

Suggested Answer_Syl12_Jun2014_Paper_10

INTERMEDIATE EXAMINATION

GROUP II

(SYLLABUS 2012)

SUGGESTED ANSWERS TO QUESTIONS

JUNE 2014

Paper- 10 : COST AND MANAGEMENT ACCOUNTANCY

Time Allowed: 3 Hours

Full Marks : 100

The figures in the margin on the right side indicate full marks.

QUESTION 1, which is compulsory. Attempt all of them.

Section-A has three questions. Attempt any two of them.

Section-B has two questions. Attempt any one of them.

Section-C has three questions. Attempt any two of them.

- Please:
1. Write answers to all parts of a question together.
 2. Open a new page for answer to a new question.
 3. Attempt the required number of questions only.

Where necessary, suitable assumptions may be made and disclosed by way of a Note.

Working notes should form part of the answer

1. Answer all questions:

- (a) ASHEEKA LTD. has annual turnover of ₹ 200 lakh and an average C/S Ratio of 40%. It makes 10% profit on sales before charging depreciation and interest which amount to ₹10 lakh and ₹ 15 lakh respectively. What will be the Fixed Cost of Asheeka Ltd.? 2
- (b) In a factory of ZEE LTD., where Standard Costing is followed, the budgeted fixed overheads for a budgeted production of 4800 units is ₹24,000. For a certain period actual (FOH) expenditure was ₹22,000 resulting in a fixed overhead volume variance of ₹ 3,000 (Adv.) Calculate the actual production of ZEE LTD. for the period. 2
- (c) OPTIMA LTD. is committed to supply 24000 bearings per annum to BKT Ltd. on a steady basis. It is estimated that it costs ₹2.40 as inventory holding cost per bearing per annum and that the set-up cost per run of bearing manufacture is ₹648. What would be the optimum run (batch) size for bearing manufacture? 2
- (d) The total production cost of HORIZON LTD. for making 6000 units is ₹35,000 and the total production cost for making 15000 units is ₹69,000. Once the production exceeds 10000 units additional fixed costs of ₹ 7,000 are incurred. What will be the full production cost per unit for making 12000 units? 2
- (e) What are the limitations of Uniform Costing? 2
- (f) The Compliance Report along with Annexures is to be signed by a Cost Accountant. Whether the Cost Accountant is responsible for the preparation of the Annexures? 2
- (g) "Turnover" is gross turnover whether includes excise duty or not—Clarify. 2

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- (h) What is Temporary Monopoly? 3
 (i) The cost function of a firm is given by the following equation:

$$C = 300x - 10x^2 + \frac{1}{3}x^3$$

Where C stands for Cost and X for output.

Calculate output at which marginal cost is minimum. 3

Answer:

1. (a)

Profit Before depreciation and Interest	:	₹20 Lakhs
Less: Depreciation and Interest (10 lakh + 15 lakh)	:	<u>₹25 Lakhs</u>
Loss	:	<u>5 Lakhs</u>

Contribution = Fixed cost + Profit
 Or 40% ₹200 Lakh = FC + (-50 or FC = 80 + 5 = 85
 Fixed cost of Asheeka Ltd. : ₹85 lakhs

- (b) Fixed Overhead volume variance = ₹3,000 (Adv) :
 Budgeted Fixed overhead – Actual Production × Std. rate = 24,000 – Actual
 Production × (24,000 ÷ 4,800)
 Hence, 3,000 (A) = 24,000 – Actual Production × 5
 Actual Production for the period : (24,000 – 3,000) ÷ 5
 = 4,200 units.

- (c) EBQ = Optimum production run (batch) size:

$$= \sqrt{\frac{2 \times \text{setup cost per batch} \times \text{Annual demand}}{\text{Annual cost of storing unit}}}$$

$$= \sqrt{\frac{2 \times 2,4000 \times 648}{2.40}}$$

$$= \sqrt{1,29,60,000}$$

$$= 3,600 \text{ Bearings}$$

- (d) At 15,000 units total cost is ₹62,000 [69,000 – 7,000]
 At 6,000 units total cost is ₹35,000
 Variable cost per unit = $\frac{62,000 - 35,000}{15,000 - 6,000} = \frac{27,000}{9,000} = ₹3.00$
 Fixed cost = ₹35,000 – (6,000 × 3) = ₹17,000
 Therefore, Total cost for marketing 12,000 units = (12,000 × 3 + 17,000 + 7,000)
 = ₹60,000

Cost per unit = 60,000 ÷ 12,000 = ₹5.00

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(e) **Limitation of Uniform Costing:**

- ❖ Sometimes it is not possible to adopt uniform standard methods & procedures of costing in different firm due to different circumstances in which they operate.
- ❖ Many firm do not wish to share their information with the competitors in the some industry.
- ❖ Small firm cannot afford it.
- ❖ It induces monopolistic trend in the business.
- ❖ The standard terminology used in it, may not be understood properly by the members companies.

[Any four points should be awarded full marks].

(f) As per Rule 5, the Compliance Report and the annexures thereto are required to be certified by a "Cost Accountant" as defined under rule 2(c).

The company is responsible for maintenance of Cost Accounting Records. Hence the responsibility of preparation of the annexures also lies on the company.

(g) As per Rule 2(p) of Companies (Cost Accounting Records) rules 2011, Turnover means gross turnover made by the company from the sale or supply of all products or services during the financial year. It includes any turnover from job work or loan license operations but does not include any non-operational income. The term turnover exclude taxes and duties.

(h) This situation occurs more frequently. A firm invents a new products and places it on the market. For quite some time the demand will remain low, as consumers are not yet aware of the product. The firm will enjoy a de facto monopoly under the protection of its patents. Then, as the product enters into common usage, demand develops rapidly and additional firm try to enter the market. They develop new production methods. Gradually prices and production techniques tend to stabilize. So at the end, the market evolves towards an ordinary competitive one. A firm which invents a new product must determine a strategy relation to prices and production which leads to a maximum effective income.

