Paper 8- Cost Accounting

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Full Marks : 100

Time allowed: 3 hours

Section A

Question 1 is compulsory. Answer all questions under each sub division

- 1. Answer the following questions:
- (a) Choose the correct answer from the given four alternatives: [10×1=10]
- (i) When a direct worker is paid on a monthly fixed salary basis. The following is true
 - (a) There is no idle time cost
 - (b) There is no idle time lost
 - (c) Idle time cost is separated and treated as overhead
 - (d) The salary is fully treated as factory overhead.
- (ii) Marginal costing technique follows the following basis of classification
 - (a) Element-wise
 - (b) Function-wise
 - (c) Behavior -wise
 - (d) Identifiably -wise
- (iii) The allotment of whole items of cost of centers or cost unit is called
 - (a) Cost allocation
 - (b) Cost apportionment
 - (c) Overhead absorption
 - (d) None of the above
- (iv) Director Remuneration and expenses form a part of
 - (a) Production overhead
 - (b) Administration overhead
 - (c) Selling overhead
 - (d) Distribution overhead
- (v) Which of the following item is not included in preparation of cost sheet
 - (a) Carriage inward
 - (b) Purchase returns
 - (c) Sales commission
 - (d) Interest Received
- (vi) Normal rate per hour for worker X in a factory is 3.6 Standard time per unit for the worker is one minute. Normal piece rate per unit for the worker is
 - (a) 0.09
 - (b) 0.08
 - (c) 0.06
 - (d) None of the above
- (vii) Selling price of a product is ₹6 per unit, variable cost is ₹4 per unit and fixed cost is 24,000.Then Breakeven point in units will be
 - (a) 4,000

- (b) 6,000
- (c) 12,000
- (d) None of the above
- (viii) Integral accounts eliminate the necessity of operating
 - (a) Cost Ledger control account
 - (b) Store Ledger control account
 - (c) Overhead adjustment account
 - (d) None of the above
 - (ix) Most of the expenses are direct in:
 - (a) Job Costing
 - (b) Batch Costing
 - (c) Contract Costing
 - (d) None of the above
 - (x) If an organization has all resources it needs for production, then the principal budget factor is most likely to be
 - (a) Non-existing
 - (b) Sales demand
 - (c) Raw materials
 - (d) Labour Supply

(b) Match the statement in Column I with the most appropriate statement in Column II: $[1 \times 5 = 5]$

Column I		Column II		
(i)	Cash inventory	(A)	Based on proportion of time saved to time allowed	
(ii)	Halsey Plan	(B)	Dividend Discount Model	
(iii)	John Bur Williams	(C)	Based on time saved	
(i∨)	Group Bonus Plan	(D)	Waste Reduction Incentive	
(~)	Rowan Plan	(E)	Baumol Model	

(c) State whether the following statements are True' or 'False':

[1x5=5]

[1x5=5]

- (i) Marginal costing is useful long term planning.
- (ii) Opportunity cost is the value of benefit sacrificed in favour of an alternative course of action.
- (iii) Allocation, for overhead implies the identification of overhead cost centers to which they relate.
- (iv) Breakeven point=Profit/Sales
- (v) A budget manual is the summary of all functional budget.

(d) Fill in the blanks suitably:

- (i) Differential cost is the change in the cost due to change in ______ from one level to another.
- (ii) _____ cost are historical costs which are incurred in the past.
- (iii) CAS_____ Stands for cost of service cost centre.
- (iv) The _____ of the CASB will be nominated by the council of The Institute of Cost Accountants of India.
- (v) The term used to charge overheads to cost units is called _____

Answer:1(a)

i.(a)	ii.(C)	iii.(a)	iv.(b)	v.(d)
vi.(c)	vii.(c)	viii.(c)	ix.(c)	x.(c)
(b)				
				<u> </u>
i.(E)	ii.(C)	iii.(B)	iv.(D)	v.(A)
(c)				
i.(F)	ii.(T)	iii.(T)	iv.(F)	∨.(F)
(d)				
i.(Activity)	ii(Sunk)	iii.(13)	iv(.Chairman)	v.(Cost
				allocation)

