

# Answer to PTP\_Intermediate\_Syllabus 2012\_Jun2014\_Set 1

## Paper – 10: Cost & Management Accountancy

Time Allowed: 3 Hours

Full Marks: 100

**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.**  
**(Working Notes should form part of the answer.)**

### Question.1

- (a) Selling price of a product is ₹5 per unit, variable cost is ₹3 per unit and fixed cost is ₹12,000. Then what will be the break-even point in unit? [2]

Answer:

$$\begin{aligned}\text{Contribution} &= \text{Sales} - \text{Variable Cost} \\ &= 5 - 3 \\ &= 2\end{aligned}$$

$$\begin{aligned}\text{Break-even point} &= \text{Fixed cost} / \text{Contribution per unit} \\ &= 12,000 / 2 \\ &= 6,000 \text{ units}\end{aligned}$$

- (b) A factory operates a standard cost system, where 2,000 kgs of raw materials @ ₹12 per kg were used for a product, resulting in price variance of ₹6,000(F) and usage variance of ₹3,000(A). Then what will be the standard material cost of actual production? [2]

Answer:

$$\begin{aligned}\text{Total material cost variance} &= \text{Material price variance} + \text{Material usage variance} \\ &= 6,000(\text{F}) + 3,000(\text{A}) \\ &= 3,000(\text{F})\end{aligned}$$

$$\begin{aligned}\text{Actual material cost} &= 2,000 \times 12 \\ &= ₹ 24,000\end{aligned}$$

$$\text{Hence, the standard material cost of actual production} = 24,000 + 3,000(\text{F}) = ₹ 27,000$$

- (c) State the two objective of Cost Accounting? [2]

Answer:

The main two objective of Cost accounting are as follows:

- (i) To ascertain the costs under different situations using different techniques and system of costing.
- (ii) To determine the value of closing inventory for preparing financial statements of the concern.

- (d) State out-of-pocket cost. [2]

Answer:

**Out-of-Pocket Cost:** This is the portion of the cost associated with an activity that involves cash payment to other parties, as opposed to costs which do not require any cash outlay, such as depreciation and certain allocated costs. Out-of-Pocket costs are very much relevant in the consideration of price fixation during trade recession or when a make-or-buy decision is to be made.

- (e) The budgeted annual sale of a firm is ₹80 lakh and 25% of the same is cash sales. If the average amount of debtors of the firm is ₹5 lakhs, what will be the average collection period of credit sales? [2]

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**Answer:**

Credit sale = ₹80 - ₹20 = ₹60 lakhs

Hence,

$$\begin{aligned} \text{Avg. collection period} &= \text{Debtors/Credit sales per month} \\ &= 5/(60/12) \\ &= 5/5 = 1 \text{ month} \end{aligned}$$

- (f) A Company has been in existence since 1990 and is covered under cost audit for the first time in 2011-12. Whether it is mandatory to indicate previous year figure while submitting the report. [2]**

**Answer:**

A company coming under the purview of the Cost audit for the first time, the cost auditor shall mention figures for the previous year(s) certifying by means of a note that the figure so stated are on the basis of information furnished by the management, for which he has obtained a certificate from them.

- (g) Are the units located in SEZs/FTZs/EPZs or 100% EOU required to maintain Cost Accounting Records? [2]**

**Answer:**

There is no exemption to units located in SEZs/FTZs/EPZs or 100% EOU from maintenance of cost accounting records and filling of compliance report with the ministry of corporate affairs in compliance with the applicable cost accounting records rules.

- (h) The following are the annual profits in thousands in a certain business:**

Year	2007	2008	2009	2010	2011	2012	2013
Profit(thousands)	60	72	75	65	80	85	95

**By the method of least squares fit a straight line using the estimate profit for 2017. [3]**

**Answer:**

Fitting straight line trend by least squares

Year (t)	Profit(000)Y	Time deviation (X)	XY	X <sup>2</sup>
2007	60	-3	-180	9
2008	72	-2	-144	4
2009	75	-1	-75	1
2010	65	0	0	0
2011	80	+1	+80	1
2012	85	+2	+170	4
2013	95	+3	+285	9
N=7	∑Y=532	∑X=0	∑XY=136	∑X <sup>2</sup> =28

The equation of straight line Trend is  $Y_c = a + bX$

Since  $\sum X = 0$ ,  $a = \frac{\sum Y}{N}$  and  $b = \frac{\sum XY}{\sum X^2}$  Therefore  $a = 532/7 = 76$  and  $b = 136/28 = 4.857$