(i) In the present case, Marginal cost is given by:

$$MC = \frac{dc}{dx} = \frac{d(300x - 10x^2 + \frac{1}{3}x^3)}{dx} = 300 - 20x + x^2$$

For the Marginal cost to be minimum at x,

$$\frac{dMC}{dx} = 0 \text{ and } \frac{d^2MC}{dx^2} > 0$$

$$\therefore \frac{dMC}{dx} = -20 + 2x, \quad \frac{dMC}{dx} = 0, \text{ gives, } -20 + 2x = 0$$

$$\therefore x = 10$$

$$\frac{d^2MC}{dx^2} = 2(+ve) \text{ [this being always positive remains to be positive for } x = 10 \text{]}$$

Hence, Output at which marginal cost is minimum : 10 units.

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Section A

Answer any two questions (Carrying 20 Marks each) from this Section.

2. (a) State the problems associated with Throughput Accounting. 3
 (b) The share of total production and the cost-based fair price computed separately for each of the four units in industry are as follows:

(Amount in ₹)				
Units	A	B	C	D
Share of Production (%)	40	25	20	15
Direct Material	300	360	340	380
Direct Labour	200	240	280	320
Depreciation	600	400	320	200
Other Overheads	600	600	560	480
	1,700	1,600	1,500	1,380
20% Return on Capital Employed	1,260	860	700	460
FAIR PRICE	2,960	2,460	2,200	1,840
Capital Employed per unit				
Net Fixed Assets (₹ per unit)	6,000	4,000	3,200	2,000
Working Capital (₹ per unit)	300	300	300	300
Total Capital (₹ per unit)	6,300	4,300	3,500	2,300

Required :

What should be the uniform price fixed for the product of the industry? 5

- (c) MAGATRON LTD. produces and sells four products A, B, C and D. Details of the four products and relevant information are given below for week ended March 29, 2014:

Products	A	B	C	D
Output (units)	120	100	80	120
Cost per unit (₹)				
Direct Material	40	50	30	60
Direct Labour	28	21	14	21
Machine-hours (per unit)	4	3	2	3

The four products are similar and are usually produced in production runs of 20 units and sold in batches of 10 units.

The production overheads during the period are as follows:

Particulars	₹
Factory works expenses	20,860
Set up costs	10,500
Stores receiving	7,200
Inspection/Quality control	4,200
Material handling and dispatch	9,240

The production overhead is currently absorbed by using a Machine-hour rate and the company wishes to introduce Activity Based Costing (ABC) system and has identified major cost pools for production overheads and their associated cost drivers.

Information in these activity cost pools and their drivers is given below:

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Activity Cost Pools	Cost Drivers
Factory Works Expenses	Machine-hours
Set up costs	Number of production runs
Stores receiving	Requisition raised
Inspection/Quality Control	Number of production runs
Material handling & dispatch	Number of orders executed

The number of requisitions-raised on the stores was 20 for each product and number of orders executed was 42, each order being for a batch of 10 of a product.

Requirements:

- (i) Total cost of each product assuming the absorption of overhead on Machine-hour basis.
- (ii) Total cost of each product assuming the absorption of overhead by using Activity Based Costing.
- (iii) Show the differences between (i) and (ii) and Comment. (3+6+2+1)=12

Answer:

2. (a) Problems with throughput accounting:

- (i) When throughput accounting is the driving force behind all production, scheduling, a customer that has already placed an order for a product, which will result in a sub-optimal profit level for the manufacturing, may find that its order is never filled.
- (ii) The company's ability to create the highest level of profitability is now dependent on the production scheduling staff, who decides, what products are to be manufactured and in what order.
- (iii) Another issue is that all costs are totally variable in the long-run since the management then, has the time to adjust them to long-range production volumes.

(b) COMPUTATION OF UNIFORM PRICE FOR THE PRODUCT

(Amount in ₹)

Units share of production	Total cost	Return on capital employed	Selling price
(1)	(2)	(3)	(2+3)
A	0.40	1700 x 0.40 = 680	1260 x 0.40=504
B	0.25	1600 x 0.25=400	860 x 0.25=215
C	0.20	1500 x 0.20 = 300	700 x 0.20=140
D	0.15	1380 x 0.15 = 207	460 x 0.15=69
		= 1587	= 928
			2515

Uniform price: ₹1,587 + ₹928 = ₹2,515

Hence, Uniform price for the product = ₹2,515

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(c)

MAGATRON LTD.

(i) Statements showing total cost of different products assuming absorption overhead on a Machine Hour Rate basis.

(Figure in ₹)

Particulars	PRODUCT				TOTAL
	A	B	C	D	
Output (units)	120	100	80	120	420
Direct Material	40	50	30	60	180
Direct Labour	28	21	14	21	84
Overheads @ 40/- per M/G hr	160	120	80	120	480
Total cost per unit	228	191	124	201	
Total cost	27360	19100	9920	24120	80500

$$\text{Overhead rate} = \frac{52,000}{1,300} = 40 \text{ per Machine hour}$$

[Total Machine hours = (120 × 4 + 100 × 3 + 80 × 2 + 120 × 3) = 1,300]

(ii)

Total Overheads		Drivers	No.	Cost/Unit of Drivers	
Factory works expenses	₹20,860	Machine hrs	1,300	20,860/1,300	= ₹16.05
Set up costs	₹10,500	Production runs	21	10,500/21	= ₹500.00
Stores receiving	₹7,200	Requisitions	80	7,200/80	= ₹90.00
Inspection/Quality control	₹4,200	Productions runs	21	4,200/21	= ₹200.00
Material handling & dispatch	₹9,240	orders	42	9,240/42	= ₹220.00
Total	₹52,000				

Statement showing total cost of each product assuming activity based costing:

Particulars	Product			
	A	B	C	D
Output (units)	120	100	80	120
No. of production runs	6	5	4	6
No. of stores requisitions	20	20	20	20
No. of sales orders	12	10	8	12
Machine hours per unit	4	3	2	3
Direct materials (₹)	40.00	50.00	30.00	60.00
Direct labour (₹)	28.00	21.00	14.00	21.00
Factory Works Expenses (₹)	64.18	48.14	32.09	48.14
Set ups(₹)	25.00	25.00	25.00	25.00
Store receiving (₹)	15.00	18.00	22.50	15.00
Inspection/quality control (₹)	10.00	10.00	10.00	10.00
Handling/dispatch (₹)	22.00	22.00	22.00	22.00
Unit cost (₹)	204.18	194.14	155.59	201.14
Total cost (₹)	24,501.60	19,414.00	12,447.20	21,136.80

(iii) Statement showing differences (in ₹)

Particulars	Products			
	A	B	C	D
Cost per unit under MHR (i)	228.00	191.00	124.00	201.00
Cost per Unit under ABC (ii)	204.18	194.14	155.59	201.14
Difference	23.82	(3.14)	(31.59)	(0.14)
Total cost- MHR (i)	27,360.00	19,100.00	9,920.00	24,120.00
Total cost- ABC (ii)	24,501.60	19,414.00	12,447.20	24,136.80
Difference	2,858.40	(314.00)	(2,527.20)	(16.80)

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Comments:

Comparison of the ABC cost with the original traditionally calculated cost reveals that product-A was significantly overcosted by the traditional system relative to the ABC system, whilst product B, product C and product D were seriously undercosted. Product A consumes comparatively more of machine hours than other three products, This result is therefore to be expected. ABC reflects reality in its allocation of production overhead costs to the product. The traditional approach allocated all production overhead costs to products as if the overheads were driven by unit level activities i.e. the number of direct labour hours worked.

In the light of above criteria, it may be commented that ABC gives a better insight into the cost of producing the products than traditional cost.

3. (a) **AKASH LTD. operates a system of Standard Costing. The company has normal monthly machine-hour capacity of 100 machines working 8 hours per day for 25 working days in the month of April 2014.**

- (i) **The standard time required to manufacture one unit of products is 4 hours. The Budgeted fixed overhead was ₹1,50,000.**
- (ii) **In the month of April 2014, the company actually worked for 24 days for average 750 machine-hours per day.**
- (iii) **The Actual production was 4,500 units, and the actual fixed overhead was ₹ 1,60,000.**

You are required to compute:

- (A) **Fixed overhead efficiency variance**
- (B) **Fixed overhead capacity variance**
- (C) **Fixed overhead calendar variance**
- (D) **Fixed overhead expenditure variance**
- (E) **Fixed overhead volume variance**
- (F) **Fixed overhead cost variance**

$$1+2+4+1 = 10$$

(b) **KOOTCHAR LTD. currently at 80% capacity has the following particulars:**

Particulars	₹
Sales	48,00,000
Direct Materials	15,00,000
Direct Labour	6,00,000
Variable Overheads	3,00,000
Fixed Overheads	19,00,000

An export order has been received that would utilize half (50%) the capacity of the factory. The order cannot be split i.e. it both to be taken in full and executed at 10% below the normal domestic price or reject totally.

The alternatives available to the Management of the company are:

- (i) **Reject the order and continue with domestic sales only (as at present level of sales).**
Or,
- (ii) **Accept the order, split the capacity (100%) between overseas and domestic sales and turn away excess domestic demand.**
Or,
- (iii) **Increase capacity so as to accept the export order and maintain the present domestic sales by –**
 - A. **Buying an equipment that will increase capacity by 10%. This will result in an increase of ₹ 1,50,000 in fixed costs; and**
 - B. **Work overtime to meet balance of required capacity. In that case labour will be paid at one and a half (1½) times the normal wage rate.**

You are required to prepare a comparative statement of profitability and suggest the best alternative.

$$6+2+2=10$$

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Answer:

3. (a)

AKASH LTD.

Working Notes:

		Budget	(Actual)
(i)	Fixed overhead for the month of Apr' 14	₹1,50,000	₹1,60,000
(ii)	Working days for the month of Apr' 14	25	24
(iii)	Working hours per month (April' 14)	20,000 hrs (100 × 8 × 25)	18,000 hrs (750 × 24 days)
(iv)	Production units per month	5,000 (20,000/4)	4,500
(v)	Standard hours for actual production during the month: Actual production unit × standard hours per unit 4,500 × 4 = 18,000 hours		
(vi)	Standard fixed overhead rate per unit = ₹30.00		
(vii)	Standard fixed overhead rate per hour = ₹7.50		
(viii)	Standard fixed overhead rate per day = ₹6,000		

Computation of fixed overhead cost variances:

(A) Fixed Overhead Efficiency Variance:

$$\begin{aligned}
 &= \text{Standard fixed overhead rate per hour} \times (\text{Standard hours for actual production} - \text{actual hours}) \\
 &= ₹7.50 (18,000 - 18,000) \\
 &= \text{Nil}
 \end{aligned}$$

(B) Fixed Overhead Capacity Variance:

$$\begin{aligned}
 &= \text{Standards fixed overhead rate per hour} \times (\text{Actual hours} - \text{Budgeted hours}) \\
 &= 7.50 \{18,000 - (24 \text{ days} \times 100 \text{ m/c} \times 8 \text{ hrs})\} \\
 &= 7.50 (18,000 - 19,200) \\
 &= 7.50 \times -1,200 \\
 &= ₹9,000 \text{ (Adverse)}
 \end{aligned}$$

(C) Fixed Overhead Calendar Variance:

$$\begin{aligned}
 &= \text{Standard Fixed overhead rate per day} \times (24 - 25) \\
 &= ₹6,000 \times (24 - 25) \\
 &= ₹6,000 \text{ (Adverse)}
 \end{aligned}$$

(D) Fixed Overhead Expenditure Variance:

$$\begin{aligned}
 &= \text{Budgeted fixed overhead} - \text{Actual fixed overhead} \\
 &= ₹1,50,000 - ₹1,60,000 \\
 &= ₹10,000 \text{ (Adverse)}
 \end{aligned}$$

