(GI-7, VI-VDI-SI-3)

DATE: 31.01.2022 **MAXIMUM MARKS: 100** **TIMING: 3¼ Hours**

PAPER : COSTING

Answer to questions are to be given only in English except in the case of candidates who have opted for Hindi Medium. If a candidate who has not opted for Hindi Medium. His/her answer in Hindi will not be valued.

Question No. 1 is compulsory.

Candidates are also required to answer any Four questions from the remaining Five Questions.

In case, any candidate answers extra question(s)/sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.

Wherever necessary, suitable assumptions may be made and disclosed by way of note.

Question 1:

(a) A Ltd. produces a product 'X' using a raw material 'D'. To produce one unit of X, 4 kg of D is required. As per the sales forecast conducted by the company, it will be able to sale 20,000 units of X in the coming year.

The following are the information related to the raw material D:

(i) The Re-order quantity is 400 kg. less than the Economic Order Quantity (EOQ).
(ii) Maximum consumption per day is 40 kg. more than the average consumption per day.
(iii) There is an opening stock of 2,000 kg.
(iv) Time required to get the raw materials from the suppliers is 4 to 8 days.
(v) The purchase price is Rs. 250 per kg.

There is an opening stock of 1,800 units of the finished product X.

The carrying cost of inventory is 14% p.a.

To place an order company has to incur Rs. 1,340 on paper and documentation work. From the above information find out the followings in relation to raw material D:

(a) Re-order Quantity
(b) Maximum Stock level
(c) Minimum Stock level
(d) Calculate the impact on the profitability of the company by not ordering the EOQ.

[Take 300 days for a year]

(5 Marks)

(b) The following figures are related to KRB Limited for the year ended 31st March, 2020:

- Sales 43,200 units @ Rs. 150 per unit
- P/V ratio is 20% and
- Break-even point is 25% of Sales

Calculate:

(i) Fixed cost for the year
(ii) Profit earned for the year
(iii) Margin of safety (in units) for the year
(iv) No. of units to be sold to earn a profit of Rs. 12,00,000 for the year.

(5 Marks)

(c) Following information is available for the first and second quarter of the year 2013-14 of ABC Limited:

	Production (in units)	**Semi-variable cost (Rs.)**
Quarter I	36,000	2,80,000
Quarter II	42,000	3,10,000

You are required to segregate the semi-variable cost and calculate :
(a) Variable cost per unit; and
(b) Total fixed cost.

(5 Marks)

(d) A machine was purchased from a manufacturer who claimed that his machine could produce 36.5 tonnes in a year consisting of 365 days. Holidays, break-down, etc., were normally allowed in the factory for 65 days. Sales were expected to be 25 tonnes during the year and the plant actually produced 25.2 tonnes during the year. You are required to state the following figures:
(a) Rated Capacity.
(b) Practical Capacity.
(c) Normal Capacity.
(d) Actual Capacity.

(5 Marks)

Question 2:

(a) Family Store wants information about the profitability of individual product lines: Soft drinks, Fresh produce and Packaged food. Family store provides the following data for the year 2019-20 for each product line:

	Soft drinks	**Fresh produce**	**Packaged food**
Revenues	Rs. 39,67,500	Rs. 1,05,03,000	Rs. 60,49,500
Cost of goods sold	Rs. 30,00,000	Rs. 75,00,000	Rs. 45,00,000
Cost of bottles returned	Rs. 60,000	Rs. 0	Rs. 0
Number of purchase orders placed	360	840	360
Number of deliveries received	300	2,190	660
Hours of shelf-stocking time	540	5,400	2,700
Items sold	1,26,000	11,04,000	3,06,000

Family store also provides the following information for the year 2019-20:

Activity	**Description of activity**	**Total Cost**	**Cost-allocation base**
Bottles returns	Returning of empty bottles	Rs. 60,000	Direct tracing to soft drink line
Ordering	Placing of orders for purchases	Rs. 7,80,000	1,560 purchase orders
Delivery	Physical delivery and receipt of goods	Rs. 12,60,000	3,150 deliveries
Shelf stocking	Stocking of goods on store shelves and on going restocking	Rs. 8,64,000	8,640 hours of shelf-stocking time
Customer Support	Assistance provided to customers including check-out	Rs. 15,36,000	15,36,000 items sold

Required:
(i) Family store currently allocates support cost (all cost other than cost of goods sold) to product lines on the basis of cost of goods sold of each product line. CALCULATE the operating income and operating income as a % of revenues for each product line.
(ii) If Family Store allocates support costs (all costs other than cost of goods sold) to product lines using and activity-based costing system, CALCULATE the operating income and operating income as a % of revenues for each product line.