The equation would be  $Y_c = 76 + 4.857X$

For 2017 the value would be  $b+7$ . Then  $Y_{2016} = 76 + (4.867 \times 7) = 76 + 33.99 = 109.99$

- (i) The cost function of a firm is given by  $c = x^3 - 4x^2 + 9x$ , find at what level of output Average Cost is minimum and The Minimum Cost. [3]**

**Answer:**

Total cost =  $x^3 - 4x^2 + 9x$

Average cost =  $x^2 - 4x + 9$

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In order that average cost is minimum  $\frac{dy}{dx} = 0$  and the value of  $\frac{dy^2}{dx^2}$  should be positive

$$\text{i.e. } \frac{dy}{dx} = 2x - 4 = 0$$

$$\text{or, } x - 2 = 0$$

$$\therefore x = 2$$

$\frac{dy^2}{dx^2} = 2$  which is positive so the function will have minimum values.

Minimum Average cost

$$= x^2 - 4x + 9$$

$$= 4 - (4 \times 2) + 9$$

$$= 13 - 8 = 5$$

### SECTION A

Answer any two questions from this section.

#### Question.2

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

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

**Required:**

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

**Answer:**

Assume Total Production = 100

	A	B	C	D	Total
Price	740	615	550	460	
(-)Cost	425	400	375	345	
Profit per unit	315	215	175	115	
Share of production	40	25	20	15	
Total Return	12,600	5,375	3,500	1,725	23,200
Capital Employed	1,570 x 40 = 62,800	1,075 x 25 = 26,875	875 x 20 = 17,500	575 x 15 = 8,625	1,15,800

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

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Calculation of Uniform Price

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

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

(b) The following facts are extracted from the books of Alpha Radio Manufacturing Company for the year 2013.

(i) It produces two types of radio - Type A and Type B and sells these in two market - Kolkata and Siliguri.

(ii) The budgeted and actual sales for the year 2013 are as follows:

	Kolkata	Siliguri
Type A – Budgeted	1000 units at ₹ 200 each	800 units at ₹ 200 each
Actual	900 units at ₹ 200 each	750 units at ₹ 200 each
Type B – Budgeted	800 units at ₹ 300 each	600 units at ₹ 300 each
Actual	1000 units at ₹ 300 each	750 units at ₹ 300 each

Analysis of variance discloses that Type A is overpriced and Type B is under-priced. If the price of A Type radio set is reduced by 10% and price of B Type radio set is increased by 20% and if a modern and extensive advertisement campaign is introduced, then the following volume of sales could be made in the next year as expected by the Marketing Manager.

Expected increase/decrease over the current budget		Kolkata Market	Siliguri Market
Product A:	Due to change in pricing policy	+20%	+20%
	Due to introduction of modern advertisement campaign	+5%	+5%
Product B:	Due to change in pricing policy	+10%	(-)2%
	Due to introduction of modern advertisement campaign	+5%	+5%

On the basis of above you are required to prepare sales budget for the year 2014.

[10]

Answer:

### Calculation of Budgeted Sales in 2014

Type - A	Kolkata	Siliguri
Budgeted of last year (2013)	1,000	800
Add: Increment for change in Pricing Policy (+20% / +20%)	200	160
Add: Increment for Advertisement Campaign (+5% / +5%)	50	40
Total Budgeted Sales for 2014 (units)	1,250	1,000
Type - B		
Budgeted for last year (2013)	800	600
Add: Increment / Decrement for change in pricing policy [+10% / - (2)%]	80	(12)
Add: Increment for Advertising Campaign (+5% / + 5%)	40	30
Total Budgeted Sales for 2014 (units)	920	618

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<b>Sales value for</b>		
Type A - Price	200	200
Less: Reduction in price	(20)	(20)
	180	180
<b>Type B</b>		
Price	300	300
Add: Increase in price	60	60
	360	360
<b>Sales Budget for 2014</b>		
<b>Type - A</b>		
Units	1,250	1,000
Price	180	180
Total Sales (A)	2,25,000	1,80,000
<b>Type B</b>		
Units	920	618
Price	360	360
Total Sales (B)	3,31,200	2,22,480
∴ Total Sales (A+B)	5,56,200	4,02,480

### Question.3

- (a) Gupta Enterprise is operating at 60% capacity level producing and selling 60,000 units @ ₹ 50 per unit. Other relevant particulars are as follows:

	Cost per unit
Material	₹ 20
Conversion Cost (variable)	₹ 10
Dealer's margin (10% of sales)	₹ 5
Fixed cost for the period is ₹ 6,00,000	

As there is a stiff competition, it is not possible to sell all the products at the existing cost price structure. The following alternative proposals are considered:

- (i) Decrease selling price by 20%  
(ii) Increase dealer's margin from 10% to 20%

Select the better alternative. Also calculate the sales volume required to maintain the same amount of profit under the alternative which is considered better assuming that volume of sales will not be a limiting factor under such alternative. Also assume that fixed cost will remain constant. [3+3=6]

Answer:

Evaluation of Both the Option		
	Selling Price Decreased by 20%	Increase dealer's Margin to 20%
Selling Price	$50 - (50 \times 20\%) = 40$	50
Less: Material	(20)	(20)
Less: Conversion Cost	(10)	(10)
Less: Dealers Margin	(4)	(10)
Contribution per unit	6	10

∴ We must increase the dealer's commission from 10% to 20% as the contribution is higher in this alternative by  $(10 - 6) = ₹ 4$ .

Profit Required in the New Alternative =  $[(50 - 20 - 10 - 5) \times 60,000 - 6,00,000] = ₹ 3,00,000$

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∴ Contribution - Fixed Cost = ₹ 3,00,000

Contribution = ₹ 3,00,000 + ₹ 6,00,000 = ₹ 9,00,000

∴ Required Sales units =  $\frac{\text{Total Contribution}}{\text{Contribution per unit}} = \frac{₹ 9,00,000}{10} = 90,000 \text{ units}$

∴ Gupta Enterprises will have to sell 90,000 units to earn the same profits as earlier.

- (b) From the following particulars furnished by M/s. Starlight Co. Ltd. find out (i) Material cost variance; (ii) Material usage variance and (iii) Material price variance.

Value of Material purchased	₹ 9,000 units
Quantity of Material purchased	3,000 units
Standard quantity of materials required per tonne of Finished product	25 units
Standard rate of material	₹ 2 per units
Opening Stock	Nil
Closing stock of material	500 units
Finished production during the period	80 tonnes

[4+3+3]

**Answer:**

Material consumed = Quantity of material purchased - Closing stock of materials  
= 3000 units - 500 units  
= 2500 units

Actual rate of material =  $\frac{\text{Value of material purchased}}{\text{Quantity of material purchased}}$

$$= \frac{₹ 9,000}{3,000}$$
$$= ₹ 3 \text{ per unit}$$

Standard Quantity for actual output = 25 units x 80 tonnes  
= 2000 units

- (i) Material Cost Variance  
= Standard Cost - Actual Cost  
= Standard Price x Standard Quantity - Actual Price x Actual Quantity  
= (₹ 2 x 2000 units) - (₹ 3 x 2500 units)  
= ₹ 4,000 - ₹ 7,500  
= ₹ 3,500 (A)

- (ii) Material Price Variance  
= Actual Quantity x (Standard Price - Actual Price)  
= 2500 x (₹ 2 - ₹ 3)  
= 2500 x (- ₹ 1)  
= ₹ 2,500 (A)

- (iii) Material Usage Variance  
= Standard Price (Standard Quantity - Actual Quantity)  
= ₹ 2 (2000 units - 2500 units)

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= ₹ 2 (-500 units)

= ₹ 1,000 (A)

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

Particulars	₹
(a) Issued of material:	
Direct	55,000
Indirect	15,000
(b) Allocation of wages and salaries:	
Direct	20,000
Indirect	4,000
(c) Overheads absorbed in jobs:	
Factory	15,000
Administration	5,000
Selling	3,000
(d) Under/ over absorbed overheads:	
Factory (over)	2,000
Admn. (under)	1,000

[4]

**Answer:**

### Journal entries

Particulars	Dr. ₹	Cr. ₹
Work in Progress Control A/c Dr. Factory Overheads Control A/c Dr. To Material Control A/c	55,000 15,000	70,000
Work in Progress Control A/c Dr. Factory Overheads Control A/c Dr. To Wages Control A/c	20,000 40,000	24,000
Work in Progress Control A/c Dr. Finished goods Control A/c Dr. Cost of Sales A/c Dr. To Factory Overhead Control A/c To Administrative Overhead Control A/c To Selling Overhead Control A/c	15,000 5,000 3,000	15,000 5,000 3,000
Costing Profit & Loss A/c Dr. To Administrative Overhead Control A/c	1,000	1,000
Factory Overhead Control A/c Dr. To Costing Profit & Loss A/c	2,000	2,000

### Question.4

(a) Explain briefly benefits of Integrated Accounting System.