(E) Fixed Overhead Volume Variance:

$$\begin{aligned}
 &= \text{Standard fixed overhead rate per unit} \times (\text{Actual output} - \text{Budgeted output}) \\
 &= ₹30 (4,500 - 5,000) \\
 &= ₹15,000 \text{ (Adverse)}
 \end{aligned}$$

(F) Fixed Overhead Cost Variance:

$$\begin{aligned}
 &= \text{Fixed overhead recovered on actual output} - \text{Actual fixed overhead} \\
 &= (4,500 \times ₹30) - ₹1,60,000 \\
 &= ₹1,35,000 - ₹1,60,000
 \end{aligned}$$

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= ₹25,000 (Adverse)

Verification: -

- (1) Fixed overhead cost variance = Expenses variance + volume variance ₹25,000 (Adverse)
= ₹10,000 (Adverse) + ₹15,000 (Adverse)
- (2) Fixed overhead volume variance = Efficiency variance + Capacity Variance + Calendar variance ₹15,000 (Adverse)
= Nil + ₹9,000 (Adverse) + ₹6,000 (Adverse)

(b) KOOTCHAR LTD

Statement of comparative profitability

Alternatives:-	Current operations 80% domestic sales (1)80%	50% capacity for domestic sales & 50% capacity for export sales (2) 100%	80% capacity for domestic sales and 50% capacity for export sales (3) 130%
Sales domestic [W.N.-1 (a)]	48,00,000	30,00,000	48,00,000
Sales Export (W.N.1 (b))	-	27,00,000	27,00,000
Total Sales (A)	48,00,000	57,00,000	75,00,000
Direct Materials (W.N.2)	15,00,000	1875000	2437500
Direct Labour (W.N. 3)	6,00,000	750000	1050000
Variable overhead (W.N.4)	3,00,000	375000	487500
Total variable cost (B)	24,00,000	3000000	3975000
Contribution: (A-B)	2400000	2700000	3525000
Less: Fixed overheads	1900000	1900000	2050000
Profit	500000	800000	1475000

Suggestion: It reveals from the comparative analysis that alternative-3 i.e. 80% capacity for domestic sales & 50% capacity for Export Sales is the best as it would give highest profits (14.75 lakhs)

Working Notes:

1. (a) Sales revenue at 100% capacity = $\frac{48,00,000}{0.8}$
= ₹60,00,000
Sales revenue at 50% capacity = ₹60,00,000 × 0.5
= ₹30,00,000
(b) Sales revenue at 50% capacity for export sales:
 $30,00,000 \times (1 - 0.10) = ₹27,00,000$
2. Direct Materials of 100% capacity:
 $15,00,000/0.80 = ₹18,75,000$
At 130% capacity = ₹1,87,500 × 1.30 = ₹24,37,500
3. Direct labour at 100% capacity:
 $6,00,000/0.80 = 7,50,000$
At 110% of capacity = 7,50,000 × 1.10 = ₹8,25,000
Balance 20% of capacity =
 $(6,00,000/0.80) \times 0.20 \times 1.50 = ₹2,25,000$

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At 130% of Capacity

₹10,50,000

4. Variable overhead at 100% capacity
 = 3,00,000/0.80 = ₹3,75,000
 At 130% of capacity = 3,75,000 × 1.30 = ₹4,87,500
 Fixed overhead ₹19,00,000 + 1,50,000 = ₹20,50,000
 At 130% of capacity

4. (a) Division- AY of STATUSLINE Ltd. is a profit centre which produces four products M, N, O and P, Each product is sold in the external market also. Data for the products are:

Particulars	M	N	O	P
Market price per unit (₹)	300	292	280	260
Variable production cost per unit (₹)	260	200	180	170
Labour hours required per unit (hrs.)	3	4	2	3

Product P can be transferred to Division-BZ, but the maximum quantity that may be required for transfer is 2,500 units of P.

The maximum sales in the external market are:

M-2800 Units; N-2500 Units; O-2300 Units; and P-1600 Units. Division-BZ can purchase the same product at a price of ₹250 per unit from outside instead of receiving transfer of product P from division-AY.

Required:

What should be the transfer price for each unit for 2,500 units of P, if the total labour hours available in Division-AY are 20,000 hours? 8

- (b) ANSTIM TRANSPORT LTD., a transport company has been given a twenty Kilometer long rout to ply a bus. The bus costs the company ₹10 lakh. It has been insured at 3% per annum. The annual road tax amounts to ₹20,000. Garage rent is ₹4,000 per month. Annual repair is estimated to cost ₹ 23,600 and the bus is likely to last for five years.

The salary of the Driver and the Conductor is ₹6,000 and ₹2,000 per month respectively in addition to 10% of the takings as commission to be shared equally by them. The Manager Salary is ₹14,000 per month and stationery will cost ₹1,000 per month. Petrol and Oil will cost ₹500 per 1000 kilometers. The bus will make three round trips per day carrying on average 40 passengers in each trip.

Assuming 15% profit on takings and that the bus will ply on an average 25 days in a month.

Required:

Prepare Operating Cost statement on a full year basis and also calculate the bus fare to be charged from each passenger per kilometer. 6+2=8

- (c) Briefly distinguish between the two Cost Control Techniqes "Budgetary Control" and "Standard Costing". 4

Answer:

4. (a)

STATUSLINE LTD.

