PAPER 8- COST ACCOUNTING

Paper - 8: COST ACCOUNTING

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

Section-A

1. A. Choose the correct answer from given four alternatives [1x10=10]

A. Warehouse expense is an example of
(a) Production overhead
(b) Selling overhead
(c) Distribution overhead
(d) None of above.

B. Difference between standard cost and actual cost is called as
(a) Wastage
(b) Loss
(c) Variance
(d) Profit

C. Which of the following is not a potential benefit of using a budget?
(a) Enhanced coordination of firm activities
(b) More motivated managers
(c) Improved interdepartmental communication
(d) More accurate external financial statements.

D. Which of the following is considered as normal loss of material?
(a) Pilferage
(b) Loss due to accident
(c) Loss due to careless handling of material
(d) None of the above.

E. At the Economic Ordering Quantity level, the following is true
(a) The ordering cost is minimum
(b) The carrying cost is minimum
(c) The ordering cost is equal to the carrying cost
(d) The purchase price is minimum.

F. The following is not treated as a manufacturing overhead:
(a) Lubricants
(b) Cotton waste
(c) Apportioned administration overheads
(d) Night shift allowance paid to a factory worker due to general work pressure.

G. In Reconciliations Statements Expenses shown only in cost accounts are:
(a) Added to financial profit
(b) Deducted from financial profit
(c) Ignored
(d) Deducted from costing profit.

H. Which of the following items is not included in preparation of Cost Sheet?
(a) Carriage inward
(b) Purchase returns
(c) Sales commission
(d) Interest paid

I. Marginal Costing technique follows the following basic of classification:
(a) Element wise
(b) Function wise
(c) Behaviour wise
(d) Identifiability wise.

J. Most of the expenses are direct in:
(a) Job costing
(b) Batch costing
(c) Contract costing
(d) None of the above.

(B) Match the following: [1X5=5]

	Column-A		Column-B
1.	Advertisement	A	Value of goods in transit
2.	Credit and collection	B	Floor area occupied
3.	Warehouse rent	C	A percentage of cash collection
4.	Royalties	D	No. of orders
5.	Bad debts	E	Sales value
6.	Transit insurance	F	Direct allocation

(C) State whether the following statements are 'True' or 'False': [1x5=5]

(i) Uniform costing is a unique method of costing to determine costs accurately.
(ii) Operation Costing and Operating Costing are interchangeably used for the same technique of costing.
(iii) CAS- 9 is for Direct Expenses as issued by the Cost Accounting Standards Board (CASB) of the Institute of Cost Accountants of India.
(iv) Need for Reconciliation arise in case of integrated system of accounts.
(v) Cost control accounts are prepared on the basis of double entry system.

(D) Fill in the blanks (You may write only the Roman numeral and the content filling the blank) [1x5=5]

(i) VED analysis is primarily used for contract of -----------------
(ii) Salary paid to factory manager is an item of _____________
(iii) In hospital the cost unit is--------------------
(iv) Cost of ------------------ is not borne by good units.
(v) In Absorption costing ------------------------- is added to inventory.

Answer:

1. (A) (A) (c)
(B) (c)
(C) (d)
(D) (c)
(E) (c)
(F) (d)
(G) (b)
(H) (d)
(I) (c)
(J) (c)

(B)

	Column-A		Column-B
1.	Advertisement	E	Sales value
2.	Credit and collection	D	No. of orders
3.	Warehouse rent	B	Floor area occupied
4.	Royalties	F	Direct allocation
5.	Bad debts	C	A percentage of cash collection
6.	Transit insurance	A	Value of goods in transit

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

(D) (i) Spare parts.
(ii) Factory overhead
(iii) per bed
(iv) Abnormal loss
(v) Fixed cost

Section - B

Answers any five Questions, working notes should form part of the answer.

2. (a) From the following particulars with respect to a particular item of materials of a manufacturing company, calculate the best quantity to order:

Ordering quantities (tonne)	Price per ton (₹)
Less than 250	6.00
250 but less than 800	5.90
800 but less than 2,000	5.80
2,000 but less than 4,000	5.70
4,000 and above	5.60

The annual demand for the material is 4,000 tonnes. Stock holding costs are 20% of material cost p.a. The delivery cost per order is ₹ 6.00. [9+6]

(b) The following information relates to the activities of a production department of Remington, for a certain period.