Section B Answer any five questions out of seven questions

2. (a) From the details given below, calculate:

[9+6=15]

Re-ordering level Maximum level Minimum level Danger level

Re-ordering quantity is to be calculated on the basis of following information:

- (i) Cost of placing a purchase order is ₹ 40
- (ii) Number of units to be purchased during the year is 10,000
- (iii) Purchase price per unit inclusive of transportation cost is ₹ 100
- (iv) Annual cost of storage per units is ₹10
- (v) Details of lead time: Average 10 days, Maximum 15 days, Minimum 6 days. For emergency purchases 4 days
- (vi) Rate of consumption: Average: 15 units per day, Maximum: 20 units per day
- (b) From the following particulars given below compute Machine hour rate for a machine.
 - (i) Cost ₹ 24,000
 - (ii) Scrap value ₹4,000
 - (iii) Estimated Working life 40,000 hours
 - (iv) Estimated cost of repairs and maintenance during the whole life ₹ 2,000
 - (v) Standard charges of the shop for 4 weekly period ₹ 3,000
 - (vi) Working hours in 4 weekly period 100 hours
 - (vii) No. of machines in the shop each of which is liable for equal charge are 30 machines.
 - (viii) Power used per hour 4 units @ 10p. per unit

Answer 2(a)

A=Annual usage =10,000 ,O=Ordering cost per order =₹ 100 , C=Inventory Carrying Cost p.a =10

EOQ = $\sqrt{\frac{2AO}{C}} = \sqrt{\frac{2X10,000X40}{10}} = 283$ units (approx)

(i) Re-Order Level (ROL)=Maximum usage per period x Maximum Re Order period =20 X 15 days =300 units

(ii)Maximum Level=ROL+ROQ-(Min Rate of Consumption X Min Re order Period =300+283-(10 X 6) = 523 units

(iii) Minimum level =ROL - (Average Rate of Consumption X average Re –order Period) =300-(15 X 10)=150 units

(iv)Danger Level =Average Consumption X lead time for emergency Purchases =15 X 4=60 units

(b)Computation of Machine Hour Rate

Particulars			Rate Per hour
Standing Charges	(3,000/(100 X 30)		1.00
Machine Expenses			
Depreciation [(24,000-4,000)/40,000]=0.50			
Repairs	[2,000/40,000]	=0.05	
Power	[4 X .10]	=0.40	0.95
Machine Hour Rate			1.95

3. (a) Cost Management in infrastructure Sector.

[6+9=15]

(b) A transistor manufacturer, who commenced his business on 1st June, 2018 supplies you with the following information and asks you to prepare a statement showing the profit per transistor sold. Wages and materials are to be charged at actual cost, works overhead at 75% of wages and office overhead at 30% of works cost. Number of transistors manufactured and sold during the year was 540. Other particulars:

Materials per set ₹288 Wages per set ₹96 Selling price per set ₹720 If the actual works expenses were ₹ 38,592 and office expenses were ₹ 74,160,

Prepare a Reconciliation Statement.

Answer 3(a)

Cost Management in Infrastructure Sector

To have uniformity and consistency in the treatment of various elements of cost, it is desirable that companies shall lay down a cost accounting policy which shall be adopted for determining the cost of the project. The policy shall cover the following areas:

• Identification of cost centres / cost objects (projects) and cost drivers.

• Accounting for material cost, stores at store yards, employee cost, and other relevant cost components.

•Accounting, allocation and absorption of Overheads

• Accounting for Depreciation / Amortization, Transfer in and transfer out of equipment from the site.

•Accounting for scarps, wastage etc.