Calculation of product wise contribution per labour hour (key factor)

Particulars	M	N	O	P
	₹	₹	₹	₹
Market price	300	292	280	260
Less: Variable cost	260	200	180	170

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Contribution per unit	40	92	100	90
Labour hours required per unit	3	4	2	3
Contribution per labour hour (₹)	13.3333	23	50	30
Ranking	IV	III	I	II
Maximum demand (units)	2,800	2,500	2,300	1,600
Total No. of hours required	8400	10000	4,600	4,800
Allocation of 20000 hours on the basis of ranking	*600	10,000	4,600	4,800

*(Balancing figure)

Time required meeting the demand of 2500 units of product P for division BZ is 7500 hours. This requirement of time viz. 7500 hours for providing 2500 units of product P for division BZ can be met by sacrificing 600 hours of product M (200 units) and 6900 hours of product N (1725 units)

Computation of Transfer price of product P :	2500 units
Variable cost @ 170 per unit	₹4,25,000
Add: Opportunity cost (contribution lost)	
Product M-600 hours @ 13.3333 = 8,000	
Product N – 6,900 hours @ 23 = <u>1,58,700</u>	<u>₹1,66,700</u>
Total amount to be recovered (Total transfer price)	₹5,91,700

Hence, transfer price per unit of product P = $5,91,700/2,500 = ₹236.68$ per unit

Answer.4 (b)

ANSTIM TRANSPORT LTD

Statement Showing Operating Cost of the Bus Per Annum

Particulars	₹
(a) Fixed Charges:	
Manager's Salary (₹14,000 x 12)	1,68,000
Driver's Salary (₹6,000 x 12)	72,000
Conductor's Salary (₹2,000 x 12)	24,000
Road Tax	20,000
Insurance (3% of 10,00,000)	30,000
Garage Rent (₹4,000 x 12)	48,000
Stationery (₹1,000 x 12)	12,000
Depreciation (₹10,00,000 /5)	2,00,000
Total Fixed Cost	5,74,000
(b) Maintenance Costs:	
Repair	23,600
(c) Running Charges:	
Petrol and Oil (36,000 km / 1000) x ₹500	18,000
(d) Total Cost (a + b + c)	6,15,600
(e) Commission	82,080
(f) Profit	1,23,120
(g) Total Takings (d + e + f)	8,20,800

Calculation of bus fare to be charged:

- A. Effective km (20 km × 2 × 3 × 25 × 12) = 36,000 km
- B. Effective Passenger kilometers (36,000 km × 40) = 14,40,000 passenger km
- C. Total Takings = ₹8,20,800

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D. Rate to be charged per kilometer from each passenger ($\text{₹}8,20,800 / 14,40,000$) = 0.57

Working note: Calculation of distance covered
 = $20 \text{ km} \times 2 \times 3 \times 25 \times 12 = 36,000 \text{ km per annum}$

Calculation for Commission and Profit:

Let total taking be x.
 Commission 10% = $x / 10$, Profit is 15% of taking
 Profit = $15x / 100 = 3x / 20$
 Total Cost without Commission = ₹6,15,600
 $X = 6,15,600 + x / 10 + 3x / 20$
 Therefore, $x = \text{₹} 8,20,800$
 Commission = ₹82,080
 Profit = ₹ 1,23,120

(c) Both budgetary control and standard costing are cost control techniques making use of predetermined standards/targets to measure actual performance and to find out deviations. But they are some important differences between the two techniques, some of these are indicated below:

Budgetary control	Standard costing system
A management technique in planning and control	An engineering exercise and based on engineering data
A financial measure of target and achievement	A costing techniques
For each department or section, analysis is made	For each product
Total idea for department/organization	Unit idea
Shows only expected costs and actual	Shows how cost should behave
Emphasizes cost levels that are not to be exceeded	Shows level to which cost should be reduced
For organization as a whole	For manufacturing activities
Can operate without standard costing system	Standards are needed
Emphasis is more on excesses over budget	Any variance- adverse or favorable is investigated
Helps in cost controls	Aids in cost reduction

[Any four points should be awarded full marks.]

Section B

Answer any one question (Carrying 16 Marks) from this Section.

5. (a) The following figures are extracted from the Accounts of FUSTON LTD., a single product manufacturing company:

Year ended March 31	(Amount in ₹ Million)	
	2014	2013
Gross Sales including Excise duty	1,428	1,312
Excise duty	206	185

Suggested Answer_Syl12_Jun2014_Paper_10

Raw materials consumed	798	682
Direct wages	25	19
Power and fuel	21	17
Stores and spares	4	2
Depreciation charged to production cost centres	11	9
Factory overheads:		
Salaries and wages	4	2
Depreciation	2	2
Rates and Taxes	1	1
Other overheads	4	3
Administrative overheads:		
Salaries and wages	7	5
Rates and Taxes	1	1
Other overheads	115	104
Selling and Distribution overheads:		
Salaries and wages	5	4
Packing and Forwarding	4	3
Depreciation	1	1
Other overheads	87	75
Interest	60	47
Bonus and Gratuity	8	6

You are required to compute the following ratios as stipulated in PAR-9 of the Annexure to Cost Audit Report under the Companies (Cost Audit Report) Rules 2011 for the year ended March 31, 2014 and 2013.

- (i) Profit Before Tax (PBT) to Value Added.
(ii) Value Added to Net Sales.
(iii) Profit Before Tax (PBT) to Net Sales. 4+4+1+1+2=12

(b) FUTURA LTD. a Manufacturing Company is exporting 80% of its Sales and 20% is domestic sales. Can this company be exempted from the mandatory Cost Audit? 4

Answer:

5. (a)

FUSTON LTD.

CALCULATION OF PROFIT BEFORE TAX (PBT)

Year ended March, 31:	2014	2013
	(Amount in ₹ Million)	
Gross Sales inclusive of Excise Duty	1,428	1,312
Less: Excise Duty	206	185
Net Sales (A)	1,222	1,127
Cost of Sales:		
Raw material consumed	798	682
Direct Wages	25	19
Power and Fuel	21	17

Suggested Answer_Syl12_Jun2014_Paper_10

Stores & Spares	4	2
Depreciation charged to production centers	11	9
Factory overheads (including depreciation):	11	8
Administration overheads:	123	110
Selling and Distribution overheads (including depreciation)	97	83
Interest	60	47
Bonus and Gratuity	8	6
Total (B)	1,158	983
Profit before tax (PBT) (A-B)	64	144

Calculation of Value Added:

Year ended March, 31:	2014	2013
	(Amount in ₹ Million)	
Net Sales (A)	1,222	1,127
Less: Cost of Brought out of Inputs:		
Direct materials consumed	798	682
Stores & spares	4	2
Power and fuel	21	17
Overheads (exclusive salaries, wages, rates & taxes and depreciation, Interest, Bonus, Gratuity)	210	185
Total cost of Brought out of inputs (B)	1,033	886
Value Added (A-B)	189	241

