Paper – 8: Cost & Management Accounting

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

Question No 1 is Compulsory. Answers any five Questions from the rest.
Working Notes should form part of the answer.

Question.1

(a) Match the statement in Column I with appropriate statement in Column II [1x5]

Column I	Column II
(i) By Product Cost Accounting	**(A)** Method of maintaining store record
(ii) Material Requisition	**(B)** Basis for remuneration employees
(iii) Perpetual inventory	**(C)** Reverse Cost Method
(iv) Angle of incidence	**(D)** Production Order
(v) Merit rating	**(E)** Profitability Rate

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

(i) ABC analysis is made on the basis of unit prices of materials.
(ii) If an expense can be identified with a specific cost unit, it is treated as direct expense.
(iii) A Production Budget is prepared before Sales Budget.
(iv) The relationship of value, function and cost can be expressed as Cost=Value/Function.
(v) Just-in-time deals with controlling defects in time.

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

(i) Margin of safety is_____ or _____.
(ii) Material usage variance is the sum of _____ and _____.
(iii) Efficiency is basically a ratio of _____ and _____.
(iv) Two broad methods of Costing are _____ and _____.
(v) A cost which does not involve any cash outflow is called _____ or _____.

(d) In the following cases, one out of four answers is correct. You are required to indicate the correct answer (= 1 mark) and give workings (=1 mark): [2x5=10]

(i) Sales of two consecutive months of a company are ₹ 3,80,000 and ₹ 4,20,000. The company's net profit for these months amounted to ₹ 24,000 and ₹ 40,000 respectively. There is no change in P/V ratio or fixed costs. The P/V ratio of the company is
(A) 33.33%
(B) 40%
(C) 25%
(D) None of these

(ii) The repair and maintenance of machinery in a factory is found to be a semi variable cost having some relationship with the no. of machine hours run. It was ₹ 17,500 during October, 2013 for 7,500 machine hours worked and ₹ 15,400 for November, 2013 when only 5,400 machine hours worked. The budgeted cost of repairs and maintenance for December 2013 when 6,200 machine hours are expected to be worked will be ₹ _____
(A) 17,200

(B) 16,800
(C) 16,200
(D) 17,000

(iii) 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(A) and usage variance of ₹ 3,000(F). Then standard material cost of actual production was_____
(A) ₹20,000
(B) ₹30,000
(C) ₹21,000
(D) ₹27,000

(iv) Selling price of a product is ₹ 5 per unit, variable cost is ₹ 3 per unit and fixed cost is ₹ 10,000. Then B.E point in units will be:_____
(A) 10,000
(B) 5,000
(C) 7,500
(D) None of the above

(v) The set up cost of a machine is ₹ 120. A certain order requires 9,000 components to be made in the machine for execution of the order. Cost of production of the component is ₹ 40 each and it requires 15% of the cost for storing it for a year. Then the economic Batch Quantity is_____ unit.
(A) 300
(B) 250
(C) 400
(D) 600

Answer:

(a)

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

(b)

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

(c)

(i) Sales minus B.E sales, Profit/(C/S)
(ii) Mix variance, yield variance
(iii) Input, output
(iv) Job costing, Process costing
(v) Notional cost, Imputed cost

(d)

(i) (B) 40%

P/V Ratio=Change in profit/Change in sales
=(40,000-24,000)/(4,20,000-3,80,000)
=(16,000/40,000)x 100
=40%

(ii) (C) 16,200

Variable cost per hour= ₹ (17,500-15,400)/(7,500-5,400)=₹ 1/hour
Fixed cost= [₹ 17,500-(₹ 7,500x1)]= ₹ 10,000
Cost of repairs and maintenance for Dec2013= (6,200x1) +10,000= ₹ 16,200

(iii) (C) ₹21,000

Total material cost variance=Material price variance +Material usage variance
=6,000(A) +3,000(F)
=3,000(A)
Actual material cost=2,000x12
=₹24,000
Hence, the standard material cost of actual production=24,000+3,000(A) =₹21,000