[5]

**Answer:**

Integrated accounting system is that system of accounting in which Cost and Financial Accounts are kept in the same set of books. On one hand it provides useful information for the ascertainment of the cost of each product, job, process or operation. On the other hand it provides information for preparing the Profit and Loss Account and the Balance Sheet. All the accounting entries are similar to that of integrated accounts except the fact that the General

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Ledger Adjustment Account is not opened. Thus the expenses and sales are categorized into cash or credit and accordingly Cash (Bank) Account, Creditor's Account and Debtor's Account are opened. Benefits of Integrated Accounting System:

- (i) Since only one set of books is maintained there is only one profit figure. Thus the question of reconciling costing and financial profits does not arise.
- (ii) Due to maintenance of one set of books, a lot of time and efforts are saved.
- (iii) It is more economical as it is based on the concept of 'Centralisation of Accounting function.
- (iv) No delay is caused in obtaining information as it is provided from the books of original entry.
- (v) Since financial books are strictly checked for accuracy, the costing accounts will also undergo similar checks because of the integrated accounting system.
- (vi) Use of mechanized accounting has further facilitated the operation of the system.

(b) ABC Ltd. is following Activity Based Costing. Budgeted Overhead and cost driver volumes are as follows:

Cost Pool	Budgeted Overheads	Cost Driver	Budgeted Volume
Material Procurement	11.60 lakhs	No. of orders	2,200
Material handling	5.00 lakhs	No. of movement	1,300
Maintenance	19.40 lakhs	Maintenance hours	16,800
Set-up	8.30 lakhs	No. of set-ups	1,040
Quality Control	3.52 lakhs	No. of inspection	1,800
Machinery	14.40 lakhs	No. of machine hours	48,000

The company has produced a batch of 5,200 components, its material cost was ₹2.60 lakhs and labour cost ₹4.90 lakhs. Usage activities of the said batch are as follows:

Material order - 52, Material movements - 36, Maintenance hours - 1,380, Set ups - 50, Quality Control Inspection - 56 and Machine hours - 3,600.

Calculate:

- (i) Cost driver rates that are used for tracing appropriate amount of over heads to the said batch.
- (ii) The cost of batch of component. [3 + 4=7]

Answer:

### Cost driver data

Particulars	Details	Rate of Cost Drivers
Materials procurements	$\frac{11,60,000}{2,200}$	₹527
Materials handling	$\frac{50,00,000}{1,360}$	₹368
Maintenance	$\frac{19,40,000}{16,800}$	₹115
Setup	$\frac{8,30,000}{1,040}$	₹798

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Quality Control	$\frac{3,52,000}{1,800}$	₹195
Machinery	$\frac{14,40,000}{48,000}$	₹30

### Calculation of Batch of 5,200 Components

Direct materials		2,60,000
Direct labour		4,90,000
Prime cost		7,50,000
Add: Overheads		
Material procurements (52 x ₹527)	27,404	
Material handling (36 x ₹368)	13,248	
Maintenance (1,380 x ₹115)	1,58,700	
Set up (50 x ₹798)	39,900	
Quality Control (56 x ₹195)	10,920	
Machinery (3600 x ₹30)	1,08,000	3,58,172
		11,08,172

- (c) XYZ Co. Ltd. has two divisions A and B. A sells half of its output on the open market and transfers the rest to Division B. Costs and revenue during 2013 are:

	A (₹)	B (₹)	Total (₹)
<b>Sales</b>	<b>18,000</b>	<b>50,000</b>	<b>68,000</b>
<b>Cost of production in the division</b>	<b>26,000</b>	<b>22,000</b>	<b>48,000</b>
<b>Profit during the period</b>			<b>20,000</b>

There are no opening and closing stocks.

You are required to find out the profit of each division and profit of the company using transfer prices:

- (i) At cost
- (ii) At cost plus 20%
- (iii) At cost plus 20% but there is over spending in Division A ₹4,000. [2+3+3=8]

Answer:

### Calculation of profit when Transfer price is at cost

Particulars	A	B	Company
Sales	18,000	50,000	68,000
<b>Less: Cost of production</b>	13,000	35,000 (22,000+13,000)	48,000
Profit	5,000	15,000	20,000

### Calculation of profit when Transfer price is at Cost Plus 20%.

Particulars	A	B	Company
Sales	33,600 [18,000 + (13,000 + 20% of 13,000)]	50,000	83,600
<b>Less: Cost of production</b>	26,000	37,600 [22,000+(13,000 + 20% of 13,000)]	63,600
Profit	7,600	12,400	20,000

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Calculation of profit when Transfer price is cost plus 20% and over spending in Division A by ₹4,000:

Particulars	A	B	Company
Sales	33,600 (18,000 +15,600)	50,000	83,600
<b>Less:</b> Cost of production	30,000 (26,000+4,000)	37,600 (22,000+15,600)	67,600
Profit	3,600	12,400	16,000

### Section-B

Answer any one question from this section.