• Basis for Inventory Valuation

Methodology for valuation of Inter-Unit / Inter Company and Related Party transactions.
Treatment of abnormal and non-recurring costs including classification of other non cost item.

(b)

Cost Sheet

Particulars	Unit	Total
Material	288.00	155520.00
Wages	96.00	51840.00
Prime Cost	384.00	207360.00
Add: Works Overhead(75 % wages)	72.00	38880.00
Works Cost	456.00	246240.00
Add:Office Overheads (30 % Works Cost)	136.80	73872.00
Total cost	592.80	320112.00
Add: Profit	127.20	68688.00
Sales	720.00	388800.00

4. (a) An advertising agency has received an enquiry for which you are supposed **[8+7=15]** to submit the quotation. Bill of material prepared by the production department for the job states the following requirement of material:

Paper 10 reams @ ₹ 1,800 per ream

Ink and other printing material ₹ 5,000

Binding material & other consumables ₹ 3,000

Some photography is required for the job. The agency does not have a photographer as an employee. It decides to hire one by paying ₹ 10,000 to him. Estimated job card prepared by production department specifies that service of following employees will be required for this job:

Artist (₹ 12,000 per month)	80 hours
Copywriter (₹ 10,000 per month)	75 hours
Client servicing (₹ 9,000 per month)	30 hours

The primary packing material will be required to the tune of ₹ 4,000. Production Overheads 40% of direct cost, while the S & D Overheads are likely to be 25% on Production Cost. The agency expects a profit of 25% on the quoted price. The agency works 25 days in a month and 6 hours a day.

(b) A company produces three joint products in one common process. The three products in one common process. The three products can either be sold at split off point or can be separately processed further after split off point and sold separately. the estimated data for a particular month are as under:

	Product		
	А	В	С
Selling Price at split off point (₹ /kg)	100	90	150
Selling Price at split off point (₹ /kg)	200	190	260
Cost incurred on further processing (₹)	3,50,000	4,00,000	2,00,000
Output in kg	3,500	2,500	2,000

Joint costs incurred up to split off point are 2, 64,000 Such costs are apportioned to three products in the ratio 7:5:4

You are required to:

- (i) Prepare a statement of estimated profit or loss for each product individually and in total for the company for the month if all three products are
 - 1. Sold off at split off point and
 - 2. Further processed.
- (ii) Also advice how profit could be maximized by selectively selling the products individually either at split off point or after further processing.

Answer:4(a)

Statement Showing Total Cost & price	ce to be quote	ed
Items	Amount (₹)	Amount(₹)
Direct material Required:		
Paper(10 X 1,800)	18,000	
Ink & Other printing material	5,000	
Binding material & consumables	3,000	
Primary packing material	4,000	
		30,000
Direct labour spent		
Aritist(12,000/25 X6)	6,400	
Copy Writer[10,000 /(25X6)] x 75	5,000	
Client Servicing [9,000 / (25 X6)] x30	1,800	13,200
Photographer's charges		10,000
Prime Cost		53,200
Factory Overheads applied @ 40 % on Direct Cost		21,280
Production Cost		74,480
S & D overheads applied @25 % on Production Cost		18,620
Total Cost		93,100
Profit (20 % on price i.e 25% on cost)		23,275
Price to be quoted		1,16,375

4(b) (i)

Statement of profit before further processing

		Products		
si.no	Particulars	А	В	С
А	Selling price at split off point(/kg)	100	90	150
В	Quantity sold (kg)	3,500	2,500	2,000
С	Sales Revenue(A X B) (₹)	3,50,000	2,25,000	3,00,000
D	Joint Cost Apportioned on the basis of ratio (7:5:4) (₹)	1,15,500	82,500	66,000
E	Profit/Loss (C-D)(₹)	2,34,500	1,42,500	2,34,000

