(GI-1, GI-2+4, GI-3, GI-5+6 & VDI-1, VI-1, SI-1)
DATE: 14.07.2020 **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) M Ltd. has an annual fixed cost of Rs. 98,50,000. In the year 20X8-X9, sales amounted to Rs. 7,80,60,000 as compared to Rs. 5,93,10,000 in the preceding year 20X7-X8. Profit in the year 20X8-X9 is Rs. 37,50,000 more than that in 20X7-X8.

Required:

(i) CALCULATE Break-even sales of the company;

(ii) DETERMINE profit/ loss on a forecasted sales volume of Rs. 8,20,00,000.

(iii) If there is a reduction in selling price by 10% in the financial year 20X8-X9 and company desires to earn the same amount of profit as in 20X7-X8, COMPUTE the required sales amount?

(5 Marks)

(b) Arnav Motors Ltd. manufactures pistons used in car engines. As per the study conducted by the Auto Parts Manufacturers Association, there will be a demand of 80 million pistons in the coming year. Arnav Motors Ltd. is expected to have a market share of 1.15% of the total market demand of the pistons in the coming year. It is estimated that it costs Rs. 1.50 as inventory holding cost per piston per month and that the set-up cost per run of piston manufacture is Rs. 3,500.

(i) DETERMINE the optimum run size for piston manufacturing?

(ii) Assuming that the company has a policy of manufacturing 40,000 pistons per run, CALCULATE how much extra costs the company would be incurring as compared to the optimum run suggested in (i) above?

(5 Marks)

(c) Following details are provided by M/s ZIA Private Limited for the quarter ending 30 September, 2018:

(i)	Direct expenses	Rs.	1,80,000
(ii)	Direct wages being 175% of factory overheads	Rs.	2,57,250
(iii)	Cost of goods sold	Rs.	18,75,000
(iv)	Selling & distribution overheads	Rs.	60,000
(v)	Sales	Rs.	22,10,000
(vi)	Administration overheads are 10% of factory overheads		
	(Related with production)		

Stock details as per Stock Register:

Particulars	30.06.2018 (Rs.)	30.09.2018 (Rs.)
Raw material	2,45,600	2,08,000
Work-in-progress	1,70,800	1,90,000
Finished goods	3,10,000	2,75,000

You are required to prepare a cost sheet showing:
(i) Raw material consumed
(ii) Prime cost
(iii) Factory cost
(iv) Cost of goods sold
(v) Cost of sales and profit

(5 Marks)

(d) A company planned to produce 2,000 units of a product in a week of 40 hours by employing 65 skilled workers. Other relevant information are as follows:

- Standard wages rate : Rs. 45 per hour
- Actual production : 1800 units
- Actual number of worker employed: 50 workers in a week of 40 hours
- Actual wages rate : Rs. 50 per hour
- Abnormal time loss due to machinery breakdown: 100 hours. You are required to calculate:
  (i) Labour cost, rate, idle time and efficiency variances.
  (ii) Reconcile the variances.

(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 20X7-X8 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 20X7-X8:

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) The Union Ltd. has the following account balances and distribution of direct charges on 31st March, 2019.

	Total	Production Depts.		Service Depts.	
		Machine Shop	Packing	General Plant	Stores
Allocated Overheads:	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)
Indirect labour	29,000	8,000	6,000	4,000	11,000
Maintenance Material	9,900	3,400	1,600	2,100	2,800
Misc. supplies	5,900	1,500	2,900	900	600
Supervisor's salary	16,000	--	--	16,000	--
Cost & payroll salary	80,000	--	--	80,000	--

Overheads to be apportioned:	
Power	78,000
Rent	72,000
Fuel and Heat	60,000
Insurance	12,000
Taxes	8,400
Depreciation	1,20,000

The following data were compiled by means of the factory survey made in the previous year:

	Floor Space	Radiator Section	No. of employees	Investment	H.P. hours
Machine Shop	2,000 Sq. ft.	45	20	8,00,000	3,500
Packing	800 Sq. ft.	90	12	2,40,000	500
General Plant	400 Sq. ft.	30	4	80,000	-
Stores &maintenance	1,600 Sq. ft.	60	8	1,60,000	1,000

Expenses charged to the stores departments are to be distributed to the other departments by the following percentages:
Machine shop 50%; Packing 20%; General Plant 30%;
General Plant overheads is distributed on the basis of number of employees.

(a) PREPARE an overhead distribution statement with supporting schedules to show computations and basis of distribution.

(b) DETERMINE the service department distribution by simultaneous equation method.

