## Paper 10 - Cost & Management Accountancy

## (Section A)

1. **Answers all the Question:**

   **(i) The standard set of material consumption was 100kg. @ ₹2.25 per kg.**

**In a cost period:**
**Opening stock was 100kg.@ ₹2.25 per kg.**
**Purchase made 500kg. @₹2.15 per kg.**
**Consumption 110 kg.**
**Calculate usage variance and price variance.** **(2+2)**

**Answer:**

**(a) Computation of Material usage variance**

Material usage variance= SQSP-AQSP
= SP (SQ-AQ)
=2.25(100-110)
22.50 (A)

**(b)** Computation of Price Variance:
Material Price Variance= AQSP-AQAP
= (110x2.25)-(110x2.15)
= 11(F)

**(ii) What is Inter Firm Comparison?** **(2)**

**Answer:** Inter Firm Comparison, as the name indicates, is a technique by which a Company evaluates its performance with those of other firms in the same industry. Uniform Cost accounting is a must for such meaningful comparison. To facilitate such comparison and evaluation, generally a central organization is formed to collect the necessary data periodically in a standard format from all member industries. To safeguard the confidentiality of the individual firm's performance details, the data are collected as a ratio or percentage by the central organization in the industry. Information collected may relate to costs, capacity utilization, raw material usage, labour productivity, ROI etc.

**(iii) If Sales are ₹ 2,00,000, fixed cost ₹30,000, and the PV ratio is 40%, the profit will be how much.** **(2)**

**Answer:**

Sales= $\frac{\text{Profit} + \text{Fixed Cost}}{\text{P.V.R}}$

2,00,000 = $\frac{X + 30{,}000}{40\%}$

80,000=X + 30,000
Therefore X=50,000
Profit=₹50,000

**(iv) A factory has a key resource (bottleneck) of Facility A which is available for 31,300 minutes per week. Budgeted factory costs and data on two products, A and B, are shown below:**

| Product | Selling price/Units | Material cost/Unit | Time in Facility A |
|---|---|---|---|
| A | ₹40 | ₹20.00 | 5 minutes |
| B | ₹40 | ₹17.50 | 10 minutes |

**Calculate:**
**Return per factory minute for both products.** **(2)**

**Answer:**

**(a)** Return per bottleneck minute for the product A= $\frac{\text{Selling Price} - \text{Material Cost}}{\text{Minutes in bottleneck}}$

= (40-20)/5
=₹4

**(b)** Return per bottleneck minute for the product Y= $\frac{\text{Selling price} - \text{Material Cost}}{\text{Minutes in bottleneck}}$

= (40-17.5)/10
=₹2.25

**(v) A company has produced all accounting records within the stipulated time for your audit. It however is unable to produce audited financial accounts, as financial audit is not yet completed. As a cost Auditor, how would you deal with?** **[2]**

**Answer:**

Cost Audit Report is finalized with provisional figures a forwarding letter should be attached by the Cost Auditor to the aforesaid report stating clearly that the company has been unable to produce audited financial accounts since the financial audit is not yet complete. As such the report submitted is based on unaudited/provisional figures only as has been given to him by the company. Subsequently a supplementary report should be submitted by the Cost Auditor to the Government as soon as the audited financial accounts are made available.

**(vi) A company has not maintained cost accounting records though having the obligation under section 209(1)(d) of the Companies Act. 1956. The management is of the opinion that necessary steps could be taken after the cost audit order is received from the Government. Are the directors of the company absolved of the obligation to maintain cost accounting records?**

**[2]**

**Answer:**

The obligation to maintain cost accounting records as per the rules provided u/s 209(1)d) is a continuing one, independent of whether cost audit is ordered or not. Further the Financial auditor also has an obligation to certify under CARO that such cost record have been made and maintained. As such the directors of the company will not be absolved of the obligation under sec. 209(1)(d).

**(vii) What are the exceptions of Laws of Demand?** **[2]**

**Answer:**

The exceptions of Law of Demand:

1. Giffen Paradox: According to the Laws of demand when the price raises 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.
2. Prestigious goods: The laws 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.
3. Speculative Business: The laws of demand do 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 to the laws of demand. This is another limitation to the laws of demand.
4. 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.
5. Ignorance of the consumers: The laws of demand are 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.

**(viii) What are the types of elasticity of Demand? [2]**

**Answer:**

Elasticity of demand is of 3 types:

1. Price elasticity of demand
2. Income elasticity of Demand.
3. Cross elasticity of demand

**(ix) Explain the role of Management's accountant in product pricing. [2]**

**Answer:**

Management accountant plays an important role in formulation of pricing strategies in different circumstances. The top management is very much concerned on pricing of product or services in conformity with changing economic structures and situation.

Necessary data are normally being supplied by the different level of management- which directly or indirectly regulates the pricing mechanism.

1. Management accountant ensures and highlights the important factors which influence the pricing decision.
2. Before being finalized, product cost and relevant data are analyzed by a management accountant for ensuring profitability aspect also.
3. Pricing decision are also related to National and International economic and monetary policies of Government, which are also under the purview of a management accountant, for a strategic adjustment.

