Budgeted hours 3,200 hrs. less 20%	= 2,560
Actual hours (given)	= 1,920
Standard hrs. (produced)	= 2,112
Budgeted working days	= 25
Actual working days	= 24

(iii) Pass the Journal entries for the following transactions in a double entry cost accounting system:

Particulars	`
Issue of material:	
Direct	**55,000**
Indirect	**15,000**
Allocation of wages and salaries:	
Direct	**20,000**
Indirect	**4,000**
Overheads absorbed in jobs:	
Factory	**15,000**
Administration	**5,000**
Selling	**3,000**
Under/Over absorbed overheads:	
Factory (Over)	**2,000**
Admn. (Under)	**1,000**

[5]

Answer:

Journals

Particulars		Dr. `	Cr. `
Work in progress Control A/c	Dr.	55,000	
Factory Overhead Control A/c	Dr.	15,000	
To Material Control A/c			70,000
Work in progress Control A/c	Dr.	20,000	
Factory Overhead Control A/c	Dr.	4,000	
To Wages Control A/c			24,000
Work in progress Control A/c	Dr.	15,000	
Finished goods Control A/c	Dr.	5,000	
Cost of Sales A/c	Dr.	3,000	
To Factory Overhead Control A/c			15,000
To Administration Overhead Control A/c			5,000
To Selling Overhead Control A/c			3,000
Costing Profit & Loss A/c	Dr.	1,000	
To Administrative Overhead Control A/c			1,000
Factory Overhead Control A/c	Dr.	2,000	
To Costing Profit & Loss A/c			2,000

(c)

(i) 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. [5+2]

Answer:

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

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

= 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

(ii) A review, made by the top management of GUPTA LTD. which makes only one product, of the result of first quarter of the year revealed the following:

Sales in units	**10,000**
Loss in `	**25,000**
Fixed cost (for the year `1,20,000) in `	**75,000**
Variable cost per unit in `	**20**

The Finance Manager who feels perturbed suggests that the company should at least break even in the second quarter with a drive for increased sales. Towards this, the company should introduce a better packing which will increase the cost by `1.25 per unit.

The Sales Manager has an alternate proposal. For the second quarter additional sales promotion expenses can be increased to the extent of `12,500 and a profit of `12,500 can be aimed at for the period with increased sales.

The Production Manager feels otherwise. To improve the demand, the selling price per unit has to be reduced by 3 per cent. As a result the sales volume can be increased to attain a profit level of `10,000 for the quarter.

The Managing Director asks you as a Cost Accountant to evaluate these three proposals and calculate the additional Sales Volume that would be required in each case, in order to help him take a decision. [2+8=10]

Answer:

Results of the first quarter: Sales 10,000 units

Particulars	Per unit (`)	Amount (`)
Variable cost (V)	20	2,00,000

Fixed cost	7.5	75,000
Total cost	27.5	2,75,000
Loss	2.5	25,000
Sales (S)	25	2,50,000
Contribution (S – V)	5	50,000

Comparative Statement of 3 proposals

Particulars	Proposal Of		
	Finance Manager (`)	Sales Manager (`)	Production Manager (`)
Selling Price per unit	25.00	25.00	24.25
variable cost per unit (20.00 + 1.25)	21.25	20.00	20.00
Contribution per unit	3.75	5.00	4.25
Fixed cost	75,000	87,500	75,000
Profit required	Nil	12,500	10,000
B.E.P (Units) =Fixed cost / Contribution per unit [A]	75,000 ÷ 3.75= 20,000	------	------
Sales (Units) = (Fixed cost + Profit) / Contribution per unit [A]	-------	20,000 [(87,500+12,500)/ 5.00]	20,000 [(75,000 + 10,000) / 4.25]
Sales (units) in First Quarter [B]	10,000	10,000	10,000
Additional Sales volume required in Second Quarter as compared to first Quarter [A – B]	10,000	10,000	10,000

(iii) List out the limitation of Inter-firm Comparison. [3]

Answer:

- The 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 profits.
- 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

3. Answer any two questions. [2x8=16]

(a)

(i) Describe the procedure of submission of Cost Audit Report by the Auditor of a Company. [4]

Answer:

- The cost auditor shall submit his report to the Board of Directors.
- Within 30 days of receipt of the cost audit report, the company shall furnish to the Government –
  (a) A copy of the cost audit report; and
  (b) Along with full information and explanation on every reservation or qualification contained in the cost audit report.
- The Central Government may call for such further information and explanation as it may deem fit.