(iv) (B) 5,000

Break-even point=Fixed Cost/Contribution per unit
=10,000/5-3
=5,000 units

(v) (D) 600 units

$$EBQ = \sqrt{\frac{2 \times \text{Annual demand} \times \text{Set-up cost per batch}}{\text{Annual storage cost of one unit}}}$$

$$= \sqrt{\frac{2 \times 9000 \times 120}{40 \times 15\%}}$$

=600 units

Question.2

(a) State the essentials of a good incentive scheme. [2]

Answer:

Essentials of a good incentive scheme are

- Reward for the job should be linked to effort involved, reward should be just and fair.
- Scheme should be clearly defined and easy to understand, reasonable and stable
- There should not be any limit on earning as that may dampen the spirit
- The employees should not be deprived of earnings for reasons beyond their control
- There should be a guaranteed earning and interest of workmen not covered by the scheme should also be taken care of.

(b) The standard hours for job X is 100 hours. The job has been completed by Amar in 60 hours, Akbar in 70 hours and Anthony in 95 hours. The bonus system applicable to the job is as follows:

Percentage of time saved to time allowed	Bonus
Saving up to 10%	10% of time saved
From 11% to 20%	15% of time saved
From 21% to 40%	20% of time saved
From 41% to 100%	25% of time save

The rate of pay is ₹ 10 per hour. Calculate the total earnings of each worker and also the rate of earnings per hour. [3+2=5]

Answer:

Statement showing the total earnings and rate of earnings per hour			
Particulars	**Amar**	**Akbar**	**Anthony**
Standard hours for the job:	100	100	100
Time taken for the job – hours	60	70	95
Time saved [standard hours – time taken]:	40	30	5
Percentage of time saved to time allowed: (Time saved/time allowed x 100)	40	30	5
Bonus[as % of time saved, as given]	20	20	10
Bonus hours:	8	6	0.50
Total hours to be paid: [time taken + bonus hours]:	68	76	95.50
Total earnings [₹ 10 per hour]:	₹ 680	₹ 760	₹ 955
Rate of earnings per hour	₹ 11.33	₹ 10.85	₹ 10.052

Bonus hours are computed as follows.

(a) Amar: Time saved is 40 hours, as per the slab given, lie is entitled for bonus hours of 20% of time saved which mean his bonus hours is 8.

(b) Akbar: Time saved is 30 hours. He is entitled for bonus hours of 20% of time saved as per the slab given. This means that his bonus hours are 6 hours.

(c) Anthony: Time saved in 5 hours. He is entitled for 10% of the time hours as per the slab given. This mean that his bonus hours are 0.50

Rate of earnings per hour is computed by dividing the total earnings by the total number of hours.

(c) A factory is currently working at 50% capacity and produces 5,000 units at a cost of ₹ 90 per unit as per details given below :

Materials	**₹ 50**
Labour	**₹ 15**
Factory Overhead	**₹ 15 (₹ 6 fixed)**
Administration Overhead	**₹ 10 (₹ 5 fixed)**

The current selling price is ₹ 100 per unit.

At 60% working, material cost per unit increases by 2% and selling price per unit falls by 2%. At 80% working, material cost per unit increases by 5% and selling price per unit falls by 5%. Calculate the current profit at 50% working. Estimate profits of the factory at 60% and 80% working. Which capacity of production would you recommend? [2+2+2+2=8]

Answer:

Statement of Comparative Profitability

Capacity	**50%**	**60%**	**80%**
Production/Sales (units)	5,000	6,000	8,000
	₹	₹	₹
Material	50.00	51.00	52.50
Labour	15.00	15.00	15.00
Variable Factory O/H	9.00	9.00	9.00
Variable Adm. O/H	5.00	5.00	5.00
Total Variable Cost	79.00	80.00	81.50
Sales /Unit	100.00	98.00	95.00
Contribution	21.00	18.00	13.50
Total Contribution	1,05,000	1,08,000	1,08,000
Fixed O/H (5000 x 6 + 5000 x 5)	55,000	55,000	55,000
Profit	**50,000**	**53,000**	**53,000**

It can be observed from above that the profit is the same at 60% capacity and 80% capacity. At 80% capacity more production, more working capacity, more efforts are required to get the profit of ₹ 53,000 which is the same at 60% capacity. Hence 60% capacity production is recommended to achieve the profit of ₹ 53,000 which is more than the present profit of ₹ 50,000. More risk and more endeavors' are involved for production and sales at higher level of 80% Capacity.