Material used	36,000
Direct Wages	30,000
Labour hours	12,000
Hours of Machinery-operation	20,000
Overhead Chargeable to the Dept	25,000

On one order carried out in the department during the period the relevant data were:-

Material used (₹)	6,000
Direct Wages (₹)	4,950
Labour hours worked	1,650 Hrs.
Machine Hours	1,200

Calculate the overheads chargeable to the job by four commonly used methods.

Answer:

2. (a)

Statement showing computation of total inventory cost at different order sizes

			Ordering Quantities			
(i)	Particulars	200	250	800	2000	4000
(ii)	Purchasing cost	24,000	23600	23200	22800	22400
(iii)	No. of orders	20	16	5	2	1
(iv)	Ordering cost	120	96	30	12	6
(v)	Average size of order	100	125	400	1000	2000
(vi)	Inventory Carrying cost per unit	1.2 (6x20%)	1.18 (5.9x20%)	1.16 (5.8x20%)	1.14 (5.7x20%)	1.12 (5.6x20%)
(vii)	Inventory Carrying cost	120	147.5	464	1140	2240
(viii)	Total Inventory Cost (ii +i +vi)	24240	23843.5	23694	23952	24646

For the above computations, the best quantity to order is 800 units.

(b) The four commonly used methods of absorbing or recovering overheads are as follows:

1. % of overheads on material = (25,000 / 36,000) x 100 = 69.44%
2. % of overheads on direct wages = (25,000 / 30,000) x 100 = 83.33%
3. Overhead rate per labour hour = 25,000 / 12,000 = 2.083
4. Machine hour rate method = 25,000 / 20,000 = 1.25

Accordingly, the overheads chargeable to job under the above methods is as follows:

1. Material = 6,000 x 69.44% = 4,166.40
2. Wages = 4,950 x 83.33% = 4,125
3. Labour hour rate = 1650 x 2.083 = ₹ 3,437
4. Machine hour rate = 1,200 x 1.25 =₹ 1,500.

3. (a) State the objective and scope of CAS 23. **[6+9]**

(b) The following are the costing records for the year 2014 of Nelito Systems:
Production 10,000 units;
Cost of Raw Materials ₹ 2,00,000;
Labour Cost ₹ 1,20,000;
Factory Overheads Rs 80,000;
Office Overheads Rs 40,000;
Selling Expenses Rs 10,000,
Rate of Profit 25% on the Selling Price.

The management decided to produce 15,000 units in 2015. It is estimated that the cost of raw materials will increase by 20%, the labour cost will increase by 10%, 50% of the overhead charges are fixed and the other 50% are variable. The selling expenses per unit will be reduced by 20%. The rate of profit will remain the same.

Prepare a Cost Statement of Nelito Systems for the year 2015 showing the total profit and selling price per unit.

Answer:

3. (a) CAS 23 stands for Cost Accounting Standard on Overburden Removal Cost. The standard deals with the principles and methods of measurement and assignment of Overburden Removal Cost and the presentation and disclosure in cost statements.

Objective:
The objective of this standard is to bring uniformity, consistency in the principles, methods of determining and assigning Overburden Removal Cost with reasonable accuracy.

Scope:
The standard shall be applied to cost statements which require classification, measurement, assignment, presentation and disclosure of Overburden Removal Cost including those requiring attestation.

(b)

Statement of Cost & Profit of Nelito Systems (Cost Sheet) (Output 10,000 Units)

Particulars	**Cost per unit (in ₹)**	**Total cost (in ₹)**
Raw Materials Labour	20 12	200,000 120,000
PRIME COST	32	320,000
Add: Factory Overhead	8	80,000
WORKS COST	40	400,000
Add: Office Overhead	4	40,000
COST OF PRODUCTION	44	440,000
Add: Selling Expenses	1	10,000
COST OF SALES	45	450,000
Add: Profit (25% on Selling Price or 33.33% on Cost of Sales)	15	150,000
Selling Price	**60**	**600,000**

Statement of Cost & Profit of Nelito Systems (Cost Sheet) (Output 15,000 Units)

Particulars	**Cost per unit (₹)**	**Total Cost (₹)**
Raw Materials (₹20 x 120% x 15,000) Labour (₹ 12 x 110% x ₹ 4x15,000)	24.00 13.20	360,000 198,000
PRIME COST	37.20	558,000
Add: Factory Overhead (₹ 80,000 x 50% + ₹ 4 x 15,000)	6.67	100,000
WORKS COST	43.87	658,000
Add: Office Overhead (₹ 40,000 x 50% + ₹ 2 x 15,000)	3.33	50,000
COST OF PRODUCTION	47.20	708,000
Add: Selling Expenses (₹ 1 x 80% x 15,000)	0.80	12,000
COST OF SALES	48.00	720,000
Add: Profit (25% on Selling Price or 33.33% on Cost of Sales)	16.00	240,000
Selling Price	**64.00**	**960,000**

4. (a) A contractor commenced the work on a particular contract on 1st April, 2015 he usually closes his books of accounts for the year on 31st December of each year. The following information is revealed from his costing records on 31st December, 2015.