**Section A-Answer any two questions from this section**

**2.**

**(a) A Company manufacture its sole product by passing the raw material through three distinct process in its factory. During the month of April 2013, the company purchased 96,000 kg of raw material at ₹5 per kg & introduced the same in process 1. Further particulars of manufacture for the month are given below:-**

| | Process I | Process II | Process III |
|---|---|---|---|
| Material consumed | ₹33,472 | ₹27,483 | ₹47,166 |
| Direct labour | 80,000 | 72,000 | 56,000 |
| Overhead | 1,20,000 | 1,08,000 | 84,000 |
| Normal Waste in process as % of input | 3% | 1% | 1% |
| Sale value of waste (₹/kg) | 2 | 3 | 5 |
| Actual output during the month (kg) | 93,000 | 92,200 | 91,500 |

**Prepare the three process accounts relating to abnormal; loss/gain, if any. (15)**

**Answer:**

**-----Company**

**Three Process Accounts are given below:**

**Process-1 Account**

| | Quantity (kg.) | Rate (₹) | Amount (₹) | | Quantity (kg.) | Rate (₹) | Amount (₹) |
|---|---|---|---|---|---|---|---|
| To Input of R.M. | 96,000 | 5.00 | 4,80,000 | By Process-II A/C (Transferred to) | 93,000 | 7.60 | 7,06,800 |
| To Other materials | | | 33,472 | By Normal Waste A/C (3% of 96,000) | 2,880 | 2.00 | 5,760 |
| To Direct labour | | | 80,000 | By Abnormal Loss A/C | 120 | 7.60 | 912 |
| To Overheads | | | 1,20,000 | | | | |
| | 96,000 | | 7,13,472 | | 96,000 | | 7,13,472 |

**Process-II Account**

| | Quantity (kg.) | Rate (₹) | Amount (₹) | | Quantity (kg.) | Rate (₹) | Amount (₹) |
|---|---|---|---|---|---|---|---|
| To Process-I A/C (Transferred from) | 93,000 | 7.60 | 7,06,800 | By Process-III A/C (Transferred to) | 92,200 | 9.90 | 9,12,780 |
| To Materials | | | 27,483 | By Normal Waste A/C (1% of 93,000) | 930 | 3.00 | 2,790 |
| To Direct labour | | | 72,000 | | | | |
| To Overheads | | | 1,08,000 | | | | |
| To Abnormal gain | 130 | 9.90 | 1,287 | | | | |
| | 93,130 | | 9,15,570 | | 93,130 | | 9,15,570 |

**Process-III Account**

| | Quantity (kg.) | Rate (₹) | Amount (₹) | | Quantity (kg.) | Rate (₹) | Amount (₹) |
|---|---|---|---|---|---|---|---|
| To Process-II A/C (Transferred from) | 92,200 | 9.90 | 9,12,780 | By Finished Goods Stock | 91,500 | 12.00 | 10,98,000 |
| To Materials | | | 47,166 | By Normal waste (1% of 92,200) | 922 | 5.00 | 4,610 |
| To Direct labour | | | 56,000 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| To Overheads | | | 84,000 | | | | |
| To Abnormal gain | 222 | 12.00 | 2,664 | | | | |
| | 92,422 | | 11,02,610 | | 92,422 | | 11,02,610 |

Accounts relating to Abnormal Loss/Gains are as under:-

**Abnormal Loss Account**

| | Quantity (kg.) | Amount (₹) | | Quantity (kg.) | Amount (₹) |
|---|---|---|---|---|---|
| To Process-I Account | 120 | 912 | By Cash @ ₹2 (normal waste) | 120 | 240 |
| | | | By Profit & Loss Account | ------ | 672 |
| | 120 | 912 | | 120 | 912 |

**Abnormal Gain Account**

| | Quantity (kg.) | Amount (₹) | | Quantity (kg.) | Amount (₹) |
|---|---|---|---|---|---|
| To Process-II A/C (normal waste) @₹3 | 130 | 390 | By Process-II A/c | 120 | 1,287 |
| To Process-III A/c (Normal waste) | 222 | 1,110 | By Process-III A/c | 222 | 2,664 |
| To Profit & Loss A/C | ----- | 2,451 | | | |
| | 352 | 3,951 | | 352 | 3,951 |

**Working Notes:-**

Valuations of output, abnormal loss/Gain are worked out below:

$$= \frac{\text{Total Cost of Input - Sale Value of Normal Waste}}{\text{(Input quantity - Qty of Normal Waste)}}$$

$$\text{Process-I}: \frac{7{,}13{,}472 - 5{,}760}{96{,}000 - 2{,}880}$$

$$= \frac{7{,}07{,}712}{93{,}120}$$

=₹7.60

$$\text{Process-II}: \frac{9{,}14{,}283 - 2{,}790}{(93{,}000 - 930)}$$

$$= \frac{9{,}11{,}493}{92{,}070}$$

=₹9.90

$$\text{Process-III}: \frac{10{,}99{,}946 - 4{,}610}{92{,}200 - 922}$$

$$= \frac{10{,}95{,}336}{91{,}278}$$

=₹12.00

**(b) What is meant by 'Relevant Cost,? Explain with the help of illustration. (3+2)**

**Answer:** For the purpose of decision making, Costs are classified into two groups, namely relevant Costs and irrelevant Costs. Relevant Costs are taken into consideration while making a particular decision.