Question.3

(a) Prabhu Builders Ltd. commenced work on 1st April, 2012 on a contract of which the agreed price was ₹ 5 lakhs. The following expenditure was incurred during the year up to 31st March, 2013.

Particulars	**Amount ₹**
Wages	**1,40,000**
Plant	**35,000**
Materials	**1,05,000**
Head office expenses	**12,500**

Materials costing ₹ 10,000 proved unsuitable and were sold for ₹ 11,500 and a part of plant was scrapped and sold for ₹ 1,700. Of the contract price ₹ 2,40,000 representing 80% of work certified had been received by 31st March, 2013 and on that date the value of the plant on the job was ₹ 8,000 and the value of materials was ₹3,000. The cost of work done but not certified was ₹ 25,000.

It was decided to (i) Estimate what further expenditure would be incurred in completing the contract, (ii) Compute from the estimate and the expenditure already incurred, the total profit that would be made on the contract and (iii) Ascertain the amount of profit to be taken to the credit of Profit and Loss Account for the year ending on 31st March, 2013. While taking profit to the credit of Profit and Loss A/c. that portion of the total profit should be taken which the value of work certified bears to the contract price. Details of the estimates to complete the contact are given below:

(i) That the contract would be completed by 30th September, 2013.
(ii) The wages to complete would amount ₹ 84,750.
(iii) That material in addition to those in stock on 31st March, 2013 would cost ₹ 50,000.
(iv) That further ₹ 15,000 would have to be spent on plant and the residual value of the plant on 30th September, 2013 would be ₹ 6,000.
(v) The head office expenses to the contract would be at the same annual rate as in 2012-13.

(vi) That claims, temporary maintenance and contingencies would require ₹ 9,000. Prepare contract account for the year ended 31st March, 2013 and show your calculations of the sum to be credited to Profit and Loss A/c. for the year. [8+2]

Answer:

PRABHU BUILDERS LTD.

Contract A/c. for the year ended 31st March, 2013

Particulars	Amount ₹		Particulars	Amount ₹
To Wages:	1,40,000	By	Plant in hand :	8,000
To Plant:	35,000	By	Materials in hand:	3,000
To Materials :	1,05,000	By	Cash [Materials sold]:	11,500
To Head Office Expenses :	12,500	By	Cash [Plant sold]:	1,700
To Profit & Loss A/c. : [profit on materials sold]	1,500	By	Work-in-progress Work certified : 3,00,000 Work uncertified : 25,000	3,25,000
To Notional profit c/d.:	55,200			
Total:	3,49,200		Total:	3,49,200
To Profit & Loss A/c. : Transfer	36,120	By	Notional profit b/d.:	55,200
To Profit & Loss A/c. : Reserve	19,800			
Total	55,200		Total:	55,200

* As at 31.03.2013, Profit transferred to profit & loss a/c. is computed with the help of the following formula.

Estimated Profit x Work Certified /Contract Price

₹ 60,200 x ₹ 3,00,000/₹ 5,00,000 =₹ 36,120

Working Notes:

(i) Materials used during the year: 2012-13

Particulars	Amount (₹)
Materials used during the year:	1,05,000
Less : Cost of materials sold during the year:	10,000
	95,000
Less : Materials in hand at the end :	3,000
Materials used during the year:	**92,000**

(ii) Plant used during the year: 2012-13

Particulars ,	Amount (₹)
Plant introduced at the beginning :	35,000
Less : Sale of plant as scrap :	1,700
	33,300
Less : Materials in hand at the end :	8,000
Plant used during the year:	**25,300**

(iii) Estimation of materials used during 6 months ending 30.09.2013 :