- The company shall furnish such further information and explanation within such time as may be specified by the Central Government.

(ii) Under what conditions will the appointment of Cost Auditor for conducting Cost Audit be appointed in firm's name? Who will authenticate such reports and how? [3+1=4]

Answer:

The Ministry of Corporate Affairs has decided to approve the appointment of Cost Auditors in firm's name under Sub-Section (2) of Section 233-B of the Companies Act 1956 if such proposal is received from Board of Directors of any Company subject to the following Conditions :

- All the Partners are practicing Cost Accountants within the meaning of Sections 6 and 7 of the cost and works Accountant Act 1959 and
- The firm itself has been constituted with the previous approval of the Central Government / Institute as required under Regulation 113 of the Cost and Works Accountant Act 1959 as amended from time to time. When a firm is appointed as Cost Auditors, authentication of Cost Audit Report is to be done by the Signature of any one of the Partners of the firm in his own hand for and on behalf of the firm. The report should not be signed by merely affixing firm name.

(b) Explain the penal provisions for non-compliance of any of the provisions of the Act regarding Cost Audit? [8]

Answer:

As per section 148(8) of the Companies Act, 2013, if any default is made in complying with the provisions relating to Cost Audit,—

In case non compliance by companies –

The company and every officer of the company who is in default shall be punishable in the manner as provided in sub-section (1) of section 147.

As per section 147(1), if any of the provisions of sections 139 to 146 (both inclusive) is contravened, the company shall be punishable with fine which shall not be less than twenty -five thousand rupees but which may extend to five lakh rupees and every officer of the company who is in default shall be punishable with imprisonment for a term which may extend to one year or with fine which shall not be less than ten thousand rupees but which may extend to one lakh rupees, or with both.

In case non-compliance by companies –

The cost auditor of the company who is in default shall be punishable in the manner as provided in sub-sections (2) to (4) of section 147. As per section 147(2), if an auditor of a company contravenes any of the provisions of section 139, section 143, section 144 or section 145, the auditor shall be punishable with fine which shall not be less than twenty-five thousand rupees but which may extend to five lakh rupees.

Provided that if an auditor has contravened such provisions knowingly or wilfully with the intention to deceive the company or its shareholders or creditors or tax authorities, he shall be punishable with imprisonment for a term which may extend to one year and with fine which shall not be less than one lakh rupees but which may extend to twenty-five lakh rupees.

As per section 147(3), where an auditor has been convicted under section 147(2), he shall be liable to—

- refund the remuneration received by him to the company; and

- pay for damages to the company, statutory bodies or authorities or to any other persons for loss arising out of incorrect or misleading statements of particulars made in his audit report.

As per section 147(4), the Central Government shall, by notification, specify any statutory body or authority or an officer for ensuring prompt payment of damages to the company or the persons under clause (ii) of sub-section (3) and such body, authority or officer shall after payment of damages to such company or persons file a report with the Central Government in respect of making such damages in such manner as may be specified in the said notification

(c)

(i) For what purposes the Cost Auditor refers to Financial Records while conducting the Cost Audit of an entity? [5]

Answer:

Audit Programme – The Cost Audit programme encompasses the regular financial audit procedures like vouching of expenses, verification of assets and determination of cost of assets, etc. hence, financial records should also be seen.

Profit Reconciliation – The Cost Auditor is expected to verify whether the company has reconciled the profits shown by Cost Records with the profit as per Financial Books. Also, the profits of products covered by the Rules and profits from other products should be segregated. Verification of the Profit Reconciliation Statement calls for a reference to the Financial Ledger also.

Common Information – The Company has to disclose quantitative details of Licensed Capacity, Installed Capacity, Actual Production, Raw Materials Consumption, Finished Goods Sold, Stocks etc. these are common to both financial and cost records and hence the data will be same. Hence, the Cost Auditor has to refer to the financial records also.

Error detection – A comparison between cost records and financial records may throw up the need for inquiry into errors, mistakes and manipulation. Material discrepancy between financial records and cost records will be highlighted in the Reconciliation Statement which would require that the Cost Auditor may examine deviation before reporting on the same.