Relevant Costs are those which differ from one set of circumstances to another depending upon the nature of decision to be made. This concept is a valuable tool for decision making in a variety of situations. It should be used, however, with care and discretion. Thus the cost of petrol will be relevant if the decision to be made between driving up to a destination or using another mode of transport such as train.

If a special price export order is to be evaluated, relevant costs will be additional variable costs, any overtime or other export related expenses. The relevant benefits will be export subsidies and incentives.

**3.**

**(a) The following figures are available. Find out the missing figures, given appropriate formulae –**

| **Particulars** | **₹** | **₹** |
|---|---|---|
| **Budgeted Profit** | | **15,000** |
| **Less: Adverse variance: Contribution Price variance** | **10,600** | |
| **Direct Material variance** | **1,000** | |
| **Fixed Overhead variance** | **600** | **12,200** |
| | | **2,800** |
| **Add: Favourable Variance: Contribution Quantity Variance** | **1,800** | |
| **Direct Wages Variance** | **600** | |
| **Variable Overhead Variance** | **1,800** | **4,200** |
| **Actual Profit** | | **7,000** |

**There is no inventory. Also, production units = sales units for both actual and budget.**

**Other information:**

| | | | |
|---|---|---|---|
| **Standard selling Price** | **₹ 18 per unit** | **Actual Labour Hours at Actual rate** | **₹ 63,000** |
| **Standard Variable Cost** | **₹ 15 per unit** | **Actual Labour Hours at Standard rate** | **₹61,950** |
| **Standard Contribution** | **₹3 per unit** | **Variable Overhead Standard rate** | **₹2** |
| **Actual selling Price** | **₹ 17 per unit** | **Standard Hours of Production** | **4 per unit** |
| **Budgeted sales** | **10,000 units** | **Variable Overhead at Standard rate** | **₹ 84,800** |
| **Std Material Cost p.u** | **Re.1(5 kg. at 20 paise/kg)** | **Variable Overhead Expenditure Variance** | **400 (A)** |
| **Material Usage variance** | **400(Adv0** | **Budgeted Fixed overhead** | **₹ 15,000** |

**Find out the following:**

| | |
|---|---|
| **(a) Actual sales Units** | **(e) Actual Variable Overhead in rupees** |
| **(b) Actual sales Rupees** | **(f) Variable Overhead Efficiency Variance** |
| **(c) Actual Quantity of Raw Materials used** | **(g) Actual Fixed Overheads** |
| **(d) Labour Efficiency variance** | **(h) Operating Profit Variance** |

**(2x8=16)**

**Solution:**

1. **Sales Variances**

| **BQ x BP (1)** | **AQ x AP (2)** | **AQ x BP (3)** | **Sales Variances Total (1)-(2)=200F** | |
|---|---|---|---|---|
| 10,000x18=1,80,000 | 10,600x17=1,80,200 Qtty from **WN (a)** | 10,600x18 =1,90,800 | Price(3)-(2) =10,600A (given) | Volume(1)-(3) =10,800F |

2. **Material Variances**

| **SQ x SP** | **AQ x AP** | **AQ x SP** | **Material Variances** |
|---|---|---|---|

| (1) | (2) | (3) | Cost (1)-(2)=1,000A (given) | |
|---|---|---|---|---|
| (10,600x5)x0.20<br>=10,600 | 55,000x0.21<br>=11,600<br>**[WN (d)]** | 55,000X0.20<br>=11,000<br>**[WN (C)]** | Price (3)-(2)<br>=600A (Bal. figure) | Usage(1)-(3)<br>=400A (given) |

**3. Labour Variances**

| SH x SR<br>(1) | AH x AR<br>(2) | AH x SR | Labour Variances<br>Cost(1)-(2)=600F (given) | |
|---|---|---|---|---|
| (10,600x4)x1.50<br>=63,600<br>**[WN (e)]** | 41,300 x1.53<br>=63,000 (given) | 41,300X 1.50<br>=61,950 (given) | Rate(3)-(2)<br>=1,050A | Efficiency(1)-(3)<br>=1,650F |

**4. VOH Variances**

| SH x SR | AVOH | AH x SR | VOH Variances<br>Cost(1)-(2)= 1,800F (given) | |
|---|---|---|---|---|
| (10,600x4)x2<br>=84,800 (given) | **[WN (f) ]**<br>83,000 | 41,300x2<br>=82,600<br>[Hrs from LCV ] | Exp. (3)-(2)<br>=400A | Efficiency(1)-(3)<br>=2,200F |

**5. FOH Variances**

| AO x SR<br>(1) | AFOH<br>(2) | BFOH<br>(3) | FOH Variances<br>Cost (1)-(2) =? (NA under Merg Costing) | |
|---|---|---|---|---|
| 10,600 ×?<br>=? | **[ WN (g) ]**<br>15,600 | Given<br>15,000 | Exp. (3)-(2)<br>=600A | Efficiency(1)-(3)<br>=NA |