(10 Marks)

(b) A shop floor supervisor of a small factory presented the following cost for Job No. 303, to determine the selling price.

	Per unit (Rs.)
Materials	70
Direct wages 18 hours @ Rs. 2.50 (Deptt. X 8 hours; Deptt. Y 6 hours; Deptt. Z 4 hrs)	45

Chargeable expenses	5
	120
Add : 33-1/3 % for expenses cost	40
	160

Analysis of the Profit/Loss Account
(For the year 20X2)

		(Rs.)		(Rs.)
Materials used		1,50,000	Sales less returns	2,50,000
Direct wages :				
Deptt. X	10,000			
Deptt. Y	12,000			
Deptt. Z	8,000	30,000		
Special stores items		4,000		
Overheads :				
Deptt. X	5,000			
Deptt. Y	9,000			
Deptt. Z	2,000	16,000		
Works cost		2,00,000		
Gross profit c/d		50,000		
		2,50,000		2,50,000
Selling expenses		20,000	Gross profit b/d	50,000
Net profit		30,000		
		50,000		50,000

It is also noted that average hourly rates for the three Departments X, Y and Z are similar.

You are required to :
(i) Draw up a job cost sheet.
(ii) Calculate the entire revised cost using 20X2 actual figures as basis.
(iii) Add 20% to total cost to determine selling price.

(10 Marks)

Question 3:

(a) The following data relates to manufacturing of a standard product during the month of March, 2021:

Particulars	Amount (in Rs.)
Stock of Raw material as on 01-03-2021	80,000
Work in Progress as on 01-03-2021	50,000
Purchase of Raw material	2,00,000
Carriage Inwards	20,000
Direct Wages	1,20,000
Cost of special drawing	30,000
Hire charges paid for Plant	24,000
Return of Raw Material	40,000
Carriage on return	6,000
Expenses for participation in Industrial exhibition	8,000
Legal charges	2,500
Salary to office staff	25,000
Maintenance of office building	2,000
Depreciation on Delivery van	6,000
Warehousing charges	1,500
Stock of Raw material as on 31-03-2021	30,000
Stock of Work in Progress as on 31-03-2021	24,000

- Store overheads on materials are 10% of material consumed.
- Factory overheads are 20% of the Prime cost.
- 10% of the output was rejected and a sum of Rs. 5,000 was realized on sale of scrap.
- 10% of the finished product was found to be defective and the defective products were rectified at an additional expenditure which is equivalent to 20% of proportionate direct wages.
- The total output was 8000 units during the month.

You are required to prepare a Cost Sheet for the above period showing the:

(i) Cost of Raw Material consumed.
(ii) Prime Cost
(iii) Work Cost
(iv) Cost of Production
(v) Cost of Sales

(10 Marks)

(b) Jigyasa Ltd. is drawing a production plan for its two products Minimax (MM) and Heavyhigh (HH) for the year 2013-14. The company's policy is to hold closing stock of finished goods at 25% of the anticipated volume of sales of the succeeding month. The following are the estimated data for two products:

	Minimax (MM)	**Heavyhigh (HH)**
Budgeted Production units	1,80,000	1,20,000
	(Rs.)	(Rs.)
Direct material cost per unit	220	280
Direct labour cost per unit	130	120
Manufacturing overhead	4,00,000	5,00,000

The estimated units to be sold in the first four months of the year 2013-14 are as under

	April	**May**	**June**	**July**
Minimax	8,000	10,000	12,000	16,000
Heavyhigh	6,000	8,000	9,000	14,000

Prepare production budget for the first quarter in monthwise.

(10 Marks)

Question 4:

(a) LM Limited produces a product 'SX4' which is sold in a 10 Kg. packet. The standard costcard per packet of 'SX4' is as follows:

	(Rs.)
Direct materials 10 kg @ Rs. 90 per kg	900
Direct labour 8 hours @ Rs. 80 per hour	640
Variable Overhead 8 hours @ Rs. 20 per hour	160
Fixed Overhead	250
	1,950

Budgeted output for a quarter of a year was 10,000 Kg. Actual output is 9,000 Kg. Actual costs for this quarter are as follows:

	(Rs.)
Direct Materials 8,900 Kg @ Rs. 92 per Kg.	8,18,800
Direct Labour 7,000 hours @ Rs. 84 per hour	5,88,000
Variable Overhead incurred	1,40,000
Fixed Overhead incurred	2,60,000

You are required to CALCULATE:

(i) Material Usage Variance
(ii) Material Price Variance
(iii) Material Cost Variance

(iv) Labour Efficiency Variance
(v) Labour Rate Variance
(vi) Labour Cost Variance
(vii) Variable Overhead Cost Variance
(viii) Fixed Overhead Cost Variance

(10 Marks)

(b) Mr. PS owns a bus which runs according to the following schedule:

(i) Delhi to Hisar and back, the same day

Distance covered:	160 km. one way
Number of days run each month:	9
Seating capacity occupied	90%.