Note: "Value Addition" is defined in Para- 8 of the companies (cost audit report) Rules 2011 as the difference between Net output value (Net sales) and cost of boughout material and services for the product under reference"

Year ended March, 31:	2014	2013
	(Amount in ₹ Million)	
i) Profit before tax (PBT) to value added as (%)	$(64/189) \times 100$ 33.86%	$(144/241) \times 100$ 59.75%
ii) Value added to net Sales as (%)	$(189/1,222) \times 100$ 15.47%	$(241/1,127) \times 100$ 21.38%
iii) Profit before tax (PBT) to net sales as (%)	$(64/1,222) \times 100$ 5.24%	$(144/1,127) \times 100$ 12.78%

- (b)** The exemption from mandatory cost audit is available only to those 100% EOUs who are registered under the policy document as per the Foreign Trade Policy and which are functioning within the permissible approved limit as per the said Policy. The DTA (Domestic Tariff Area) sales should not exceed the permissible limits as per the policy in force.

If the percentage of domestic sales is within the DTA limit, the company will be exempted from mandatory cost audit. It may be noted that if DTA sales for any year exceeds the permissible limits, then the exemption from cost audit available to the unit shall be withdrawn and the unit will be subjected to cost audit in accordance with the provisions of applicable rules/orders starting with the year in which exemption stood withdrawn and for every subsequent year thereafter.

Suggested Answer_Syl12_Jun2014_Paper_10

6. (a) Whether a Cost Auditor can be appointed as internal auditor of the company. Whether there is any restriction on the Cost Auditor to accept assignments from a company where he is the Cost Auditor. (3+1)=4
- (b) Whether Separate Form 23C is required to be filed by a Company having two or more different types of products covered under Cost Audit? 2
- (c) The following Figures are extracted from the Financial Accounts of VIKAS TEXTILES LTD. manufacturing a standard product for the year ended March 31, 2014.

Particulars	₹	₹
Sales (24,000 units)		24,00,000
Material Consumed		10,96,000
Wages		6,04,000
Factory Overheads		3,32,000
Administrative Overheads		1,52,960
Selling & Distribution Overheads		1,80,000
Preliminary Expenses		14,000
Interest on Loan		10,000
Stock of Finished Goods (800 units)		64,000
Work- in- Progress as on 31.03.2014		
Materials	33,600	
Wages	14,400	
Factory overheads	8,000	56,000
Dividend received		7,200

In the Cost Accounts, Factory overheads have been charged to the production at 20% on Prime Cost; Administrative Overhead at ₹6 per unit on total units produced.

Selling and distribution overheads at ₹8 per unit on total units sold.

Required:

- (i) Prepare Costing and Financial Profit and Loss Accounts for the year ended March 31, 2014 and
- (ii) Reconcile the differences in the Profit in the two sets of accounts. 3+4+3=10

Answer:

6. (a) A cost Auditor cannot render any services to the company whether acting individually or through the same firm or through other groups firms where he or any partner has any common interest, relating to:
- (i) Design and implementation of cost accounting system; or
 - (ii) The maintenance of cost accounting records, or
 - (iii) Act as internal auditor,
- However, a cost auditor can certify the compliance report or provide any other services as may be assigned by the company, excluding the services mentioned above.
- (b) The company would be required to file individual form 23C for each product under reference even if the same auditor is appointed for all the products.

Suggested Answer_Syl12_Jun2014_Paper_10

(c) **VIKAS TEXTILE LTD.**
Costing Profit & Loss Account for the Year Ended March 31, 2014

Particulars	Amount(₹)	Particulars	Amount(₹)
To Materials consumed	10,96,000	By Sales	24,00,000
Wages	6,04,000		
Prime cost:	17,00,000		
To factory overheads (at 20% of prime cost)	3,40,000		
Gross works cost:	20,40,000		
Less: Closing stock of WIP			
Materials 33,600	(57,600)		
Wages 14,400			
Factory Overhead 9600 (20% of 48,000)			
Works cost	19,82,400		
To Administrative overhead (24000+800) units × 6	1,48,800		
Cost of production	21,31,200		
Less: Closing stock of finished goods (2131200/24800) × 800	(68,748)		
Cost of Goods Sold	20,62,452		
To: Selling & distribution overheads(24000×8)	1,92,000		
Cost of Sales	22,54,452		
To Balance C/d (profit)	1,45,548		
	24,00,000		24,00,000

Financial Profit & Loss Account For The Year Ended March 31, 2014

Particulars	Amount ₹	Particulars	Amount ₹
To Materials consumed	10,96,000	By Sales (24,000 units)	24,00,000
To Wages	6,04,000	By Stock of finished goods (800 units)	64,000
To Factory overheads	3,32,000	Work in progress	
To Administrative overheads	1,52,960	Materials 33,600	
To Selling & distribution overheads	1,80,000	Wages 14,400	
To Preliminary expenses	14,000	Factory expenses <u>8,000</u>	
To Interest on loan	10,000		56,000
To Balance c/d (net profit)	1,38,240	By Dividend received	7,200
	25,27,200		25,27,200

Statement of Reconciliation As On March 31, 2014

Particulars	Amount (₹)	Amount (₹)
Profit as per cost accounts		1,45,548
Add: Dividends received – excluded from cost A/cs	7,200	
Add: Over-absorption of factory overheads in cost accounts [3,40,000 – 3,32,000]	8,000	

Suggested Answer_Syl12_Jun2014_Paper_10

Add: Over-absorption of selling & distribution overheads in cost accounts [1,92,000 – 1,80,000]	<u>12,000</u>	27,200
Less: Preliminary expenses excluded from cost accounts	14,000	
Less: Interest on loan-not included in cost accounts	10,000	
Less: Under-absorption of Administrative overheads in cost accounts [1,52,960 – 1,48,800]	4,160	
Less: Over-valuation of closing stock of finished goods in cost accounts [68,748 – 64,000]	4,748	
Less: Over-valuation of closing stock of W.I.P. in cost accounts [57,600 – 56,000]	<u>1,600</u>	
		(34,508)
Profit as per Financial Accounts		1,38,240

Section C

Answer any two questions (Carrying 12 Marks each) from this Section.