(10 Marks)

Question 3:

(a) Star Ltd. manufactures chemical solutions for the food processing industry. The manufacturing takes place in a number of processes and the company uses FIFO method to value work-in-process and finished goods. At the end of the last month, a fire occurred in the factory and destroyed some of paper containing records of the process operations for the month.

Star Ltd. needs your help to prepare the process accounts for the month during which the fire occurred. You have been able to gather some information about the month's operating activities but some of the information could not be retrieved due to the damage. The following information was salvaged:

- Opening work-in-process at the beginning of the month was 800 litres, 70% complete for labour and 60% complete for overheads. Opening work-in-process was valued at Rs. 26,640.
- Closing work-in-process at the end of the month was 160 litres, 30% complete for labour and 20% complete for overheads.
- Normal loss is 10% of input and total losses during the month were 1,800 litres partly due to the fire damage.
- Output sent to finished goods warehouse was 4,200 litres.
- Losses have a scrap value of Rs. 15 per litre.

- All raw materials are added at the commencement of the process.
- The cost per equivalent unit (litre) is Rs. 39 for the month made up as follows:

	(Rs.)
Raw Material	23
Labour	7
Overheads	9
	39

Required:

(i) CALCULATE the quantity (in litres) of raw material inputs during the month.

(ii) CALCULATE the quantity (in litres) of normal loss expected from the process and the quantity (in litres) of abnormal loss / gain experienced in the month.

(iii) CALCULATE the values of raw material, labour and overheads added to the process during the month.

(iv) PREPARE the process account for the month.

(10 Marks)

(b) A transport company has a fleet of three trucks of 10 tonnes capacity each plying in different directions for transport of customer's goods. The trucks run loaded with goods and return empty. The distance travelled, number of trips made and the load carried per day by each truck are as under:

Truck No.	One way Distance Km	No. of trips per day	Load carried per trip / day tonnes
1	16	4	6
2	40	2	9
3	30	3	12

The analysis of maintenance cost and the total distance travelled during the last two years is as under

Year	Total distance travelled	Maintenance Cost (Rs.)
1	1,60,200	46,050
2	1,56,700	45,175

The following are the details of expenses for the year under review:

Diesel	Rs. 65 per litre. Each litre gives 4 km per litre of diesel on an average.
Driver's salary	Rs. 24,000 per month
Licence and taxes	Rs. 25,000 per annum per truck
Insurance	Rs. 45,000 per annum for all the three vehicles
Purchase Price per truck	Rs. 30,00,000, Life 10 years. Scrap value at the end of life is Rs. 1,00,000.
Oil and sundries	Rs. 250 per 100 km run.
General Overhead	Rs. 1,15,600 per annum

The vehicles operate 24 days per month on an average. On the basis of commercial tone-km, you are required to:

(i) PREPARE an Annual Cost Statement covering the fleet of three vehicles.

(ii) CALCULATE the cost per km. run.

(iii) DETERMINE the freight rate per tonne km. to yield a profit of 10% on freight.

(10 Marks)

Question 4:

(a) Inorganic Chemicals purchases salt and processes it into more refined products such as Caustic Soda, Chlorine and PVC. In the month of July, Inorganic Chemicals purchased Salt for Rs. 40,000. Conversion of Rs. 60,000 were incurred upto the split off point, at which time two sealable products were produced. Chlorine can be further processed into PVC.

The July production and sales information is as follows:

	Production (in ton)	Sales Quantity (in ton)	Selling price per ton (Rs.)
Caustic Soda	1,200	1,200	50
Chlorine	800	—	—
PVC	500	500	200

All 800 tons of Chlorine were further processed, at an incremental cost of Rs. 20,000 to yield 500 tons of PVC. There was no beginning or ending inventories of Caustic Soda, Chlorine or PVC in July.

There is active market for Chlorine. Inorganic Chemicals could have sold all its July production of Chlorine at Rs. 75 per ton.

Required :

(1) To calculate how joint cost of Rs. 1,00,000 would be apportioned between Caustic Soda and Chlorine under each of following methods:
   (a) sales value at split- off point ;
   (b) physical unit method, and
   (c) estimated net realisable value.

(2) Lifetime Swimming Pool Products offers to purchase 800 tons of Chlorine in August at Rs. 75 per ton. This sale of Chlorine would mean that no PVC would be produced in August. How the acceptance of this offer for the month of August would affect operating income ?

(10 Marks)

(b) M/s. SD Private Limited commenced a contract on 1st July 2017 and the company closes its account for the year on 31st March every year. The following information relates to the contract as on 31st March 2018.