Hence, it can be inferred that there is a considerable overlapping between financial and cost records. In case of discrepancies or differences, it is desirable that the Cost Auditor should communicate the same to the Company Auditor.

(ii) What are the principal functions of the Cost Auditor in the area of work-in-Progress? [3]

Answer.

In relation to work-in-progress (WIP), the Cost Auditor will look into the following:

- That WIP has been physically verified & that it agrees with the balance stated in the incomplete cost records.
- That the valuation of the WIP is correct with reference to the stage of completion of each job or process and the value in Job Cost Cards or Process Cost Sheet
- That there is no over-valuation or under-valuation of opening or closing WIP, thereby artificially pushing up or down Net Profits or Net Assets.
- That the volume of WIP is not disproportionate as compared with finished turnover/output.

4. Answer any three questions. [3x8=24]

(a)

(i) How is the price determined by a firm under Oligopoly? [4]

Answer:

PRICE DETERMINATION UNDER OLIGOPOLY:

Price can be determined in three ways under oligopoly:

- Independent pricing;
- Pricing under collusion;
- Price Leadership
- **Independent pricing:** If there is a product differentiation under oligopoly each firm can act as a monopoly and fixes the price independently. Therefore the firm may determine its price in that way where it gets maximum profits. If there is no product differentiation, it is difficult to know the price determination in accurate manner the firm may compete each other and finally they may fix the common reasonable price which cannot be changed.
- **Pricing Under collusion:** Most of the firms have the opinion that independent price determination leads to uncertainly. To avoid this defect there is a tendency among the oligopoly firm to act collectively by collusion. In this method these firms may make, cartle arrangement. The centralized cartle determines the output produce by different firms and the price is also determined which is the most acceptable by all firms.
- **Price leadership:** If the other firms follow the price which is determined by one firm in oligopoly then we can say that there is a dominant firm or the firm with low costs or well established old firm-may take this leadership and fixes the price.

(ii) A radio manufacturer produces 'x' sets per week at total cost of ` x^2 + 78x + 2,000.He is a monopolist and the demand function for his product is x =(600 – p) / 8, when the price is 'p' per set shows that maximum net revenue is obtained when 29 sets are produced per week what is the monopoly price. [4]

Answer:

Cost (C) = x^2 + 78x + 2,000

Demand (D) x = (600 – p) /8

8x = 600 – p

Therefore, p =600 – 8x

Total Revenue per 'x' sets

Price x i.e., 600x – $8x^2$

Maximum revenue is obtained at MC = MR

Marginal Cost= $\frac{dc}{dx} = 2x + 78 - - - - -$ (i)

Marginal Revenue = $\frac{dr}{dx} = 600 - 16x - - - -$ (ii)

Equity (i) and (ii)

2x + 78 = 600 – 16x

= 18x = 522

Therefore, x = 29

Monopoly price 600 – 8x

=600 – 8 × 29

= 600 – 232

= 368

(b)

(i) Cost Function $C = \frac{3}{5}x + \frac{15}{4}$ **Calculate**

i. Cost when output is 10 units
ii. Average Cost of 12 units
iii. Marginal Cost. **[1+2+2]**

Answer:

$$C = \frac{3}{5}x + \frac{15}{4}$$

i. Cost when output is 10 units

$$= \frac{3}{5} \times 10 + \frac{15}{4} = 6 + \frac{15}{4} = 9.75$$

ii. Average Cost of 12 units

$$= \frac{3}{5} + \frac{15}{4x}$$

$$= \frac{3}{5} + \frac{15}{4 \times 12} = \frac{3}{5} + \frac{5}{16}$$

$$= \frac{48 + 25}{80} = \frac{73}{80} = 0.913$$

iii. Marginal Cost

$$= \frac{dc}{dx} = \frac{3}{5} = 0.6$$

(ii) State the term "Regression Analysis". **[3]**

Answer:

Regression Analysis: Regression equation establishes the relationship between dependent variable and independent variable, assuming the relationship to be linear. For some commodities independent variable may be only one. But for some products independent variables may more than two. In such a case, multiple regression analysis can be used. Hence, demand for any product can be estimated at a given value of price.