(ii) Delhi to Aligarh and back, the same day

Distance covered:	160 km. one way
Number of days run each month:	12
Seating capacity occupied	95%

(iii) Delhi to Alwar and back, the same day

Distance covered:	170 km. one way
Number of days run each month:	6
Seating capacity occupied	100%

(iv) Following are the other details:

Cost of the bus	Rs. 15,00,000
Salary of the Driver	Rs. 30,000 p.m.
Salary of the Conductor	Rs. 26,000 p.m.
Salary of the part-time Accountant	Rs. 7,000 p.m.
Insurance of the bus	Rs. 6,000 p.a.
Diesel consumption 5 km. per litre at	Rs. 90 per litre
Road tax	Rs. 21,912 p.a.
Lubricant oil	Rs. 30 per 100 km.
Permit fee	Rs. 500 p.m.
Repairs and maintenance	Rs. 5,000 p.m.
Depreciation of the bus	@ 30% p.a.
Seating capacity of the bus	50 persons

Passenger tax is 20% of the total takings.
CALCULATE the bus fare to be charged from each passenger to earn a profit of 30% on total takings.
The fares are to be indicated per passenger for the journeys: (i) Delhi to Hisar (ii) Delhi to Aligarh and (iii) Delhi to Alwar.

(10 Marks)

Question 5:

(a) A factory can produce 1,80,000 units per annum at its 60% capacity. The estimated costs of production are as under:

Direct material	Rs. 50 per unit
Direct employee cost	Rs. 16 per unit

Indirect expenses:	
- Fixed	Rs. 32,50,000 per annum
- Variable	Rs. 10 per unit
- Semi-variable	Rs. 40,000 per month up to 50% capacity and Rs. 15,000 for every 20% increase in the capacity or part thereof.

If production program of the factory is as indicated below and the management desires to ensure a profit of Rs. 10,00,000 for the year, DETERMINE the average selling price at which each unit should be quoted:
First three months of the year- 50% of capacity;
Remaining nine months of the year- 75% of capacity.

(10 Marks)

(b) M J Pvt. Ltd. produces a product "SKY" which passes through two processes, viz. Process-A and Process-B. The details for the year ending 31st March, 2014 are as follows:

	Process A	**Process - B**
40,000 Units introduced at a cost of	Rs. 3,60,000	-
Material Consumed	Rs. 2,42,000	2,25,000
Direct Wages	Rs. 2,58,000	1,90,000
Manufacturing Expenses	Rs. 1,96,000	1,23,720
Output in Units	37,000	27,000
Normal Wastage of Input	5%	10%
Scrap Value (per unit)	Rs. 15	20
Selling Price (per unit)	Rs. 37	61

Additional Information:
(a) 80% of the output of Process-A, was passed on to the next process and the balance was sold. The entire output of Process- B was sold.
(b) Indirect expenses for the year was Rs. 4,48,080.
(c) It is assumed that Process-A and Process-B are not responsibility centre.
Required:
(i) Prepare Process-A and Process-B Account.
(ii) Prepare Profit & Loss Account showing the net profit I net loss for the year.

(10 Marks)

Question 6:

(a) State how the following items are treated in arriving at the value of cost of material purchased:
(i) Detention Charges/Fines
(ii) Demurrage
(iii) Cost of Returnable containers
(iv) Central Goods and Service Tax (CGST)
(v) Shortage due to abnormal reasons.

(5 Marks)

(b) Mention the Cost Unit of the following Industries:
(i) Electricity
(ii) Automobile
(iii) Cement
(iv) Steel
(v) Gas
(vi) Brick Making
(vii) Coal Mining
(viii) Engineering
(ix) Professional Services
(x) Hospital

(5 Marks)

(c) State the method of costing that would be most suitable for:
(i) Oil Refinery
(ii) Interior Decoration
(iii) Airlines Company

(iv) Advertising
(v) Car Assembly

(5 Marks)

(d) Define Zero Base Budgeting and mention its various stages.

(5 Marks)

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