- 7.(a) State the exception of Law of Demand. 4
- (b) RIDHAM LTD. produces consumer goods. The cost function of the company is
- $$C = \frac{1}{3}x^3 + 5x^2 + 28x + 10,$$
- Where C is the total cost and x is the output. A tax at the rate of ₹2 per unit of imposed and the company adds it to the cost. If the demand function is given by $P = 2530 - 5x$. Where ₹P is the price per unit of output, find the profit maximizing output and the price at this level. 4
- (c) ANUSA TRAVEL Ltd. a tour operator company charges ₹136 per passenger for 100 passengers with a discount of ₹4 for each 10 (Ten) passengers in excess of 100. Determine the number of passengers that will maximize the amount of money the Anusa Travel Ltd. receives. 4

Answer:

7.(a) The following are the exceptions to the Law of Demand

- (i) **Giffen Paradox:** According to Giffen, even though the price, for necessary goods rise, the demand for them will not decrease. These goods are called "Giffen Goods".
- (ii) **Prestigious goods :** The law of demand will not operate in case of prestige goods like diamonds, cars etc., The demand for these does not decrease with the rise in the price, as these goods are attached with prestige.
- (iii) **Speculative Business:** The law of demand does not operate in case of the speculative business. If people think that the prices of goods increase in the future, now they will buy more units of that commodity. This is against the law of demand.
- (iv) **Trade Cycles:** The law of demand does not operate in periods of trade cycles. During the prosperity period, people may buy more goods at higher prices. In periods of depression, people buy fewer goods even though the prices are less.
- (v) **Ignorance of the Consumers:** The law of demand is not applicable in case of the ignorant consumers. By ignorance, people think that high priced goods are qualitative goods. Therefore the consumers would buy the goods even at high price.

Suggested Answer_Syl12_Jun2014_Paper_10

(b)

RIDHAM LTD.

Here the cost function $C = \frac{1}{3}x^3 + 5x^2 + 28x + 10$.

Taking into account the tax aspect, total cost function becomes:

$$C = \frac{1}{3}x^3 - 5x^2 + 30x + 10, x \text{ being the output.}$$

Total revenue R, due to sale of x units is given by:

$$R = p \times x = (2,530 - 5x)x = 2530x - 5x^2$$

If P be the profit, then

$$P = R - C:$$

$$= 2,530x - 5x^2 - \left[\left(\frac{1}{3}x^3 - 5x^2 + 30x + 10 \right) \right]$$

$$P = 2,500x - \frac{1}{3}x^3 - 10$$

$$\text{Or, } \frac{d(P)}{dx} = \frac{d}{dx} \left(2,500x - \frac{1}{3}x^3 - 10 \right) = 2,500 - x^2$$

If profit is maximum $\frac{dP}{dx} = 0$ and $\frac{d^2P}{dx^2} = -ve$

$$\text{Now, } \frac{dp}{dx} = 0 \text{ gives, } 2,500 - x^2 = 0$$

$$\text{or, } x^2 = 2,500 \text{ i.e. } x = \pm 50 \text{ [(-) 50 is to be ignored]}$$

$$\frac{d^2P}{dx^2} = -2x \rightarrow \text{Which remains negative for } x = 50$$

Hence, Profit is maximum when the output is 50 units.

Required price is given by

$$\begin{aligned} |P|_{x=50} &= |2530 - 5x|_{x=50} \\ &= 2530 - 5 \times 50 \\ &= 2530 - 250 \\ &= ₹ 2280 \end{aligned}$$

(c)

ANUSA LTD

If x be the required number of passengers, the revenue from each passenger is

$$136 - \frac{4}{10}(x-100) \text{ for } x \geq 100$$

if R be the total Revenue, then

$$\begin{aligned} R = rx &= x \left\{ 136 - \frac{4}{10}(x-100) \right\} = 136x - \frac{2}{5}x^2 + 40x \\ &= 176x - \frac{2}{5}x^2 \end{aligned}$$

For R to be maximum, $\frac{dR}{dx} = 0$, and $\frac{d^2R}{dx^2} = -ve$

Suggested Answer_Syl12_Jun2014_Paper_10

$$\frac{dR}{dx} = 0, \text{ gives } \frac{d}{dx} (176x - \frac{2}{5}x^2) = 0$$

$$\text{or, } 176 - \frac{4}{5}x = 0, \quad x = \frac{5 \times 176}{4} = 220$$

$$\frac{d^2R}{dx^2} = -\frac{4}{5} = -ve \text{ for } x = 220$$

Thus R is maximum for $x = 220$

Hence Required number of passenger is 220.

8.(a) Demand functions for two Commodities

$$x_1 = \frac{4}{P_1^2 P_2} \text{ and } x_2 = \frac{16}{P_1 P_2^2}$$

Where x_1 and x_2 are quantities of demand for two commodities respectively, P_1 and P_2 being their units' prices.