Materials sent to	**₹ 43,000**
Jr. Engineer	**₹ 12,620**
Labour	**₹ 1,00,220**

A machine costing ₹ 30,000 remained in use on site for 1/5th of year. Its working life was estimated at 5 years and scrap value at ₹ 2,000.
A supervisor is paid Rs 2,000 per month and had devoted one half of his time on the contract. All other expenses were ₹14,000 the materials on site were ₹2,500. The contract price was ₹ 4,00,000. On 31st December, 2015 2/3rd of the contract was completed however, the architect gave certificate only for ₹ 2,00,000 and on which 80% was paid.
Prepare Contract Account for Digvijay Ltd. **[8+7]**

(b) Nita Travels, a transport service company is running 4 buses between two towns which are 50 miles apart. Seating capacity of each bus is 40 passengers. The following particulars were obtained from their books for April, 2015.

	₹
Wages of Drivers, Conductors and Cleaners	**2,400**
Salaries of Office and Supervisory Staff	**1,000**
Diesel and oil and other oil	**4,000**
Repairs and Maintenance	**800**
Taxation, Insurance, etc.	**1,600**
Depreciation	**2,600**
Interest and Other Charges	**2,000**
	14,400

Actual passengers carried were 75% of the seating capacity. All the four buses ran on all days of the month. Each bus made one round trip per day. Find out the cost per passenger mile of Nita Travels.

Answer:

4. (a)

Contract Account for Digvijay Ltd.

Particulars	**Amount (₹)**	**Particulars**	**Amount (₹)**
To Material A/c	43,000	**By W.I.P.A/c:** Work certified- 200,000 Work uncertified- 44,365** By Material at site	 244,365 2,500
To Jr. Engineer A/c	12,620		
To Labour A/c	100,220		
To Dep. On Plant A/c [(30,000-2,000)/5] x 1/5	1,120		
To Supervisor (2000 x 9 x ½)	9,000		
To Other expenses A/c	14,000		
To P & L A/c	35,683		
To Reserve c/d	31,222		
	246,865		**2,46,865**

Working notes:
Work uncertified:
For 2/3 rd - 1,77,460
For 1/6 th - ? (2/3 – 1/2 = 1/6)
** [(1,77,460 ÷ 2/3) x 1/6] = 44,365.

(b) Computation of Cost per Passenger Mile of Nita Travels:
Passenger miles = No. of buses x Distance x Round trip x No. of Passengers x No. of days in month x Capacity.
= 4 x 50 x 2 x 40 x 30 x 75%
= 3,60,000 miles
Cost per passenger mile
= 14,400 / 3,60,000
= ₹ 0.04.

5. (a) A manufacturing concern which has adopted standard costing furnishes the following information.
Standard Material for 70 Kg of finished product of 100 Kg
Price of materials Re.1 per kg
Actual Output 2,10,000 kg.
Material used 2,80,000 kg.
Cost of materials ₹ 2,52,000.

Calculate:
(i) Material Usage Variance
(ii) Material Price Variance
(iii) Material cost Variance.

(b) Calculate the total earnings and effective rate of earnings per hour of three operators under Rowan System and Halsey System from the following:
The standard time fixed for producing 1 dozen articles is 50 hours. The rate of wages is ₹ 1 per hour. The actual time taken by three are as follows:
A- 45 hours
B-40 hours
C- 30 hours. **[7+8]**

Answer:

5. (a)

Computation of Required Values

(1) SQSP (₹)	(2) AQSP (₹)	(3) AQAP (₹)
[210,000 x 100/70] x 1	280,000 x 1	
3,00,000	280,000	252,000

Computation of Required Variances:
(i) Material Usage Variance = (1) –(2) = ₹ 20,000 (F)
(ii) Material Price Variance = (2) –(3) = ₹ 28,000(F)
(iii) Material Cost Variance = (1)–(3) = ₹48,000(F)

(b) Computation of Total Earnings of workers under Halsey Plan:

Earnings under Halsey Plan= Hours worked x Rate per Hour + (50% x Time saved x Rate per Hour).