#### Question.5

(a) Discuss is Compliance Report?

[3]

Answer:

Industries which are not covered under compulsory Cost Audit need to get compliance from the Cost Accountant. Such a compliance report shall certify compliance of all statutory requirements relating to maintenance of cost Record / Cost statements related to the industry. Such a compliance report should be branged by a cost Accountant (holding a certificate of parched or permanent employee of the company having valid membership / certificate of parched).

Companies engaged in activities or products to which the cost accounting records rules listed under Rule 3(a) to 3(h) apply will not be required to file a Compliance Report until these Rules are amended. However, if the concerned company is also engaged in other activities covered under the Companies (Cost Accounting Records) Rules 2011, in that case the company would be required to file a Compliance Report.

(b) What are the requirements for compliance report?

[7]

Answer:

Rule 5 of the 2011 Records Rules provides that every company to which these rules apply shall submit a compliance report, in respect of each of its financial year commencing on or after the 1<sup>st</sup> day of April, 2011, duly certified by a "cost accountant", along with the Annexure to the Central Government, in the prescribed form (i.e. Form B). "Form B" means the form of the compliance report and include Annexure to the compliance report. According to Rule 2(c) of the 2011 Records Rules, "cost accountant" means a cost accountant as defined in clause (b) of sub-section (1) of section 2 of the Cost Accountants Act, 2011 (i.e. a member of the **ICAI**) and who is either a permanent employee of the company or holds a valid certificate of practice under sub-section (1) of section 6 and who is deemed to be in practice under sub-section (2) of section 2 of that Act and includes a firm of cost accountants.

A question arises whether the term "a firm of cost accountants" above shall include a **Limited Liability Partnership (LLP) of cost** accountants? - This question arises as a firm is different from a LLP. The latter is a body corporate which a firm is not. While the Central Government has vide Circular No. 30A/2011, dated 26-5-2011 clarified that LLP will not be regarded as a "body corporate" for the "**limited purpose of section 226(3)(a)**" (disqualification of statutory auditors appointed under section 224 /disqualification of cost auditors appointed under section 233B). Thus, from the said circular it appears that while LLP of cost accountants can be appointed cost auditors under section 233B, LLP of

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cost accountants cannot be appointed as "cost accountant" for compliance reporting. MCA/ICWAI needs to clarify this.

**The compliance report does not (and indeed cannot supplant) the cost audit. It is in addition to the cost audit.** In fact, it will be required even in those cases where cost audit of the company is not ordered under section 233B of the Companies Act, 1956. The differences between "compliance report" and "cost audit" is explained subsequently.

**Authentication of compliance report by cost accountant who is permanent employee of the company.**

ICAI has clarified that a cost accountant working as permanent employee can authenticate the Compliance Report of the company where he is employed provided his membership dues are not in arrears. [FAQ No. 8 of ICWAI's FAQs on Companies (Cost Accounting Records) Rules, 2011]

**Authentication of compliance report by a cost accountant who is permanent employee of another company within the same group**

A Cost Accountant working as permanent employee can authenticate the Compliance Report of only the company where he is employed provided his membership dues are not in arrears He cannot authenticate Compliance Report of any other company even under the same group. [FAQ No. 8 of ICWAI's FAQs on Companies (Cost Accounting Records) Rules, 2011]

**(c) List the duties of cost Auditor?**

**[6]**

**Answer:**

The duties of cost auditor are also similar to those of the (financial) auditor of the company has under sub-Section(1) of the section 227 (Section 223B(4)). The duties of the cost auditor inter-alia include:

- (a)** To ensure that the proper books of accounts as required by cost accounting record rules have been kept by the company so far as it appears from the examination of those books and proper returns for the purpose of his audit have been received from branches not visited by him.
- (b)** To ensure that the cost audit report and the detailed cost statements are in the form prescribed by the Cost Audit Report Rules by the following sound professional practices i.e. the report should be based on verified data and observations may be framed after the company has been afforded an opportunity to comment on them.
- (c)** The underline assumptions and basis for allocation and absorption of indirect expenses are reasonable and are as per the established accounting principles.
- (d)** If the auditor is not satisfied in any of the afore said matters, he may give a qualified report along with the reasons for the same
- (e)** Sending the report to the Cost Audit Branch within 180 days from the end of the financial year with the copy to the Company.
- (f)** He is required to send his replies to any clarification, that may be sought by the Cost Audit Branch on his report. Sending such replies within 30 days from the date of receipt of communication calling for clarification.