			Products	
si.no	Particulars	Α	В	С
А	Selling price at split off point(/kg) (₹)	200	190	260
В	Quantity sold (kg)	3,500	2,500	2,000
С	Sales Revenue(A X B) (₹)	7,00,000	4,75,000	5,20,000
	Joint Cost Apportioned on the basis of ratio			
D	(7:5:4) (₹)	1,15,500	82,500	66,000
Е	Further processing cost (₹)	3,50,000	4,00,000	2,00,000
F	Profit/Loss [C-(D+E)] (₹)	2,34,500	-12,500	2,54,000

Statement of profit after further processing

Statement of Incremental Profit/Loss

			Products	
si.no	Particulars	А	В	С
А	Profit/Loss,if sold after further processing (₹)	2,34,500	-12,500	2,54,000
В	Profit/Loss,if sold before further processing(₹)	2,34,500	1,42,500	2,34,000
С	Incremental profit/Loss(A-B) (₹)	Nil	-155,000	20,000

(ii) Advice regarding further processing of products to maximize the profit

Total profit after further processing	4,76,000
Total profit before further processing	6,11,000

Product A & B should be sold without further processing and product C should be sold after furher processing.

Total Profit=6,11,000+20,000= ₹ 6,31,000

Hence this strategy will maximize the profits.

5.(a) The following cost data pertaining to the year 2017-18 have been collected [8+7=15] from the books of XYZ Itd.Orepare a cost sheet indicating the cost of generation of power per unit of KWH. Total unit generated are 15,00,000

	(₹)
Operating labour	19,800
Plant Supervision	6,300
Lubricant & Supplies Repairs &	12,600
Maintenance	25,200
Capital Cost Administrative	1,50,000
Overhead	9,000

Coal consumed per KWH 1.5lbs. and coal delivered to the Power Station is 33.06 per metric tonne.Depreciation rate chargeable is 4% p.a and interest on capital is to be taken at 7%.

[Given: 1 Metric tonne = 2,204.62 lbs]

(b) A contractor commenced the work on a particular contract on 1st April, 2017 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, 2017.

	(₹)
Material sent to site	86,000
Jr Engineer	25,240
Labour	2,00,440

A machine costing ₹60,000 remained in use on site for 1/5th of year. Its working life was estimated at 5 years and scrap value at ₹4,000

A supervisor is paid ₹4,000 per month and had devoted one half of his time on the contract. All other expenses were 28,000 the materials on site were 5,000.

The contract price was 8,00,000. On 31st December, 2017 2/3rd of the contract was completed however, the architect gave certificate only for 4,00,000. On which 80% was paid. Prepare Contract Account.

Answer:5(a)

Statement Showing Cost of Generation of Power(Per KWH)

Particulars	, Amount(₹)
Variable Cost	
Coal (Ref Note 1)	33,740
Operating Labour	19,800
Lubricant & Supplies	12,600
(A)	66,140
Semi Variable cost:	
Repairs & Maintenance (B)	25,200
Standing Charges :	
Plant & Supervision	6,300
Administrative Overhead	9,000
Interest on Capital 7% on 1,50,000	10,500
Depreciation 4% on 1,50,000	6,000
	31,800
Total Cost (D)=(A+B+C)	1,23,140
Unit Generated(KWH)(E)	15,00,000
Cost Per KWH(D/E)	0.0821

Note:1

Coal Consumption = 15,00,000 X 1.5/,204.62=1,020,58

Cost=(1,020.58 X 33.06)= ₹33,740

5(b)Dr. Contract Account				Cr.		
Particulars	Amount ()	iount () Particulars		Particulars Am		Amount()
To,Material A/c	86,000	By,WIP A/c				
To Jr Engineer A/c	25,240	Work certified	4,00,000			
To Labour A/c	2,00,440	Work uncertified	88,730	4,88,730		
To Dep On Plant A/c	2,240	By, Material at site		5,000		
[(60,000-4,000)/5}X1/5						
To,Supervisior (4,000 X9 X1/12)	18,000					
To, Other expenses	28,000					
To P & L A/C	71,366					
To, Reserved c/d	62,444					
	4,99,730			4,93,730		