(i)	Material issued	Rs. 9,48,000
(ii)	Direct wages	Rs. 4,57,200
(iii)	Prepaid direct wages as on 31.3.2018	Rs. 1,08,000
(iv)	Administration charges	Rs. 7,20,000

(v) A supervisor, who is paid Rs. 50,000 per month, has devoted two-third of his time to this contract

(vi) A plant costing Rs. 7,85,270 has been on the site for 185 days, its working life is estimated at 9 years and its scrap value is Rs. 75,000

The contract price is Rs. 42 lakhs. On 31st March 2018 two-third of the contract was completed. The Architect issued certificate covering 50% of the contract price and the contractor had been paid Rs. 15.75 lakhs on account.

Assuming 365 days in a year, you are required to:

(i) Prepare a Contract Account showing work cost

(ii) Calculate Notional Profit or Loss as on 31st March 2018

(10 Marks)

Question 5:

(a) AB manufacturing Company manufactures two products A and B. Both Products use a common Raw Material "C". The Raw Material "C" is purchased at the rate of Rs. 45 per kg. from the Market. The Company has made estimates for the year ended 31st March ,2018 (the budget period) as under:

	Products	
	A	**B**
Sales in Units	36,000	16,700
Finished Goods Stock Increase by year-end (in Units)	860	400
Post-production Rejection Rate (%)	3	5
Material "C" per completed Unit, net of wastage	4 kg	5 kg
Material "C" wastage in %	5	4

Additional information available is as under:

- Usage of Raw Material "C" is expected to be at a constant rate over the period.
- Annual cost of holding one unit of Raw Material "C" in Stock is 9% of the Material Cost.
- The cost of placing an order is Rs. 250 per order. You are required to:
  (i) Prepare Functional Budgets for the year ended 31st March, 2018 under the following categories:
    (a) Production Budget for Products A and B in Units.
    (b) Purchase Budget for Raw Material "C" in kg and value.
  (ii) Calculate the Economic Order Quantity (EOQ) in kg for Raw Material "C".

(8 Marks)

(b) R Limited showed a net loss of Rs. 35,400 as per their cost accounts for the year ended 31st March, 20X8. However, the financial accounts disclosed a net profit of Rs. 67,800 for the same period. The following information were revealed as a result of scrutiny of the figures of cost accounts and financial accounts:

		(Rs.)	(Rs.)
(i)	Administrative overhead under recovered	25,500	
(ii)	Factory overhead over recovered		1,35,000
(iii)	Depreciation under charged in Cost Accounts	26,000	
(iv)	Dividend received		20,000
(v)	Loss due to obsolescence charged in Financial Accounts	16,800	
(vi)	Income tax provided	43,600	
(vii)	Bank interest credited in Financial Accounts	13,600	
(viii)	Value of opening stock:		
	- In Cost Accounts	1,65,000	
	- In Financial Accounts	1,45,000	
(ix)	Value of closing stock:		
	- In Cost Accounts	1,25,500	
	- In Financial Accounts	1,32,000	
(x)	Goodwill written-off in Financial Accounts	25,000	
(xi)	Notional rent of own premises charged in Cost Accounts	60,000	
(xii)	Provision for doubtful debts in Financial Accounts	15,000	

PREPARE a reconciliation statement by taking costing net loss as base.

(6 Marks)

(c) From the following figures, CALCULATE cost of production and profit for the month of March 2018.

	Amount (Rs.)		Amount (Rs.)
Stock on 1st March, 2018		Purchase of raw materials	28,57,000
- Raw materials	6,06,000	Sale of finished goods	1,34,00,000
- Finished goods	3,59,000	Direct wages	37,50,000
Stock on 31st March, 2018		Factory expenses	21,25,000

- Raw materials	7,50,000	Office and administration expenses	10,34,000
- Finished goods	3,09,000	Selling and distribution expenses	7,50,000
Work-in-process:		Sale of scrap	26,000
- On 1st March, 2018	12,56,000		
- On 31st March, 2018	14,22,000		

(6 Marks)

Question 6:

(a) EXPLAIN the difference between controllable & uncontrollable costs?

(5 Marks)

(b) DEFINE cost plus contract? STATE its advantages.

(5 Marks)

(c) "Is reconciliation of cost accounts and financial accounts necessary in case of integrated accounting system?" EXPLAIN.

(5 Marks)

(d) DISCUSS the impact of Information Technology in Cost Accounting.

(5 Marks)

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