**Question.6**

**(a) State the power of cost auditor?**

**[5]**

**Answer:**

**Powers of Cost Auditor**

Section 233B (4) of the Companies Act, 1956 gives the cost auditor same powers as the financial auditor has under Section 227(1). In addition, Rule 6 of the Cost Audit Report

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Rules also requires the company and every officer thereof, including the persons referred to in sub-Section (6) of Section 209 of the Act to make available to the cost auditor, within 135 days from the close of the financial year of the company, such cost accounting records, cost statements, other books and documents, Annexure and Proforma to the Report, duly completed as would be required for conducting the cost audit, and shall render necessary assistance to the Cost Auditor so as to enable him to complete the cost audit and submit his report within the time limit specified in rule 5. Section 233B(6) further provides that it shall be the duty of the company to give all facilities and assistance to the cost auditor so as to enable him to complete the audit and send the report within the prescribed time limit.

The powers of the cost auditor under sub-Section (1) of Section 227 are as under:

Right to access at all times to the books and accounts and vouchers of the company, whether kept at the head office of the company or elsewhere.

Entitled to require from the officers of the company such information and explanations as he may think necessary for the performance of his duties as an auditor.

- (b) How total number of companies for which a cost auditor can accept appointment is to be computed keeping in mind restrictions imposed under Section 224(1B) of the Companies Act 1956. [5]**

**Answer:**

The specified number of companies for the purpose of section 233B (2) read with section 224 (1B) of the Companies Act, 1956 for a given financial year would be the total of:

- a. Companies wherein he has been appointed as the cost auditor,
- b. Companies wherein he is proposed to be appointed for which he has given his consent.
- c. Companies in respect of which cost audit reports have not been submitted and have become overdue. [MCA Master Circular No. 2/2011 dated 11th November 2011]

A cost auditor would be deemed to have concluded his appointment as cost auditor and eligible to accept appointment of another company within the limits of Section 224 (1B) as soon as he renders his report to the Central Government in accordance with the Cost Audit Report Rules, as applicable, with a copy to the Company. His obligation to answer queries from the Ministry of Corporate Affairs arising out of review of cost audit reports would not debar him from accepting another appointment as cost auditor of a company provided the specified number of companies contemplated in section 224 (1B) is not exceeded.

- (c) Write the Period of holding of office as a Cost Auditor of a company [2]**

**Answer:**

A cost auditor shall be deemed to be holding office as cost auditor from the time he accepts the appointment and files Form 23D with the Central Government and shall be deemed to have concluded his appointment for the relevant financial year as soon as he renders a report to the Central Government in accordance with the Cost Audit

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Report Rules, as applicable, with a copy to the Company. [MCA Master Circular No. 2/2011 dated 11th November 2011]

- (d) **A company was covered under Chemical Industries Rules which listed about 44 types of chemicals under its coverage. The company was covered under cost audit also, which was being conducted for the chemicals listed in the schedule and other chemicals not listed were kept under the purview of cost audit. What would be the status of the cost audit coverage after introduction of Companies (Cost Accounting Records) Rules 2011?** [2]

**Answer:**

In the erstwhile Cost Accounting Records (Chemical Industries) Rules as amended, contained list of chemicals. With the introduction of Companies (Cost Accounting Records) Rules 2011, all the chemicals produced by a company would be covered in its entirety. If the company was under cost audit then all chemical products of the company would now be covered under cost audit.

- (e) **The maximum period prescribed for presenting Compliance Report and / or Cost Audit Report is 180 days from date of close of the financial year. If Financial Accounts of a Company is not ready before the stipulated time period, how cost audit report will be completed reconciled with the financial books of the company?** [2]

**Answer:**

Maintenance of cost accounting records is a continuous process. No time limit has been prescribed in the Rules for "submission" of records to cost auditor. The time limit of 180 days as prescribed in the Rules is for submission of Compliance report regarding maintenance of cost accounting records and cost audit report in case cost audit is also applicable to the company.

In case financial accounts are not ready or are yet to be adopted in the AGM, the same was clarified by the Cost Audit Branch earlier. In such cases the cost auditor can submit the report based on provisional accounts and submit a supplementary report of reconciliation in case there are materials differences in the final adopted accounts.