Particulars	Amount ₹
Materials in hand at the beginning :	3,000
Materials further introduced during 6 months :	50,000
Estimated materials used during 6 months :	53,000

(iv) Estimation of Plant used during 6 months ending 30.09.2013

Particulars	Amount ₹
Plant in hand in the beginning:	8,000
Plant introduced during the year:	15,000
Plant in hand at the end of 6 months	23,00
Less : Residual Value	6,000
Plant used during the year:	17,000

(v) Computation of Estimated Profit (till completion) :

Particulars	Amount ₹
Expenses during 2012-13	
Materials used:	92,000
Plant used :	25,300
Wages:	1,40,000
Head office expenses:	12,500
Total [a]:	**2,69,800**
Estimated expenditure during 6 months to 30.09.13	
Materials used [As per working note]:	53,000
Plant used [As per working note]:	17,000
Wages:	84,750
Head office expenses [₹12,500 X 6/12]:	6,250
Contingencies:	9,000
Total [b]:	**1,70,000**
Total estimated expenditure **[a]+[b]** to complete;	**4,39,800**
Estimated profit:	60,200
Contract price:	5,00,000

(b) Illustrate "Relevant Cost". [5]

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 is 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.

The two main pitfalls in Relevant Cost are as follows:

(i) All Variable Cost are Relevant

(ii) All Fixed Costs are Irrelevant

The following costs are generally considered relevant for decision-making: –

(i) Marginal Cost

(ii) Differential Cost

(iii) Opportunity Cost

(iv) Discretionary Costs

(v) Replacement Cost

(vi) Imputed Costs:

(vii) Out-of-Pocket Cost:

Question.4

(a) Zenith Transport Company has given a route of 40 kilometers long to run bus. The bus costs the company a sum of ₹ 1,00,000. It has been insured at 3% p.a. and the annual tax will amount to ₹ 2,000. Garage rent is ₹ 200 per month. Annul repairs will be ₹ 2,000 and the bus is likely to last for 5 years. The driver's salary will be ₹ 300 per month and the conductor's salary will be ₹ 200 per month in addition to 10% of takings as commission (to be shared by the driver and the conductor equally.)

Cost of stationary will be ₹ 100 per month. Manager-cum-Accountant's salary is ₹ 700 per month, petrol and oil will be ₹ 50 per 100 kilometers. The bus will make 3 up and down trips carrying on an average 40 passengers on each trip.

Assuming 15% profit on takings, calculate the bus fare to be charged from each passenger. The bus will run on average 25 days in a month. [10]

Answer:

Computation of fare to be charged

Particulars	Amount p.a. (₹)	Amount p.m.(₹)
(a) Standing charges:		
• Insurance @ 3% on ₹ 1,00,000	3,000	
• Tax	2,000	
• Garage rent @ ₹200/ month	2,400	
• Driver's salary @₹300/month	3,600	
• Conductor's Salary @₹200/month	2,400	
• Stationary @₹100/month	1,200	
• Manager-cum-Accountant's Salary @₹700 month	8,400	
• **Total standing charges**	**23,000**	**1,916.67**
(b) Running Expenses		
• Depreciation ₹1,00,000/5	20,000	1,666.67
• Repairs	2,000	166.66
• Petrol & Oil ₹0.50×[40km×2×3×25]		3,000.00
• Commission		900.00
• Profit		1,350.00
• **Total Taking**		**9,000**
• Fare per passenger kilometer (₹9,000/2,40,000#)	0.0375	0.0375
• Fare/ passenger (₹9,000/6,000)		₹1.50

*** Computation of commission and profit.**

Let total taking be x

Commission @ 10% =x /10, profit is 15% of taking.

* Hence Profit=15x/100 =3x /20
* Total cost without commission=₹6,750 (Standing charges+ Running charges)
* Hence x=₹ 6,750 + x /10 + 3x /20

Solving the equation for x we get x= ₹9,000, which is total takings.

* Therefore, commission will be 10% of total taking=₹900
* Profit @15% of total taking=₹1,350

 # Total passenger kilometers is shown below:

40 km. ×2(up+ down) ×3 trips×25 days×40 passengers

=2,40,000 passenger km/month.