**Working Notes:**

| | | | | |
|---|---|---|---|---|
| **a.** | **Contribution Quantity Variance** | =(BQ-AQ)x Std. Contribution per unit | | =1,800F |
| | | =(10,000-AQ)x₹3 | = -1,800. | On solving, AQ=10,600 units |
| **b.** | Since Contribution Quantity Variance is given in the reconciliation Statement as per the question, Marginal Costing system has been used in the reconciliation. Accordingly, FOH Variance as per the Reconciliation statement constitutes only FOH Expenditure Variance. | | | |
| **c.** | **Material usage variance**=(1)-(3) | | =400A | |
| | 10,600-(3) = -400. | Hence,(3)=11,000 On balancing, | | AQ of Raw Material (AQ) = 55,000 kg. |
| **d.** | **Material Cost Variance** (1)-(2) | | | =1,000A |
| | 10,600-(2) = -1,000. | Hence, (2)=11,600, on balancing | | AP of Raw Material (AP) = 0.21 per kg. |
| **e.** | **Labour Cost Variance**=(1)-(2) | | =600A | |
| | (1)-63,000= -600. Hence, (1)= 63,600. | | On balancing, Std Rate ph of Labour (SR)= ₹1.50 ph | |
| **F.** | **VOH Cost Variance** =(1)-(2) | | =1,800A | |
| | 84,800-(2) = -1,800. | Hence, (2) = 83,000. | Hence, AVOH= ₹83,000 | |
| **g.** | **FOH Expenditure Variance** | =(3)-(2)=600A | So, 15,000-(2) = -600. | Hence, (2) = 15,600. |

**Answer:**

| | | |
|---|---|---|
| **a.** | Actual Sales Units | 10,600 units |

| | | |
|---|---|---|
| **b.** | Actual Sales Rupees | ₹1,80,200 |
| **c.** | Actual Quantity of RM used | 55,00 kg |
| **d.** | Labour Efficiency Variance | ₹1,650 F |
| **e.** | Actual Variable Overhead in rupees | ₹83,000 |
| **f.** | VOH Efficiency Variance | ₹2,200F |
| **g.** | Actual Fixed Overheads | ₹15,600 |
| **h.** | Operating profit Variance | ₹8,000A |

**(b) Write Short note on Uniform Costing. (4)**

**Answer:**
**Uniform Costing:-**Uniform Costing is the use by several undertaking of the same costing principles and or practices. The goal is set with uniformity of principles and similarly of methods with the understanding that in particular undertaking there may exist conditions which require variations in some respects from absolute uniformity.
Features of uniform costing are as follows:

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

There may be some operational problems in this system. The main point is the mutual understanding and belief if that is built in good sense it certainly brings al benefits to the concerned parties.

**4.**
**(a) Write short note on Cost Plus Contract. (5)**

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

The advantage to the contractor in such contract is that he is protected from fluctuations in prices of materials, labour and services and he is assured of his profit as per the terms of the agreement. Moreover he need not to go through tender formalities and he can even take up works which cannot be detailed in advance. Further as the customer has the right of conducting cost audit, he cannot be exploited by the contractor and the customer are both benefited by this agreement.

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

**(b) A Company produces three products X, Y and Z, details of which are shown below:**

| Particulars | X | Y | Z |
|---|---|---|---|
| **Selling Price per unit (₹)** | **1,200** | **1,100** | **1,300** |
| **Direct material cost per unit (₹)** | **600** | **700** | **850** |
| **Variable overhead (₹)** | **300** | **200** | **150** |
| **Maximum demand (₹)** | **3,0,000** | **25,000** | **40,000** |
| **Time required on the bottleneck resource (hours per unit)** | **50** | **40** | **30** |

**There are 32, 00,000 bottleneck hours available each month.**
**Required:**
**Calculate the optimum product mix based on the throughput concept. (7)**

**Answer:**

| Particulars | X | Y | Z |
|---|---|---|---|
| Selling price per unit (₹) | 1,200 | 1,100 | 1,300 |
| Direct material cost per unit (₹) | 600 | 700 | 850 |
| Throughput per unit (₹) | 600 | 400 | 450 |
| Time required on the bottleneck resource (hours per unit) | 50 | 40 | 30 |
| Return per factory hour (₹) | 12 | 10 | 15 |
| Ranking | 2 | 3 | 1 |
| Total available hours | =32,00,000 | | |

(-) Hours used for Z (40,000 x30) = 12,00,000
(-) Hours used for X (30,000 x 50) = 15,00,000
Balance hours available for Y = 5,00,000
No. of units that can be made in balance hours=5,00,000/40= 12,500 units.