Simple Regression Equation:
This equation will be form of Y = a + bx, for
Independent variable : x
Dependent variable : y

Multiple-Regression Model:
The equation in the case of multiple regression
$Y = a + b_1x_1 + b_2x_2 + \ldots\ldots\ldots\ldots + b_nx_n$
Independent variables: $x_1, x_2, \ldots\ldots x_n$
Dependent variable : y

(c)

(i) AJANTA FOOTWEARS LTD. intends to introduce in the market two products of the following characteristics:

I. 'Comfort walk'-shoe for elderly people—considered quite new in the market with a high degree of consumer acceptability.

II. 'Glamour' sandals (with coloured laces crossing) for young LADIES—considered to be one which is already served by other well known brands. State suitable pricing strategies, together with your valid arguments, for each of them separately. [2+2]

Answer:

I. When the product is new but with a high degree of consumer acceptability, the firm should decide its pricing strategy in favour of Skimming Pricing Strategy, i.e., charging a higher mark-up and therefore charge a high price. This would help to 'skim the cream' from the market. As the demand for the new product is relatively inelastic the high prices will not stop the new consumers from demanding the product. The new product, together with its novelty and special characteristics, commands a better price. If the life of the product promises to be a short one, the management should fix high price so that it can earn, as, much profit as possible and in as short a period as possible.

II. The product is already served in the market by well-known brands. So, a low price is necessary to attract gradually the consumers who are already accustomed to other brands. This low price strategy is termed Penetration Pricing Strategy. This low price will help to maximize the sales of the product even in the short period. Since product differentiation is low, the objective of the firm should be to fix low price so as to establish a strong base in the market, build goodwill among customers and strong consumer loyalty.

(ii) A firm has revenue function given by R=10Q where R=Gross Revenue and Q=Number of Units Sold, Production Cost function is given by C = 20000+ 50(Q / 800)2
Find:

I. the total Profit function, and

II. The number of Units (Q) to be sold to get the maximum Profit. [1+3]

Answer:

$R = 10Q$

$$C = 20000 + 50\left(\frac{Q}{800}\right)^2$$

$$\text{Profit (P)} = 10Q - 20000 - 50\left(\frac{Q^2}{640000}\right) \text{(Profit function)}$$

To find number of units to get the maximum profit,

$\frac{dP}{dQ} = 0$ and $\frac{d^2P}{dQ^2}$ should be - ve

$$= \frac{dP}{dQ} = 10 - \frac{50 \times 2Q}{640000} = 0$$

$$\Rightarrow 10 - \frac{100Q}{640000} = 0$$

$$\text{Therefore, } Q = \frac{640000 \times 10}{100} = 64000$$

$$\frac{d^2P}{dQ^2} = -\frac{100}{640000} = -\frac{1}{6400} \text{ Which is negative (-ve)}$$

P (Profit) is maximum at Q = 64000 units

$$\text{Maximum Profit } = 10 \times 64000 - 20000 - 50\left(\frac{64000^2}{640000}\right)$$

= 6,40,000 – 20,000 – 3,20,000 = `3,00,000

(d)

(i) Demonstrate that the elasticity of demand for the following is constant $x = 3(p^{-2})$, Where P and X are the price & quantity demanded respectively. [5]

Answer:

$$E_p = -\left|\frac{dx}{dp} \times \frac{p}{x}\right|$$

Differentiate w.r.to 'x'

$$\Rightarrow 1 = 3(-2 \cdot p^{-3})\frac{dp}{dx}$$

$$\Rightarrow 1 = -6p^{-3} \cdot \frac{dp}{dx}$$

$$\Rightarrow = \frac{dp}{dx} = \frac{p^3}{6}$$

$$\therefore \frac{dx}{dp} = \frac{6}{p^3} \quad \text{– Equation (1)}$$

$$\text{Now} = \frac{x}{p} = \frac{3}{p^3}$$

$$\Rightarrow = \frac{p}{x} = \frac{p^3}{3} \quad \text{– Equation (2)}$$

From equations (1) & (2)

$$\therefore E_p \frac{dx}{dp} = \frac{p}{x} =$$

$$= \frac{6}{p^3} \times \frac{p^3}{3}$$

= 2 (proved)

(ii) List out the factors influencing Elasticity of Demand. [3]

Answer.

- Nature of goods
- Availability of substitutes
- Alternative use
- Possibility of postponing consumption
- Proportion of income spent
- Price-level
- Force of habit
- Durability of Commodities
- Income level