Calculation of total passenger

=40 passenger each trip × 2(up + down) × 3 trips × 25 days
=6,000 passengers

(b) Distinguish between Standard Costing and Budgetary Control. [5]

Answer:

Difference between Standard Costing and Budgetary Control

Standard Costing	Budgetary Control
1. Standards are based on technical assessments.	**1.** Budgets are generally based on past actual adjusted to current trends
2. Standards are mainly for elements of cost.	**2.** Budgets are prepared for Sales, Production, Expenses, Profit, Capital expenditure, Cash.
3. Standard Cost is projection of cost account.	**3.** Budgets are projections of financial account.
4. Standard Costing seeks to procure efficient unitization of material, labour and indirect services.	**4.** Budget seeks to lay down a monetary limit of expenses which should not be normally exceeds. If this limit is exceeded, the actual profit will fall short of budgeted profit.
5. Standards are pointers to further improvements.	**5.** Budgets are indices, adherence to which keeps a business out of problem.
6. Standard Costing is mainly confined to expenditure only.	**6.** Budget preparation considers both income and expenditure.

Question.5

(a) State the fundamental principles of process costing. [2]

Answer:

The production is to be in a continuous flow and uniform. The individual units will lose their identity. Unit cost will be arrived at by dividing total cost of a particular period by total output of that period. Cost of each process is ascertained and the cost is transferred to next process. In particular process normal and abnormal losses will occur. When there are incomplete units in the process, equivalent unit will have calculated for computing unit cost.

(b) A company prepares a budget for a production of 200000 units. Variable cost per units is ₹ 15 and the fixed cost is ₹ 2 per unit. The company fixes its selling price to fetch a profit of 10% on cost.

(i) What is the break- even point? (both in units and ₹)

(ii) What is profit volume ratio?

(iii) If it reduces its selling price by 5%, how does the revised selling price affect the break- even point and profit volume ratio?

(iv) If a profit increase of 10% is desired more than the budget, what should be the sales at the reduced price? [4+1+3+2=10]

Answer:

(i) Break Even Point in units = Fixed cost/Contribution per unit

= (₹ 2x 2,00,000 units)/3.70

$$= \frac{₹\ 4,00,000}{₹\ 3.70} = 1,08,108 \text{ units}$$

Break Even Point in rupees = Fixed Cost /P.V Ratio
= ₹4,00,000 /19.79%
=₹ 20,21,223

Note: Contribution per Unit
⇒ Selling price per unit = Total Cost + 10% profit on Cost
= ₹17 + 10% of 17
= ₹17.00 + ₹1.70
= ₹18.70
⇒ Contribution per unit = Selling – Variable cost
= ₹18.70 – 15.00
= ₹3.70
P.V Ratio= (Contribution per unit /Selling price in per unit) × 100
= (₹ 3.70 / ₹ 18.70) × 100
=19.79%

(ii) Profit volume ratio = $\frac{\text{Contribution per unit}}{\text{Selling price per unit}} \times 100$

$= \frac{3.70}{18.70} \times 100 = 19.79\%$

(iii) Reduction in selling price by 5%
Revised selling price = 18.7 – 5% of 18.7 = ₹18.70 – ₹0.94
= ₹17.76
Revised contribution = ₹17.76 – ₹15.00 = ₹2.76

Revised Break Even Point = $\frac{\text{Fixed Cost}}{\text{Contribution per unit}}$

$= \frac{4,00,000}{2.76} = 1,44,928$ units.