**Statement showing optimum mix:**

| | X | Y | Z |
|---|---|---|---|
| No. of units | 30,000 | 12,500 | 40,000 |

**(c) A Multinational Company runs a public Medical Health Centre. For this purpose, it has hired a building at a rent of ₹10,000 per month with5% of total taking. The Health Centre has 3 types of wards for its patients namely- General ward, Cottage ward, and Deluxe ward. State the rent to be charged to each bed-day for different type of ward on the basis of the following information.**

**(i) The number of beds of each type is general ward 100, Cottage ward 50, Delux ward 30.**
**(ii) The rent of cottage ward bed is to be fixed at2.5 times of the general ward bed and that of Deluxe ward bed as twice of the Cottage ward bed.**
**(iii) The Occupancy of each type of ward is as follows-**
**General ward 100%, Cottage ward 80% and Deluxe ward 60%. But, in General ward, there were occasions when beds are full, extra beds were hired at charges of ₹20 per bed. The total hire charges for the extra beds incurred for the whole year amount to ₹12,000.**

**(iv) The Health Centre engaged a Heart Specialist from outside and on an average fees paid to him was ₹15,000 per trip. He makes three trips in the whole year.**

**(v) The other expenses for the year were as under-**

| | |
|---|---|
| **Salary of Supervisors, Nurses, Ward Boys** | **4,25,000** |
| **Repairs and maintenance** | **90,000** |
| **Salary of Doctors** | **13,50,000** |
| **Food supplied to patients** | **40,000** |
| **Laundry charges for their bed linens** | **80,000** |
| **Medicines supplied** | **74,000** |
| **Cost of Oxygen, X-ray etc. other than directly borne for treatment of patients** | **49,500** |
| **General Administration Charges** | **63,000** |

**(vi) Provide profit at 20% on total taking.**

**(vii)The Health Centre imposes 8% Service Tax on rent received.**

**(viii) 360 days may be taken in a year. (8)**

**Solution:**

**(i) Statement of operating cost per annum**

| **Particulars** | **₹** |
|---|---|
| Rent (Fixed Element) at ₹10,000 for 12 months | 1,20,000 |
| Hire Charges of Additional beds | 12,000 |
| Fees paid to Heart Specialist (₹15,000 x 3 trips) | 45,000 |
| Salary of Supervisors, Nurses, Ward boys | 4,25,000 |
| Repair and Maintenance | 90,000 |
| Salary of Doctors | 13,50,000 |
| Food Supplied to patients | 40,000 |
| Laundry charges for their bed linens | 80,500 |
| Medicine supplied | 74,000 |
| Cost of Oxygen, X-ray etc. other than directly borne for treatment of patients | 49,500 |
| General Administration charges | 63,000 |
| **Total Cost as above** | **23,49,000** |

**(ii) Computation of Desired Rent Collection**

| **Particulars** | **%** | **₹** |
|---|---|---|
| Gross rent collections (including service tax of 8%) | 108% | 33,82,560 |
| **Less:** Service tax at 8% rent collections | 8% | 2,50,560 |
| Rent Collections (taken as base=100%) | 100% | 23,49,000÷75%=31,32,000 |
| **Less:** Desired Profit Margin (on Revenue excluding Service Tax) | 20% | 6,26,400 |
| Balance being total operating costs | 80% | 25,05,600 |
| **Less:** Variable rent share (on Revenue Excluding Service tax) | 5% | 1,56,600 |
| Net balance Operating Costs (amount as per WN 1) | 75% | (as per WN 1)=23,49,000 |

**Note:** Other figures in the amount column are derived by pro-rata calculations.

**(iii) Computation of rent per Bed-Day**

| **Ward** | **General** | **Cottage** | **Deluxe** | **Total** |
|---|---|---|---|---|
| **a.** Number of beds | 100 | 50 | 30 | |
| **b.** Occupancy | 100% | 80% | 60% | |
| **c.** Number of days in a year | 360 | 360 | 360 | |
| **d.** Effective bed-days p.a (ax b x c) | 36,600 | 14,400 | 6,480 | 57,480 |

| | | | | |
|---|---|---|---|---|
| **e.** Rent per bed-days ratio | 1 time | 2.5 times | 5 times | |
| **f.** Total Bed Days for Rent purposes(d x e) | 36,600 | 36,000 | 32,400 | 1,05,000 |
| **g.** Rent colln apportioned in ratio of (f) | 10,91,726 | 10,73,828 | 9,66,446 | 31,32,000 |
| **h.** Rent per bed-day (g÷ d) (excluding ST 8%) | ₹29.83 | ₹74.57 | ₹149.14 | |

**Note:** In General Ward, Total Bed Days=100x 100%x 360=36,000 days. However, additional bed charges= ₹12,000 at ₹20 per bed (given). Hence extra bed-days=₹12,000÷₹20=600. This has also been included in the column above, in Row d.

# Section B

**5. (a) The following figures are extracted from the Financial Accounts of Pradhan Ltd. For the year ended 31.3.2013**

| | ₹ | ₹ |
|---|---|---|
| **Sales (20,000 units)** | | **50,00,000** |
| **Materials** | | **20,00,000** |
| **Wages** | | **10,00,000** |
| **Factory Overheads** | | **9,00,000** |
| **Administrative Overheads** | | **5,20,000** |
| **Selling and Distribution Overheads Finished Goods (1,230 units)** | | **3,60,000** |
| **Work-in-progress:** | | **3,00,000** |
| **Materials** | **60,000** | |
| **Labour** | **40,000** | |
| **Factory overheads** | **40,000** | **1,40,000** |
| **Goodwill written off** | | **4,00,000** |
| **Interest paid on capital** | | **40,000** |

**In the costing records, Factory overheads is charged at 100% of wages, Administration overhead 10% of factory cost and selling and distribution overhead at the rate of ₹20 per unit sold. Prepare a statement reconciling the profit as per cost records with the profit as per Financial Records. [8]**

**Answer:**

Pradhan Ltd.