Worker	Earnings	Effective Rate
A	E=(45 X 1) + 50/100 (50=45) X1	Effective Rate=47.5/45=1.06
B	E= (40 X 1) + 50/100 (50-40) x 1 =45	Effective Rate=45/40=1.125
C	E= (30 X1) + 50/100 (50-30) X1 =40	Effective Rate= 40/30=1.33

Computation of Total Earnings of workers under Rowan Plan:
Earnings under Rowan Plan= Hours worked x Rate per Hour + (Time saved/Time allowed x Hours worked x Rate per Hour)

	Earnings	Effective Rate
A	E=(45 x 1) + [50-45/50] 45x1=45+4.5=49.5	Effective Rate=49.5/45=1.1
B	E=(40 X 1) + [50-40/50] 40 X1 =40+8=48	Effective Rate= 48/40=1.2
C	E=(30 x 1) + [50-30/50] 30 x 1=30 +12=42	Effective Rate=42/30=1.4

6. (a) Dreamland Co. Ltd., manufactures and sells four types of products under the brand names of A, B, C and D. The sales Mix in value comprises: 33 1/3%, 41 2/3%, 16 2/3% and 8 1/3% of products A, B, C & D respectively. The total budgeted sales (100% are ₹ 60,000 p.m.)

Variable Costs:
Product A 60% of selling price
Product B 68% of selling price
Product C 80% of selling price
Product D 40% of selling price
Fixed Costs: ₹ 14,700 p.m.

(a) Calculate the break - even - point for the products on overall basis &
(b) Also calculate break-even-point, if the sales mix is changed as follows the total sales per month remaining the same. Mix: A - 25% : B - 40% : C - 30% : D - 5%.

(b) Draw a Material Procurement Budget (Quantitative) from the following information:
Estimated sales of a product 40,000 units. Each unit of the product requires 3 units of material A and 5 units of material B.
Estimated opening balances at the commencement of the next year:

Finished product = 5,000 units
Material A = 12,000 units
B= 20,000 units

Material on order:
Material A = 7,000 units
Material B = 11,000 units

The desirable closing balance at the end of the next year:
Finished product = 7,000 units
Material A = 15,000 units
Material B= 25,000 units

Material on order:
Material A = 8,000 units
Material B= 10,000 units.

Answer:

6. (a)

	Particulars	A (₹)	B (₹)	C(₹)	D (₹)	Total(₹)
I	Sales	20,000	25,000	10,000	5,000	60,000
II	Variable Cost	12,000	17,000	8,000	2,000	39,000
III	Contribution	8,000	8,000	2,000	3,000	21,000
IV	Fixed Cost					14,700
V	Profit					6,300
	P/V Ratio (C/S) x 100	40%	32%	20%	60%	35%

(a) Break even sales= 14,700 / 35% = ₹ 42,000. &

	Particulars	A(₹)	B(₹)	C (₹)	D (₹)	Total (₹)
I	Sales	15,000	24,000	18,000	3,000	60,000
II	Variable Cost	9,000	16,320	14,400	1,200	40,920
III	Contribution	6,000	7,680	3,600	1,800	19,080
IV	Fixed Cost					14,700
V	Profit					4,380
	P/V Ratio (C/S) x 100	40%	32%	20%	60%	31.8%

(b) Break even sales= 14,700 / 31.8% = ₹ 46,226.

(b) Production = Sales + Closing Stock - Opening Stock
= 40,000 + 7,000 - 5,000
= 42,000 units.

Raw Materials Purchase Budget

Particulars	**Product-A**	**Product-B**
Material Required	126,000 (42,000 x 3)	210,000 (42,000 x 5)
Add-Closing Stock	15,000	25,000
Add-Closing Stock on order	8,000	10,000
	1,49,000	2,45,000
Less- Opening Stock	12,000	20,000
Less- Opening Stock on order	7,000	11,000
Raw Material Purchase	1,30,000	2,14,000

7. (a) SV Ltd a multi product company furnishes you the following data relating to the year 2015:

	First Half of the Year (₹)	**Second Half of the Year (₹)**
Sales	**45,000**	**50,000**
Total Cost	**40,000**	**43,000**

Assuming that there is no change in prices and variable cost and that the fixed expenses are incurred equally in the two half tear period, calculate for the Year, 2015.
(i) The P/V Ratio
(ii) Fixed Expenses
(iii) Break-even sales
(iv) Percentage of Margin of Safety.