Dos, The Institute of Cost Accountants of India (Statutory Body under an Act of Parliament)

Working notes: Work uncertified: For 2/3 = 3,54,920 For 1/6 =[(3,54,920 *3/2)X 1/6]=88,730

6.(a) PN Ltd a multi product company furnishes you the following data relating **[8+7=15]** to the year 2017

	First half of the year (₹)	Second half of the year (₹)
Sales	90,000	1,00,000
Total Cost	80,000	86,000

Assuming that there is no change in price and variable cost and that the fixed expenses are incurred equally in the two half year period, calculate for the year, 2015.

(i) P/V ratio (iii)Break-Even sales

(ii) Fixed Expenses (iv) Percentage of Margin of Safety

(b) A factory is currently working to 40 % capacity and produces 10,000 units. At 50 % the selling price falls by 2%, At 90 % capacity the selling price falls by 6% accompanied by similar fall in prices of raw material. Estimate the profit of the company at 50% and 90 % capacity of production.

The cost of presentMaterial₹20Labour₹6Overheads₹10(60 % fixed)The selling price per unit is ₹40 per unit

Answer:6(a)

 (i) P/V ratio =Change in contribution/Change in sales =[(14,000 -10,000)/10,000] X 100 =40 %
 (ii) Fixed expenses for first half year = (Sales X P/v ratio)- Profit =(90,000 X 0.4) - 10,000= ₹ 26,000

Fixed Expenses for the year =26,000 X 2 = ₹ 52,000

(iii) Break Even Sales = 52,000 /40% = ₹ 1,30,000

(iv) Margin of Safety = (1,00,000 + 90,000)-1,30,000 = ₹ 60,000 Margin of Safety ratio=[60,000/(1,00,000 + 90,000) X 100 =31.58 %

6(b)	Statement Showing computation of profit at 50 % and 90 % capacity as well as at				
current capacity					

		40%		50%		90%	
SI No	Particulars	Unit(₹)	Total(₹)	Unit(₹)	Total(₹)	Unit(₹)	Total(₹)
i	Selling Price	40.000	4,00,000	38.800	4,85,000	38.000	8,55,000
	Variable Cost						
	Material	20.000	2,00,000	20.000	2,50,000	20.000	4,50,000
ii	Labour	6.000	60,000	6.000	75,000	6.000	1,35,000
	Variable OH	4.000	40,000	4.000	50,000	4.000	90,000
	Total	30.000	3,00,000	30.000	3,75,000	30.000	6,75,000
iii	Contribution (i-ii)	10.000	1,00,000	8.800	1,10,000	8.000	1,80,000
iv	Fixed Cost	6.000	60,000	4.800	60,000	2.667	60,000
V	Profit	4.000	40,000	4.000	50,000	5.333	1,20,000

	Quantity(Kg)	Unit Rate(₹)	Total(₹)
Standard			
Material X	20	4	80
Material Y	40	6	240
Material Z	40	12	480
Actual			
Material X	10	6	60
Material Y	20	12	240
Material Z	30	10	300

7.(a) From the following information, Calculate Mix, Price and Usage Variance [8+7=15]

(b) The standard set for material consumption was 1000kg @ 4.50 per kg.

In a cost period:

Opening Stock was 1000 kg @ 4.50 per kg.

Purchases made 5000 kg @4.30 per kg.

Consumption 1100 kg.