### SECTION C

**Answer any two questions from this section.**

**Question.7**

- (a) **Write short note on "Regression Analysis".** [5]

**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 :  $x$

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Dependent variable : y

### Multiple-Regression Model:

The equation in the case of multiple regression

$$Y = a + b_1x_1 + b_2x_2 + \dots + b_nx_n$$

Independent variables:  $x_1, x_2, \dots, x_n$

Dependent variable : y

### Limitations:

- (i) It is difficult to find out inter-dependence relationship between the variables.
- (ii) Sometimes it may be difficult to identify dependent and independent variable.
- (iii) Indicators are based on historical data. But the relationship cannot be established for the future.

- (b) 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)

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

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

= 2 (proved)

- (c) A Ltd. is operating in a perfectly competitive market. The price elasticity of demand and supply of the product estimated to be 3 and 2 respectively. The equilibrium price of the product is ₹100. If the government imposes a specific tax of ₹10 per unit, what will be the new equilibrium price? [2]

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**Answer:**

Distribution of tax burden between buyers and sellers is in the ratio of elasticity of demand.

Thus tax burden borne by the buyer = ₹10 × 1/5 = ₹4.

If the tax burden borne by buyer is ₹4, new equilibrium price will be 100 + 4 = ₹104

**Question.8**

**(a) Cost =  $400x - 10x^2 + \frac{1}{3}x^3$ , Calculate**

**(i) Output at which Marginal Cost is minimum**

**(ii) Output at which Average Cost is minimum**

**(iii) Output at which Marginal Cost = Average Cost.**

**[2+2+2=6]**

**Answer:**

**(i)** Marginal Cost =  $\frac{dc}{dx} = 400 - 20x + x^2$  (say, y)

In order that MC is minimum first derivate must be equal to zero and 2<sup>nd</sup> derivate must be positive.

$$\therefore \frac{dy}{dx} = 2x - 20 \Rightarrow 2x = 20$$

$$x = 10$$

$\frac{dy^2}{dx^2} = 2$ , which is positive. It is minimum at  $x = 10$ .

**(ii)** Average Cost =  $400 - 10x + \frac{1}{3}x^2$  (y say)

$$\frac{dy}{dx} = -10 + \frac{2}{3}x = 0$$

$$\Rightarrow x = 30/2 = 15$$

$$\frac{d^2y}{dx^2} = \frac{2}{3} > 0,$$

$\therefore$  Average Cost is minimum of output at  $x = 15$

**(iii)** Output at which Marginal Cost = Average Cost

$$-20x + 10x + x^2 - \frac{1}{3}x^2 = 0$$

$$-10x + \frac{2}{3}x^2 = 0$$

$$\frac{-30x + 2x^2}{3} = 0$$

$$2x^2 - 30x = 0$$

$$2x(x - 30) = 0$$

$$x - 30 = 0$$

$$\therefore x = 15$$

**(b) A manufacturer can sell 'x' items per month, at price  $P = 200 - 2x$ . Manufacturer's cost of production ₹ Y of 'x' items is given by  $Y = 2x + 2000$ . Find no. of items to be produced to yield maximum profit p.m. **[3]****

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**Answer:**

$$\text{Units} = x$$

$$\text{Price} = 200 - 2x$$

$$\text{Revenue (R)} = Px = 200x - 2x^2$$

$$\text{Cost (C)} = 2x + 2000$$

$$\text{Profit (z)} = 200x - 2x^2 - 2x - 2000$$

$$-2x^2 + 198x - 2000$$

$$\frac{dz}{dx} = -4x + 198 = 0$$

$$-4x = -198$$

$$x = 198/4 = 49.5$$

$$\frac{d^2z}{dx^2} = -4 \text{ which is Positive}$$

$$\frac{d^2z}{dx^2} = <0$$

Profit is maximum at  $x = 49.5$  units

**(c) What are the exceptions of Law of Demand?**

**[3]**

**Answer:**

The exceptions of Law of Demand are:

- (i) Giffen Paradox:** According to the law of demand when the price rises demand decreases and vice-versa. But, according to Sir Robert 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 goods does not decrease with the rise in the price as these goods are attached with prestige.
- (iii) Speculative Business:** The laws of demand do not operate in case of the speculative business. If people think the price of goods increase in the future, now they will buy more units of that commodity. This is against to the law of demand. This is another limitation to the law of demand.
- (iv) Trade Cycles:** The laws of demand do 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 may buy the goods even at high prices.

**Question.9**

**(a) Define Elasticity of Demand? Explain the different types of elasticity of demand? [2+4]**

**Answer:**

"The elasticity of demand in a market is great or small according to the amount demanded increases much or little for a given fall in the price and diminishes with much or little for a given rise in price". – Marshall. "Elasticity is the degree of change in demand as a result of change in price". – Samuelson.

The elasticity of demand explains the relationship between proportionate change in demand to a proportionate change in price.