Revised P/V Ratio= Contribution/ Sales
=(₹ 2.76 /17.76)
=15.54%

(iv) Desired profit = 1.7 + 10% of 1.7 = 1.7 + 0.17 = ₹1.87
Total desired profit = ₹1.87 x 2,00,000 units = ₹3,74,000
Total desired contribution = Total fixed costs + Total profit = 4,00,000 + 3,74,000 = 7,74000
Quantity to be sold = Total contribution Revised contribution per unit = 7,74,000/2.76
=2,80,435 units
Sales value = 2,80,435 units x ₹17.76 = ₹49,80,526

(c) The extracts from the payroll of M/s. Kumar Bros. is as follows:-

Number of employees at the beginning of 2013	**150**
Number of employees at the end of 2013	**200**
Number of employees resigned	**20**
Number of employees discharged	**5**
Number of employees replaced due to resignation and discharges	**20**

Calculate the Labour Turnover Rate for the factory by
(i) Separation Method
(ii) Replacement Method

(iii) Flux Method. **[1+1+1=3]**

Answer:

(i) Separation Method= 25 ÷ [(150 + 200)/2] × 100
=0.1429 × 100
=14.29%

(ii) Replacement Method= (20/175) × 100
=11.43%

(iii) Flux Method= (25 + 20) ÷ 175 × 100
=25.71%

Question.6

(a) From the following forecast of income and expenditure prepare a Cash Budget for three months ending on June, 2012:

Month	Sales (₹)	Purchase (₹)	Wages (₹)	Misc. (₹)
2012 February	1,20,000	84,000	10,000	7,000
March	1,30,000	1,00,000	12,000	8,000
April	80,000	1,04,000	8,000	6,000
May	1,16,000	1,06,000	10,000	12,000
June	88,000	80,000	8,000	6,000

Additional Information:

(i) Sales: 20% realised in the month of sales, discount allowed 2%, balance realised equally in two subsequent months.
(ii) Purchases: These are paid in the month following the month of supply.
(iii) Wages: 25% paid in arrears in the following month.
(iv) Misc. Expenses: Paid a month in arrears.
(v) Rent: ₹ 1,000 per month paid quarterly in advance due in April.
(vi) Income Tax: First installment of advance tax ₹ 25,000 due on or before 15th June to be paid within the month.
(vii) Income from Investment: ₹5,000 received quarterly in April, July etc.
(viii) Cash in Hand: ₹5,000 in April 1, 2012. **[10]**

Answer:

Cash Budget April – June 2012

Particulars	April (₹)	May (₹)	June (₹)
A) Opening Balance	5,000	6,000	(6,300)
B) Debtors Realised	1,16,000	1,07,200	96,000
C) Income from Investment	5,000		
(1)	1,26,000	1,13,200	89,700
D) Creditor Paid	(1,00,000)	(1,04,000)	(1,06,000)
E) Wages Paid			
March	(3,000)	—	
April	(6,000)	(2,000)	—
May	—	(7500)	(2,500)
June	-	-	(6,000)
F) Rent (1000 x 3)	(3,000)	-	-
G) Income Tax	-	-	(25,000)
H) Miscellaneous Expenses	(8,000)	(6,000)	(12,000)
(2)	1,20,000	1,19,500	1,51,500

Closing Balance (1 – 2)	6,000	(6,300)	(61,800)

Working Notes:

Calculation of collection from debtors

	February	March	April	May	June
Sales (₹)	1,20,000	1,30,000	80,000	1,16,000	88,000
20% realised	24,000	26,000	16,000	23,200	17,600
Balance	96,000	1,04,000	64,000	92,800	70,400
Balance equally realized in two subsequent month		48,000	48,000		
			52,000	52,000	
				32,000	32,000
					46,400
Collection from debtor		(26,000+48,00) =74,000	(16,00+48,000 +52,000) =1,16,000	(23,200+52,000 + 32,000) =1,07,200	(17,600+ 32,000+ 46,400) =96,000

(b) Write short note on JIT (Just In Time). [5]

Answer:

JIT is a Japanese method of integrated philosophy by team approach in which the production would draw the right amount of inventory from the preceding stage to sustain the activity. In this process, the production activity on the actual demand, rather than on a predetermined schedule, since the cycle time for production of various models is given only to the final assembly point of mixed production line. The production stages are well connected in tree from. JIT results in lower inventory, higher productivity, and faster feedback of defects.