(b) The Net Profits shown by financial accounts of Sea View Ltd. amounted to ₹ 18,550 whilst the profits disclosed by company's cost account for that period were ₹ 28,660. On reconciling the figures, the following differences were noted:

	₹
Director's fee not charged in cost accounts	**650**
A provision for bad and doubtful debts	**570**
Bank interest (Cr.)	**30**
Income Tax	**8300**

Overheads in the cost accounts were estimated at ₹ 8500. The charges shown by the financial book was ₹ 8320.
Work was started during the year on a new factory and expenditure of ₹ 16,000 was incurred.
Depreciation of 5% was provided in financial accounts.
Prepare a Statement, Reconciling the figures shown by the cost and financial accounts. [6+9]

Answer:

7. (a)

(i) P/V Ratio = [(7000-5000) / (50,000-45,000) x 100 =40%.

(ii) Fixed expenses for first half year = (Sales x PV Ratio) - Profit
= (45,000 x 0.4) -5000
= ₹ 13,000
Fixed expenses for the year = ₹ 13,000+13,000=₹ 26,000.
(iii) Break Even Sales = 26,000 / 40% = ₹ 65,000
(iv) Margin of Safety = (50,000 + 45,000) – 65,000
= ₹ 30,000
Margin of Safety Ratio = [30,000 / (50,000+ 45,000)] x 100=31.58%.

(b) Statement showing Reconciliation of Profit shown by Cost and Financial Accounts

Particulars	Amount (₹)	Amount (₹)
Profit as per Financial Accounts		18,550
Add: Director's Fee Provision for Bad Debts Income Tax Depreciation in Financial Books	650 570 8,300 800	
		28,700
Less: Bank Interest Over recovery of overheads	30 180	210
Profit as per Cost Accounts		28,660

8. Write short notes on any three of the following: [5x3=15]
(a) Difference in Profit under Marginal Costing & Absorption Costing
(b) Replacement Cost
(c) Cost Accounting Standard on Cost of Service Cost Centre
(d) Difference between Merit Rating and Job Evaluation

Answer:

8. (a) Difference in profit under Marginal & Absorption Costing:

- No opening and closing stock: In this case, profit/loss under absorption and marginal costing will be equal.
- When opening stock is equal to closing stock: In this case, profit/loss under two approaches will be equal provided the fixed cost element in both the stocks is same amount.
- When closing stock is more than opening stock: In other words, when production during a period is more than sales, then profit as per absorption approach will be more than that by marginal approach. The reason behind this difference is that a part of fixed overhead included in closing stock value is carried forward to next accounting period.
- When opening stock is more than the closing stock: In other words when production is less than the sales, profit shown by marginal costing will be more than that shown by absorption costing. This is because a part of fixed cost from the preceding period is added to the current year's cost of goods sold in the form of opening stock.

(b) Replacement Cost: Replacement cost is the cost of an asset in the current market for the purpose of replacement. Replacement cost is used for determining the optimum time of replacement of an equipment or machine in consideration of maintenance cost of the existing one and its productive capacity. This is the cost in the current market of replacing an asset. For example, when replacement cost of material or an asset is being considered, it means that the cost that would be incurred if the material or the asset was to be purchased at the current market price and not the cost, at which it was actually purchased earlier, should be take into account.

(c) **Cost Accounting Standard on Cost of Service Cost Centre:**
This standard deals with the principles and methods of determining Cost of Service Cost Centres. This standard deals with the principles and methods of classification, measurement and assignment of Cost of Service Cost Centre, for determination of the cost of product or service, and the presentation and disclosure in Cost Statements.

Objective

The objective of this standard is to bring uniformity and consistency in the principles and methods of determining the Cost of Service Cost Centre with reasonable accuracy.

Scope

The standard should be applied to the preparation & presentation Cost Statements, which require classification, measurement and assignment, of Cost of Service Cost Centres including those requiring attestation. It excludes Utilities and Repairs & Maintenance Services dealt with in CAS-8 and CAS-12 respectively.

(d) **Difference between the Merit Rating and Job Evaluation are as follows**:-

(a) Job Evaluation is the assessment of the relative worth of jobs within a business enterprise and Merit Rating is the assessment of the employees with respect to a job.
(b) Job Evaluation helps in establishing a rational wage and salary structure. On the other hand, Merit Rating helps in fixing fair wages for each worker in terms of his competence and performance.
(c) Job Evaluation brings uniformity in wages and salaries while Merit Rating aims at providing a fair rate of pay for different workers on the basis of their performance.