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$$\text{Elasticity of demand} = \frac{\text{Proportionate change in Demand}}{\text{Proportionate change in Price}}$$

**Types of Elasticity of demand:** Elasticity of demand is of 3 types:

- (i) Price elasticity of demand
- (ii) Income elasticity of Demand.
- (iii) Cross elasticity of demand

**(i) Price Elasticity of demand:**

Price Elasticity of Demand ( $E_d$ ) explains the proportionate or percentage change in demand to a proportionate or percentage change in price.

$$E_d = \frac{\text{Proportionate change in Demand}}{\text{Proportionate change in Price}}$$

(or)

$$E_d = \frac{\text{Percentage change in Demand}}{\text{Percentage change in Price}}$$

$$E_d = \frac{\text{Change in Quantity Demanded}}{\text{Quantity demanded at original price}} \times \frac{\text{Original Price}}{\text{Change in price}}$$

$$E_d = \frac{\Delta x}{x} \div \frac{\Delta p}{p} = \frac{p}{x} \times \frac{\Delta x}{\Delta p}$$

**(ii) INCOME ELASTICITY OF DEMAND:**

The income elasticity of demand explains the proportionate change in income and proportionate change in demand. The rate of change in the demand due to the change in the income is called income elasticity of demand.

$$\text{Income elasticity of demand} = \frac{\text{Proportionate change in demand}}{\text{Proportionate change in income}}$$

**(iii) CROSS ELASTICITY OF DEMAND:**

The rate of change in the demand for one commodity due to the change in the price of its substitutes and complementary goods is called cross elasticity of demand.

$$\text{Cross Elasticity of Demand} = \frac{\text{Percentage change in the demand for commodity X}}{\text{Percentage change in the price of Y}}$$

If the percentage change in the demand for commodity X is more than the percentage change in the price of Y, then the cross elasticity of demand is greater than one ( $E_d > 1$ ). If the percentage change in the demand for commodity X is less than percentage change in the price of commodity Y, then the cross elasticity of demand is less than one ( $E_d < 1$ ). If the percentage change in the demand for commodity X is equal to percentage change in the price of commodity Y, then the cross elasticity of demand is equal to one ( $E_d = 1$ ).

**(b) Show the relationship between AR, MR and Elasticity?**

**[6]**

**Answer:**

Relationship between AR, MR and Elasticity  
AR, MR and Elasticity\*

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However, the true relationship between the AR, MR and elasticity

<p>* The mathematical relationship between AR, MR and elasticity can be worked out as follows. As know that R = PQ.</p> $MR = \frac{dR}{dQ}$ $MR = \frac{dR}{dQ} = \frac{d}{dQ} (PQ)$ $= P \frac{dR}{dQ} + Q \frac{dP}{dQ}$ $= p + Q \frac{dp}{dQ}$ $MR = P \left( 1 + \frac{Q}{D} \cdot \frac{dF}{dQ} \right)$ <p>Elasticity of demand <math>E = - \frac{P}{Q} \cdot \frac{dQ}{dP}</math></p> <p>Or <math>-\frac{1}{E} = - \frac{Q}{P} \cdot \frac{dP}{dQ}</math></p> <p>Therefore, (i) can be written as</p> $MR = P \left( 1 - \frac{1}{E} \right) \left[ \frac{Q}{P} \cdot \frac{dP}{dQ} = -\frac{1}{E} \right]$ <p>But <math>P = AR</math></p>	$MR = AR \left( 1 - \frac{1}{E} \right)$ $1 - \frac{1}{E} = \frac{MR}{AR}$ $-\frac{1}{E} = \frac{MR}{AR} - 1$ $\frac{1}{E} = 1 - \frac{MR}{AR}$ $\frac{1}{E} = \frac{AR - MR}{AR}$ $E = \frac{AR}{AR - MR}$
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$\therefore E = \frac{AR}{AR - MR}$  (Where E is elasticity, AR average revenue and MR marginal revenue.)

By solving, we have, EA – EM = A [Considering AR = A, MR = M]

$$EA - A = EM$$

$$A(E - 1) = EM$$

$$A = \frac{EM}{E - 1}$$

$$\therefore A = M \frac{E}{E - 1}$$

Similarly, marginal revenue can be known

By solving  $E(A - M) = A$

$$EA - EM = A$$

$$EA - A = A$$

$$EA - A = EM$$

or  $EM = EA - A$

$$\therefore M = \frac{EA - A}{E}$$

$$M = \frac{A(E - 1)}{E}$$

$$\therefore M = A \frac{(E-1)}{E}$$