Profit & Loss Account for the year ended 31st March, 2013

| | | | |
|---|---|---|---|
| To Opening Stock | Nil | By sales (20,000 units) | 50, 00,000 |
| To materials | 20, 00000 | By Closing stock (1,230 units) | 3, 00,000 |
| To wages | 10,00,000 | By Work-in-progress | 1,40,000 |
| To factory overheads | 9,00,000 | | |
| To administrative overheads | 5,20,000 | | |
| To selling & Dist. Overheads | 3,60,000 | | |
| To Goodwill written off | 4,00,000 | | |
| To interest on capital | 40,000 | | |
| To Net profit | 2,20,000 | | |
| | 54,40,000 | | 54,40,000 |

Costing Profit & Loss statement for the year ended 31st March, 2013 ₹

| | |
|---|---|
| Materials | 20,00,000 |
| Wages | 10,00,000 |
| Prime Cost | 30,00,000 |
| Add: Factory overhead @ 100% of wages | 10,00,000 |
| | 40,00,000 |
| Less: Closing work-in-progress | 1,40,000 |
| Factory cost | 38,60,000 |
| Administrative overheads @ 10% of factory cost | 3,86,000 |
| (20,000 + 1,230) units | 42,46,000 |
| Less: Closing stock of finished goods 1,230 units (see notes) | 2,46,000 |
| Cost of Production (20,000 units) | 40,00,000 |
| Selling & Distribution overhead @ ₹20 per unit | 4,00,000 |
| Cost of Sales (20,000 units) | 44,00,000 |
| Sales revenue (20,000 units) | 50,00,000 |
| Profit | 6, 00,000 |

Note: Cost of 21,230 units is ₹42, 46,000. Therefore, the cost of one unit is ₹200. Hence the cost of 1,230 units is ₹2, 46,000.

Alternatively: Administrative overheads could be excluded from the cost of production.

Reconciliation statement of Pradhan Ltd.

| | ₹ | ₹ |
|---|---|---|
| Profit as per Cost Records | | 6, 00,000 |
| Add: Factory overheads over-absorbed | 1,00,000 | |
| Selling & Distribution overheads over-absorbed | 40,000 | |
| Difference in the valuation of closing stock of finished goods (₹3,00,000 - ₹2,46,000) | 54,000 | 1, 94,000 |
| | | 7, 94,000 |
| Less: Administrative overhead under absorbed | 1,34,000 | |
| Goodwill written off relates to Financial Accounts | 4,00,000 | |
| Interest on capital | 40,000 | 5, 74,000 |
| Profit as per financial accounts | | 2, 20,000 |

**(b) Explain the rights and power, and duties of a Cost Auditor. [8]**

**Answer:**

According to Section 233B (4) of the Companies Act, 1956, the cost auditor' shall have the same powers and duties in relation to an audit conducted by his under this section as an auditor of a company has under Section 227(1) and such auditor shall make his report to the Central Government in such form and within such item as may be prescribe and shall also at the same time forward a copy of the report to the company'. Thus, the cost auditor has the same rights and powers as that of a financial auditor.

The rights and powers of a cost auditor may be summarized as follows:

- A right of access at all times to the books of accounts and vouchers of the company, whether kept at the head office of the company or elsewhere.
- A right to have technical and legal advice whenever necessary in connection with his work of cost audit.
- A right to receive remuneration from the company for his function as a cost auditor.
- A right to sign on the cost audit report and a right to send his report to the Central Government as well as to the company
- A right to require and receive from the officers of the company such information and explanations as he may think necessary for the successful performance of his duties as a cost auditor of a company.
- A right to receive such cost accounting records, cost statements and other books and papers as would be necessary for cost audit within 90 days of the financial year of the company.
- A right to seek and enjoy assistance and facilities from the company so that he can successfully complete his audit.
- A right to visit branch offices and factories of a company and to receive proper returns there from as may be necessary to conduct cost audit.
- A right to receive notice and to attend the general meeting of the company.

<u>Duties of cost auditor</u>

The provisions of the Companies Act, the Cost Audit (Report) Rules, the Cost and Works Accountants Act and Regulations, and the different laws that are applicable on a particular company or companies govern the duties of a Cost Auditor. The duties may be described as follows:

- Auditor should submit his Cost Audit Report to the Central Government within one hundred and eighty days from the end of the company's financial year to which such report relates, and a copy of the said report to the company.
- He should also qualify his report to the extent it differs, where he is not satisfied with any of the provisions stated above.
- He should owe his duty of care primarily to the company act honestly and sincerely.
- He should assist the Government in the latter's investigation process being launched for the purpose of examining the affairs of the company.
- He should understand and appraise the company's policies and procedures and systems adopted for the purpose of controlling wastages and inefficiencies.
- He should see and ensure what other exceptional duties are case upon him by the Articles of the company
- He should give necessary advice to the company about the irregularities in the maintenance and recording of cost accounts books and statements.

- He should keep records of various errors or omissions and commissions done by the client staff.