JIT has some benefits which are as follows:

1. **Reduction in Inventory Levels:** Unnecessary piling up of Raw Materials, WIP and Finished Goods are avoided. The focus is on production and purchase as per the Firm's requirement.
2. **Reduction in wastage of Time:** Wastage of time in various ways like Inspection Time, Machiner Set-Up Time, Storage Time, Queue Time, Defective Rework Time etc. are reduced.
3. **Reduction in Scrap Rates:** They will be sharp reductions in the rate of defectives or scrapped units. The workers themselves identify defects and take prompt action to avoid their recurrence.
4. **Reduction in OH Costs:** By reducing unnecessary (non-value-added) activities and the associated time and cost-drivers, OH can be greatly reduced e.g. material handling costs, rework costs, facility costs etc.

Question.7

(a) A group of workers consisting of 30 men above 30 years of age, 15 females above 30 years of age, and 10 youth of age between 20-30 are paid standard hourly rates as follows:

Males..... ₹80/- per hour
Females.....₹60/- per hour
Youth .....₹40/-per hour

In a normal working week of 40 hours, the group is expected to produce 2,000 units of output. During a week, the group consisting of 40 males, 10 females and 5 youth

produced 1,600 units. They were paid wages @ ₹70/- for males, ₹65/- for females and ₹30/- for youth per hour. 4 hours were lost due to abnormal idle time. The Actual and Standard Hrs are as follows:

	Standard Hrs	Actual Hrs
Male	**1200**	**1600**
Female	**600**	**400**
Youth	**400**	**200**
	2200	**2200**

Calculate;

(i) Wage variance

(ii) Wages rate variance;

(iii) Labour efficiency variance;

(iv) Labour mix variance;

(v) Labour idle time variance. **[2+3+3+4+3=15]**

Answer:

Working for variance analysis from given data:

Workers	Std. hrs	Std. rate ₹	Std. Amt ₹	Actual Hrs	Actual rate ₹	Actual Amount ₹
Male	1200	80	96,000	1600	70	1,12,000
Female	600	60	36,000	400	65	26,000
Youth	400	40	16,000	200	30	6,000
Total	2200		1,48,000	2200		1,44,000

(i) Labour wages variance = Std labour cost for Actual output – Actual amount

$\left(\frac{1,48,000}{2,000} x 1,600\right)$ - ₹1,44,000 = ₹25,600 (Adv)

(ii) Labour (Wages) Rate variance = Difference in rates (Std – Act) x Act Hrs

For male ₹ (80 – 70) x 1,600 = ₹16,000 (Fav)

For Female ₹(60 – 65) x 400 = ₹2,000 (Adv)

For Youth ₹(40 – 30) x 200 = ₹2,000 (Fav)

Total = ₹16,000 (Fav)

(iii) Labour efficiency variance = (Std hrs for Act output – Act hours) x std rate

For Male	$\left(\frac{1,200}{2,000} \times 1,600 - 1,600\right) \times$ ₹ 80 = ₹51,200 (Adv)
For Female	$\left(\frac{600}{2,000} x 1,600 - 400\right)$ x ₹60 = ₹4,800 (Fav)
For Youth	$\left(\frac{400}{2,000} x\ 1,600 - 200\right)$ x ₹40 = ₹4,800 (Fav)
Total	₹41,600 (Adv)

(iv) Labour mix variance = Effective hrs = Hrs paid – Idle time (hrs)

Male	1600 – 4 x 40	1440 hrs
Female	400 – 4 x 10	360 hrs
Youth	200 – 4 x 5	180 hrs

Total		1980 hrs
Total effective hours in std mix:		
Male	$\left(\frac{1200}{2,200} x 1980\right)$	1080 hrs
Female	$\left(\frac{600}{2,200} x 1980\right)$	540 hrs
Youth	$\left(\frac{400}{2,200} x 1980\right)$	360 hrs
Total		1980 hrs

The required variance = (Effective hrs in Std. mix – Actual effective hrs.) x Std. rate

For Male	(1080 – 1440) x ₹80	₹28,800 (Adv)
For Female	(540 – 360) x ₹60	₹10,800 (Fav)
For Youth	(360 – 180) x ₹40	₹7,200 (Fav)
Total		₹10,800 (Adv)