Examine whether the commodities are complementary or competitive. 4

(b) BATRON LTD. a monopolist aims at profit maximization. The fixed cost of the firm is ₹200 and the average variable cost of the firm is constant at ₹30 per unit. Batron Ltd. sells goods in Punjab & Haryana and estimated demand function for the goods in Punjab & Haryana are as under:

$$P_P = 40 - 2.5 Q_P$$

$$P_H = 120 - 10 Q_H$$

If the price discrimination is practised by Batron Ltd., what will be the profit maximizing output? 4

(c) What are the assumptions of COURNOT'S SOLUTION to Duopoly pricing? 4

Answer:

8. (a) Demand functions for two Commodities are

$$x_1 = \frac{4}{P_1^2 P_2}$$

$$\text{Or, } x_1 = 4(p_1^{-2} \cdot p_2^{-1})$$

$$\frac{\partial x_1}{\partial p_2} = 4p_1^{-2} \cdot (-1)p_2^{-2} = \frac{-4}{P_1^2 \cdot P_2^2}$$

$$x_2 = \frac{16}{P_1 P_2^2}$$

$$\text{Or } x_2 = 16(p_1^{-1} \cdot p_2^{-2})$$

$$\frac{\partial x_2}{\partial p_1} = 16p_2^{-2} \cdot (-1 p_1^{-2}) = \frac{-16}{P_1^2 \cdot P_2^2}$$

Hence,

$$= -\frac{16}{P_1^2 P_2^2} < 0$$

Since $\frac{\delta x_1}{\delta P_2}$ and $\frac{\delta x_2}{\delta P_1}$ are < 0 , a decrease in either price corresponds to an increase in both

the demands.

Hence the Commodities are complementary.

Suggested Answer_Syl12_Jun2014_Paper_10

(b) When price discrimination is practiced profit maximizing condition is

$$\begin{aligned}MR_P &= MC && \dots\dots\dots (1) \text{ for Punjab} \\MR_H &= MC && \dots\dots\dots (2) \text{ for Haryana}\end{aligned}$$

$$\begin{aligned}\text{Now, } P_P &= 40 - 2.5 Q_P \\TR_P &= 40 Q_P - 2.5 Q_P^2 && MR_P = \frac{d}{dQ_P}(40 Q_P - 2.5 Q_P^2) \\MR_P &= 40 - 5Q_P\end{aligned}$$

$$\begin{aligned}\text{And } P_H &= 120 - 10 Q_H \\TR_H &= 120 Q_H - 10 Q_H^2 && MR_H = \frac{d}{dQ_H}(120 Q_H - 10 Q_H^2) \\MR_H &= 120 - 20 Q_H\end{aligned}$$

Since average variable cost is constant at ₹30 per unit, then

$$\begin{aligned}MC &= 30 \\40 - 5Q_P &= 30 \\Q_P &= 2 \text{ units} \text{ \& } 120 - 20Q_H = 30 \\i. e. Q_H &= \frac{90}{20} = 4.5 \text{ units.}\end{aligned}$$

Thus profit maximizing output in Punjab will be 2 units and Haryana will be 4.5 units.
Thus profit maximizing output for the monopolist:
2 + 4.5 = 6.5 units.

(c) A. A. Cournot, a French economist was found solution to duopoly pricing in 1838.

His model is based on the following assumptions:

- (i) Total output must be sold out.
- (ii) Two sellers produce and sell a homogenous product.
- (iii) The number of buyer is large.
- (iv) Each seller knows the demand curve for his product.
- (v) The cost of production is assume to be zero.
- (vi) Each supplier takes the supply of his rival to be constant.
- (vii) Each accepts the market demand for his product.
- (viii) Each seller aims at maximum revenue.

9.(a) **BURNET LTD. sells output in a perfectly Competitive Market. The average variable cost function of Burnet Ltd. is :**

$$AVC = 300 - 40Q + 2Q^2$$

Burnet Ltd. has an obligation to pay ₹500 irrespective of the output produced. What is the price below which Burnet Ltd. has to shut down its operation in the short run? 4

(b) **Discuss briefly the degree of price discrimination as distinguished by famous Economist Prof. Pigou. 4**

(c) **The demand and supply function under perfect competition are $y = 50 - x^2$ and $y = 2(x^2 + 1)$ respectively. Find the price under Market Equilibrium and producer's Surplus. 4**

Suggested Answer_Syl12_Jun2014_Paper_10

Answer:

9. (a)

BURNET LTD

Burnet Ltd. has to shut down its operation, if the price is less than average variable cost. Under perfect competition, Equilibrium

$$P = MR$$

i.e. Price is equal to marginal revenue. The firm will continue its operation under the short run so long as price is atleast equal to average variable cost. Therefore, the equilibrium price which the firm will shut down is the minimum AVC i.e. average variable cost.

$$AVC = 300 - 40Q + 2Q^2$$

$$AVC \text{ is minimum where } \frac{d(AVC)}{dQ} = 0$$

$$\text{i.e. } \frac{d(AVC)}{dQ} = -40 + 4Q = 0$$

i.e. $Q = 10$ units.

When the company is producing 10 units

$$\begin{aligned} AVC &= 300 - 40Q + 2Q^2 \\ &= 300 - 40(10) + 2(10)^2 \\ &= 300 - 400 + 200 = 100 \end{aligned}$$

If the price falls before ₹100 the company has to shut down its operation under short run.

(b) Prof. A. C. Pigou has distinguished the degree of price discrimination into 3 on the basis of the degree or extent or price discrimination.

- Under the first type of price discrimination the monopolist will not allow any consumer surplus to the consumers. This type of price discrimination is called perfect price discrimination.
- Second degree of price discrimination occurs where the monopolist is able to get a part of consumer surplus but not entire consumer surplus.
- In this third degree of price discrimination the monopolist divides the customer into two or more classes or groups or market and are divided on the basis of elasticity of demand. This type of discrimination is the most common one.

(c) For Market equilibrium, Demand = Supply at $x =$ quantity

$$\text{Thus, } 50 - x^2 = 2(x^2 + 1) \text{ or, } 48 = 3x^2 \text{ or } x^2 = 16 \text{ or } x = \pm 4$$

But $x = -4$ as negative impossible, $\therefore x = 4$ units.

So price under market equilibrium: $2(x^2 + 1) = 2(16 + 1) = 34 = (50 - 16)$ at $x = 4$ units.

$$\begin{aligned} \text{Producer's Surplus: } & 4 \times 34 - \int_0^4 (2x^2 + 2) dx = 136 - \left[\frac{2x^3}{3} + 2x \right]_0^4 \\ &= 136 - \left(\frac{128}{3} + 8 \right) = 128 - \frac{128}{3} \\ &= \frac{256}{3} = 85\frac{1}{3} \text{ units} \end{aligned}$$