- He should, if he considers if necessary after submission of his report, submit a supplementary report, to the Central Government before the date fixed for holding the annual general meeting of the company, limited to the extent of reconciliation of the cost statements with the company's financial accounts

- He has a continuing duty to maintain his professional knowledge and skill at a level conducive to act as a cost auditor competently.

- He should clearly state, in his report, that :
  - He has obtained all the information and explanations relating to the cost accounts which to the best of his knowledge and belief were necessary for the purposes of the cost audit.
  - In his opinion the company's cost accounting records have been properly kept so as to give a true and fair view of the cost of production, processing, manufacturing or mining activities, and marketing of the product.
  - The books and records kept by the company give the information in the manner required by the Companies Act.
  - Proper cost accounting records as required under the relevant Cost Accounting (Records) Rules have been kept by the company.
  - Proper returns adequate for the purpose of his cost audit have been received from the branches not visited by him.

**(c) (i) 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? [4]**

**Answer:**

A cost auditor cannot render any services to the company whether acting individually, or through the same firm or through other group 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. [MCA General Circular No. 68/2011 dated 30th November 2011]

**(ii) 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? [4]**

**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.

# Section C

**6. (a) (i) What are the factors which influences the pricing policy of a product? [8]**

**Answer:**

Factors influencing Price of a product:

Generally, marketers consider the following factors in setting price:

I. Target customers: Price of product is depend on the capacity of buyers to buy at various prices, in other words, influence of price elasticity of demand will be examined.

II. Cost of the product: Pricing is primarily based on the, how much it costs to produce and market the product, i.e., both production and distribution cost.

III. Competition: Severe competition may indicate a lower price than when there is monopoly or little competition.

IV. The law: Government authorities place numerous restrictions on pricing activities.

V. Social responsibility: Pricing affects many parties, including employees, shareholders and the public at large. These should be considered in pricing.

VI. Market position of the firm: The position of the market may also influence the pricing decision of the firm. It is only why the different producers of identical products sell their products at different prices.

VII. Distribution channel policy: The prices of products will also depend up the policy regarding distribution channel The longer the channel, the higher would be the distribution costs and consequently higher the prices.

VIII. Price elasticity of Demand: Price elasticity refers to consequential change in demand due to change in price of the commodity. It is the relative responsiveness to the changes in price. As there an inverse relationship between price and demand for product, the demand will increase with fall in price.

IX. Economic environment: In recession, prices are reduced to a sizeable extend to maintain the level of turnover. On the other hand, prices are charged higher in boom period to cover the increasing cost of production and distribution.

**(ii) What do you understand by Skimming Pricing Policy of a product? (4)**

**Answer:**

Skimming Price Policy:

When the product is new but with a high degree of consumer acceptability, the firm may decide to charge a high mark up and, therefore, charge a high price. The system of charging high prices for new products is known as price skimming for the object is to "skim the cream" from the market. There are many reasons for adopting a high mark-up and, therefore, high initial price:

I. 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, novelty, commands a better price. Above all, in the initial stage, there is hence cross elasticity of demand is low.

II. If life of the product promises to be a short one, the management may fix a high price so that it can get as much profit as possible and, in as short a period as possible.

III. Such an initially high price is also suitable if the firm can divide the market into different segments based on different elasticity's. The firm can introduce a cheaper model in the market with lower elasticity.

IV. High initial price may also be needed in those cases where there is heavy investment of capital and when the costs of introducing a new product are high. The initial price of a transistor radio was ₹ 500 or more (now ₹ 50 or even less); electronic calculators used to cost ₹ 1,000 or more, they are now available for ₹ 100 or so.

**(b) A firm assumes a cost function $c(x) = x\left(\frac{x^2}{10} + 200\right)$, x is a monthly output in thousands of units. Its revenue function is given by $R(x) = \left(\frac{2,200 - 3x}{2}\right)x$ Find i) If the firm decides to produce 10,000 units per month, the firms cost and Marginal cost. ii) If the firm decides to produce Marginal cost of 320, the level of output per month, and cost of the firm. iii) The marginal revenue function. iv) If a decision is taken to produce 10,000 units each month, the total revenue and marginal revenue of the firm. v) If the firm produces with a marginal revenue of 1040, the firm's monthly output and monthly revenue. vi) The firm's profit function and marginal profit function. vii) The output required per month to make the marginal profit =0, and find the profit at this level of output. viii) Find the marginal revenue and the marginal cost at the output obtained in (ix) above comment upon the result. [12]**

**Answer**:

$$C = x\left(\frac{x^2}{10} + 200\right) = \frac{x^3}{10} + 200x$$

X = '000 units p.m.

$R = \left(\frac{2,200 - 3x}{2}\right)x = \frac{2,200 - 3x^2}{2}$

i) if firm's output – 10,000 units per month.