(v) Labour idle time variance = Idle hours x Std. rate

For Male	(4 x 40) x ₹80	₹12,800 (Adv)
For Female	(4 x 10) x ₹60	₹2,400 (Aav)
For Youth	((4 x 5) x ₹40	₹800 (Aav)
Total		₹16,000 (Adv)

Question.8 Write Short notes on the following (any three) [3x5=15]

(a) Limitation of Market Based Transfer Pricing
(b) Supply chain Analysis
(c) Benchmarking
(d) ABC System of Store Control
(e) Managerial Decision Making

Answer:

(a) Limitation of Marker Based Transfer Pricing:

(i) There may be resistance from buying division. They may question buying from the selling division only when they have to anyway pay the market price.
(ii) Just like cost based prices, market prices may also be fluctuating and that may lead to difficulties in fixing a price. Market price may also change frequently.
(iii) Market price can also be of several types like ex factory, whole sale, retail price etc,
(iv) For international products it may be difficult to obtain the market price.
(v) Market price may not be available for intermediate products.
(vi) Market prices may not be ascertained easily.

(b) Supply Chain Analysis:

A supply chain is the stream of processes of moving goods from the customer's order through the new raw materials stage, supply, production and distribution of products to the customer. All organization have supply chains of varying degrees, depending upon the size of the organization and the type of the product manufactured, these network obtain supplies and components, change these materials into finished products and then distribute them to the customers. Managing the chain of events in this process is called as 'Supply Chain Management'.

The term "Supply Chain" describes the flow of goods, Services and information from the initial sources of materials and services to the delivery of products to customers; regardless of whether those activities occur in the same organization or in other organization. Customers expect improved performance from companies through the supply chain. They expect that the companies should perform all these activities in an efficient manner so as to reduce cost maintaining quality ensuring easy availability of the products are daunting tasks for the Management. The Management Accounting plays a vital role in ensuring value for money for the customers.
Supply Chain Analysis has emerged as one of the fastest growing business intelligence application areas. The proliferation of automated tracking systems, Supply Chain transaction systems and electronic data interchange have contributed to the rapid increase of data related to Supply Chain Management.

(c) Benchmarking:

Benchmarking is a technique for continues improvement in performance. It involves comparing a firm's products, services or activities against other best performing organizations, either internal or external to the firm. The objective of is to find out the improvements, that can be effected in the product service or activity and ensure that the improvements are implemented. It attempts to indicate an activity such as customer order processing needs to be improved and finding a non-rival organization that is considered to represent world class best practice and studying how it performs the activity.
It is a performance measure that provides the driving force to establish high performance and means to accomplish these goals. It is thus a component of a wider improvement process such as business process re-engineering or quality improvement. Benchmarking performance indicators may include labour cost per unit of output, in a manufacturing concern or fee income per dental surgery in a dental practice.

(d) ABC System of Store Control:

In large manufacturing companies, where stocks of direct materials and components consist of many different items, maintaining inventory control on every individual item is extremely difficult. An effective inventory control system need not have all the items in the inventory treated in the same manner under the same control technique. The company should pay maximum attention to those items whose value is the highest. Thus the company should be selective in its approach to control investment in various types of inventories. This analytical approach is called the ABC Analysis and tends to measure the cost significance of each item of inventories and also the frequency of their replenishment. The highest value items are classified as A, B and C. "A items would be under the highest control, "C" items represent relatively least value and would be under simple control. "B" items fall in between these two categories and require reasonable attention of management. The ABC plan concentrates on corporate items and is also known as control by importance and exception.

(e) Managerial Decision Making:

Managerial Decision Making is a very crucial function in any organization. Decision making should be on the basis of the relevant information. For example, marginal costing helps in generating relevant information in certain critical areas like:-

- Make or buy decisions
- Accepting or rejecting an export order
- Variation in selling price
- Variation in product mix
- Variation in sales mix

- Key factor analysis
- Evaluation of different alternatives regarding profit improvement
- Closing down/Continuation of a division
- Capital Expenditure decision.
- The concept of Break Even Point is extremely important for decision making in various areas.