Calculate: a) Usage b) Price Variance

- (i) When variance is calculated at point of purchase
- (ii) When variance is calculated at point of issue on FIFO Basis
- (iii) When variance is calculated at point of issue on LIFO Basis

Answer 7(a)

Computation of Required Values

Material	(1) SQSP(₹)	(2) RSQP(₹)	(3) AQSP(₹)	(4) AQAP(₹)
Х	20 X 4 =80	12 X4=48	10 X 4= 40	10 x 6 =60
Y	40 x 6 =240	24 X6 =144	20 X 6= 120	20 X 12=240
Z	40 x12 =480	24X 12 =288	30 X 12=360	30 X 10=300
Total	800	480	520	600

RSQ for X =20/100 X 60 =12

 $Y = 40/100 \times 60 = 24$

Z= 40/100 X 60 = 24

Where (1) SQSP=Standard Cost Of Standard Material = ₹800

- (2) RSQP=Revised Standard Cost of Material =₹480
- (3) AQSP=Standard Cost of Actual Material=₹520
- (4) AQAP=Actual Cost of Material = ₹600

Computation of Required Variances:

(a) Material Sub Usage Variance= (1)-(2) =800-480=320(F)

- (b) Material Mix Variance= (2)-(3) =480-520=30(A)
- (c) Material Usage Variance= (1)-(3) =800-520=280(F)
- (d)Material Price Variance = (3)-(4) =520-600=80(A)
- (e)Material Cost Variance= (1)-(4) =800-600=200(F)

(b)

i)Computation of Material Usage Variance Material Usage Variance = SQSP-AQSP =SP(SQ - AQ) =4.50(1000-1100)=450(A) b)Computation of Price Variance:

i)When Variance is calculated of the point of purchase; Price Variance =AQSP- AQAP =(1,100 X 4.50)-(1,100 X 4.30) =220(F)

ii) When Variance is calculated of the point of issue on FIFO basis: Price Variance = AQSP-AQAP =(1,100 X 4.50)-[(1,000 X 4.50)+(100 X 4.30)]=20(F)

 iii) When Varaince is calculated at the point of the issue on LIFO basis Price Variance=AQSP-AQAP =(1,100X 4.5)-(1,100 X 4.30)=220(F)

8. Write short notes on any three of the following:

[5X3=15]

- (a) Difference in profit under Marginal Costing & Absorption;
- (b) List of three items included and two items excluded under the Cost Accounting Standards for Direct Expenses;
- (c) Replacement Cost;
- (d) How would you treat overtime in cost records as per CAS-7.

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) Items included under CAS 10:

Any expense directly related to a cost centre or cost object, not being material or labour.

Cost of patents, royalty payments

Hire charges of special machinery or plant

Cost of special patterns, designs or tools.

Experimental costs and expenditure in connection with models and pilot schemes

Architects, surveyors and other consultants' fees

Travelling expenses to sites

Inward charges and freight charges on special material

Exclusions:

A direct expense which cannot be economically traced to the cost object or cost unit. Portion unamortized out of a lump sum, to be amortized later over its utility period.

Finance cost incurred in connection with any self generated or procured resources shall not form part of the direct expenses

Any subsidy, grant or incentive or any amount received or receivable with respect to any direct expense shall be reduced

Penalties/damages paid to statutory authorities shall not form part of the direct expenses.

(c) 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.

(d) Treatment of overtime in Cost Records :As per CAS-7, Overtime Premium shall be assigned directly to the cost object or treated as overheads depending on the economic feasibility and specific circumstances requiring such overtime.

When overtime is worked due to exigencies or urgencies of the work, the basic/normal payment is treated as Direct Labour Cost and charged to Production or cost unit on which the worker is employed. Whereas the amount of premium (extra amount) is treated as overhead.

If overtime is spent at the request of the customer, then the entire amount (including over time premium) is treated as direct wages and should be charged to the job.

When the overtime is worked due to lack of capacity as general policy of the company then the total amount paid is treated as direct wages which is computed at the estimated rate based on the figures of the previous years.

Overtime worked on account of the abnormal conditions such as flood, earthquake, etc., should not be charged to cost, but to Costing Profit and Loss Account if integrated accounts are maintained.

It will thus be seen that overtime involves payment of increased wages and should be resorted to only when extremely essential.