Cost = $10\left(\frac{100}{10} + 200\right) = 2,100$

$MC = \frac{dc}{dx} = \frac{3x^2}{10} + 200$

Marginal Cost (at x = 10) = $\frac{3(100)}{10} + 200 = 230$

ii) i.e., MC = 320

$\frac{3x^2}{10} + 200 = 320$

$3x^2 + 2000 = 3,200$

$3x^2 = 1200$

$x^2 = 400$

$\therefore \sqrt{400} = 20$

$\therefore$ Total cost = $\frac{20.20.20}{10} + 200 \times 20 = 4,800$

iii) Marginal Revenue

$= MR = \frac{dr}{dx} = \frac{2,200}{2} - \frac{6x}{2}$

$= 1100 - 3x$

iv) Total revenue at x = 10

is $\frac{2,200 \text{ x } 10 - 3(100)}{2} = \frac{22,000 - 300}{2} = \frac{21,700}{2} = 10850$

Marginal Revenue = 1100 – 3 x 10 = 1070

v) Given, MR = 1040

i.e. 1100 – 3x = 1040

–3x = –60

x = 20

Monthly Revenue = $\frac{2,200 \text{ x } 20}{2} - \frac{3 \text{ x } 400}{2}$

= 22,000 – 600 = 21,400

vi) Profit = R – C = $\frac{2,200x}{2} - \frac{3x^2}{2} - \frac{x^3}{2} - 200x$

Marginal Profit $\frac{-x^3}{10} - \frac{3x^3}{2} + 900x$ (say p)

$= \frac{dp}{dx} = \frac{3x^3}{2} - \frac{6x}{2} - 900$

vii) MP = 0 (given)

$$\frac{-3x^3}{2} - 3x + 900 = 0$$

$\Rightarrow -3x^2 - 30x + 9{,}000 = 0$

$x^2 + 10x - 3{,}000 = 0$

$x^2 + 60x - 50x - 3{,}000 = 0$

$x\ (x + 60) - 50\ (x + 60) = 0$

$x\ (x - 50)\ (x + 60) = 0$

$\therefore x = 50$ or $x = -60$

Profit = R – C = $\frac{2{,}200x}{2} - \frac{3x^2}{2} - \frac{x^3}{2} - 200x$

Profit, at output x = 50

= 28,750

viii) Marginal cost at x = 50

$= \frac{3x^2}{2} + 200 = \frac{3(2{,}500)}{10} + 200 = 950$

Marginal Revenue = at x = 50

$1100 - 3x = 1100 - 3 \times 50 = 950$

Profit will be maximum at MC = MR

**(c) (i) A company is planning to market a new model of a doll. Rather than setting the selling price of the doll based only on production cost estimation management polls the retailers of the doll to see how many dolls they will buy for various prices. From this survey, it is determined at the unit demand function (the relationship between the amount 'x' each retailer would buy and the price he would pay) is x = 30,000 – 1500P. The fixed cost of the production of the dolls are found to be ₹28,000/- and cost of Material & labour to produce each doll is estimated to be ₹8 per unit. What price should the company charge retailer in order to obtain a maximum profit? Also find the maximum profit.** **[7]**

**Answer:**

$x = 30000 - 1500P$

$x - 30000 = -1500P$

$\therefore P = \frac{30{,}000 - x}{1{,}500}$

Revenue = $\frac{30{,}000x - x^2}{1{,}500}$

$C = 8x + 28000$

Profit = $\frac{30{,}000x - x^2}{1{,}500} - 8x - 28{,}000$

$\frac{dc}{dx} = \frac{1}{1{,}500}(30{,}000 - 2x) - 8 = 0$

$= 30{,}000 - 2x - 12{,}000 = 0$

$-2x = -18{,}000$

$x = \frac{18{,}000}{2} = 9{,}000$

$\frac{d^2p}{dx^2} = -2$, which is Negative

$= \frac{30{,}000 \times 9{,}000 - 9{,}000^2}{1{,}500} - 72{,}000 - 28{,}000$

$= 1{,}80{,}000 - \frac{8{,}10{,}000}{15} - 72{,}000 - 28000$

$= 26{,}000$

**(ii) Explain the concept of Penetration pricing policy of a new product. [5]**

**Answer:**

Penetration Price Policy:

Instead of setting a high price, the firm may set a low price for a new product by adding a low mark-up to the full cost. This is done to penetrate the market as quickly as possible. The assumptions behind the low penetration price policy are:

a) The new product is being introduced in a market which is already served by well-known brands. A low price is necessary to attract gradually consumers who are already accustomed to other brands.
b) The low price will help to maximize the sales of the product even in the short period.
c) The low price is set in the market to prevent the entry of new products.

Penetration price policy is preferred to skimming price under three conditions:

In the first place, skimming price offering a high margin will attract many rivals to enter the market. With the entry of powerful rivals into the market, competition will be intensified, price will fall and profits will be competed away in the long run. A firm will prefer a low penetration price if it fears the entry of powerful rivals with plenty of capital and new technology. For a low penetration price, based on extremely low mark-up will be least profitable and potential competitors will not be induced to enter the market.

Secondly, a firm will prefer low penetration price strategy if product differentiation is low and if rival firms can easily imitate the product. In such a case, the objective of the firm to fix low price is to establish a strong market based and build goodwill among consumers and strong consumer loyalty.

Finally, a firm may anticipate that its main product may generate continuing demand for the complementary items. In such a case, the firm will follow penetration pricing for its new product, so that the product as well as its complements will get a wider market.