(GI-1, GI-2, GI-3, GI-6, VI-1, SI-1, VDI-1)

DATE: 06.09.2021 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) JBL Sisters operates a boutique which works for various fashion houses and retail stores. It has employed 26 workers and pays them on time rate basis. On an average an employee is allowed 8 hours for boutique work on a piece of garment. In the month of December 2020, two workers M and J were given 15 pieces and 21 pieces of garments respectively for boutique work. The following are the details of their work:

	M	J
Work assigned	15 pcs.	21 pcs.
Time taken	100 hours	140 hours

Workers are paid bonus as per Halsey System. The existing rate of wages is Rs. 60 per hour. As per the new wages agreement, the workers will be paid Rs. 72 per hour w.e.f. 1st January 2021. At the end of the month December 2020, the accountant of the company has wrongly calculated wages of these two workers taking Rs. 72 per hour.

Required:

(i) Calculate the loss incurred due to incorrect rate selection.
(ii) Calculate the loss incurred due to incorrect rate selection, had Rowan scheme of bonus payment followed.
(iii) Calculate the loss/ savings if Rowan scheme of bonus payment had followed.
(iv) Discuss the suitability of Rowan scheme of bonus payment for JBL Sisters?

(5 Marks)

(b) A Factory is engaged in the production of chemical Bomex and in the course of its manufacture a by-product Cromex is produced which after further processing has a commercial value. For the month of April 2019 the following are the summarised cost data:

	Joint Expenses (Rs.)	Separate Expenses (Rs.)	
		Bomex	Cromex
Materials	1,00,000	6,000	4,000
Labour	50,000	20,000	18,000
Overheads	30,000	10,000	6,000
Selling Price per unit		100	40
Estimated profit per unit on sale of Cromex			5
Number of units produced		2,000 units	2,000 units

The factory uses net realisable value method for apportionment of joint cost to by-products.
You are required to prepare statements showing :
(i) Joint cost allocable to Cromex
(ii) Product wise and overall profitability of the factory for April 2019.

(5 Marks)

(c) The following data are available in respect of material X for the year ended 31st March, 2021:

	(Rs.)
Opening stock	9,00,000
Purchases during the year	1,70,00,000
Closing stock	11,00,000

(i) CALCULATE:
(a) Inventory turnover ratio, and
(b) The number of days for which the average inventory is held.
(ii) INTERPRET the ratio calculated as above if the industry inventory turnover rate is 10.

(5 Marks)

(d) X Ltd. manufactures two types of pens 'Super Pen' and 'Normal Pen'. The cost data for the year ended 30th September, 2019 is as follows:

	(Rs.)
Direct Materials	8,00,000
Direct Wages	4,48,000
Production Overhead	1,92,000
Total	14,40,000

It is further ascertained that :
(1) Direct materials cost in Super Pen was twice as much of direct material in Normal Pen.
(2) Direct wages for Normal Pen were 60% of those for Super Pen.
(3) Production overhead per unit was at same rate for both the types.
(4) Administration overhead was 200% of direct labour for each.
(5) Selling cost was Rs. 1 per Super pen.
(6) Production and sales during the year were as follow :

Production		**Sales**	
	No. of units		**No. of units**
Super Pen	40,000	Super Pen	36,000
Normal Pen	1,20,000		

(7) Selling price was Rs. 30 per unit for Super Pen.
Prepare a Cost Sheet for 'Super Pen' showing:
(i) Cost per unit and Total Cost
(ii) Profit per unit and Total Profit

(5 Marks)

Question 2:

(a) The following information is available from the cost records of a Company for the month of December, 2020:

(1)	Material consumed	22,000 pieces	Rs. 1,87,000
(2)	Actual wages paid for	5,150 hours	Rs. 51,500
(3)	Fixed Factory overhead incurred		Rs. 92,000
(4)	Fixed Factory overhead budgeted		Rs. 84,000
(5)	Units produced	1,900	
(6)	Standard rates and prices are:		
	Direct material	Rs. 9 per piece	
	Standard input	10 pieces per unit	

	Direct labour rate	Rs. 12 per hour	
	Standard requirement	2.5 hours per unit	
	Overheads	Rs. 16 per labour hour	

You are required to calculate the following variances:

(i) Material price variance
(ii) Material usage variance
(iii) Labour rate variance
(iv) Labour efficiency variance
(v) Fixed overhead expenditure variance
(vi) Fixed overhead efficiency variance
(vii) Fixed overhead capacity variance.

(10 Marks)

(b) A product passes through three processes 'X', 'Y' and 'Z'. The output of process 'X' and 'Y' is transferred to next process at cost plus 20 per cent each on transfer price and the output of process 'Z' is transferred to finished stock at a profit of 25 per cent on transfer price. The following information are available in respect of the year ending 31st March, 2014:

	Process-X	**Process-Y**	**Process-Z**	**Finished Stock**
	(Rs.)	**(Rs.)**	**(Rs.)**	**(Rs.)**
Opening stock	15,000	27,000	40,000	45,000
Material Wages	80,000	65,000	50,000	--
Manufacturing Overheads	1,25,000	1,08,000	92,000	--
Closing stock	96,000	72,000	66,500	--
Inter process profit included in	20,000	32,000	39,000	50,000
Opening stock	NIL	4,000	10,000	20,000

Stock in processes is valued at prime cost. The finished stock is valued at the price at which it is received from process 'Z'. Sales of the finished stock during the period was Rs. 14,00,000.

You are required to prepare:

(i) Process accounts and finished stock account showing profit element at each stage.
(ii) Costing Profit and Loss account
(iii) Show the relevant items in the Balance Sheet.

(10 Marks)

Question 3:

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

(i)	Delhi to Chandigarh and back, the same day.	
	Distance covered:	250 km. one way.
	Number of days run each month :	8
	Seating capacity occupied	90%.
(ii)	Delhi to Agra and back, the same day.	
	Distance covered:	210 km. one way
	Number of days run each month :	10
	Seating capacity occupied	85%
(iii)	Delhi to Jaipur and back, the same day.	
	Distance covered:	270 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. 12,00,000
	Salary of the Driver	Rs. 24,000 p.m.

	Salary of the Conductor	Rs. 21,000 p.m.
	Salary of the part-time Accountant	Rs. 5,000 p.m.
	Insurance of the bus	Rs. 4,800 p.a.
	Diesel consumption 4 km. per litre at	Rs. 56 per litre
	Road tax	Rs. 15,915 p.a.
	Lubricant oil	Rs. 10 per 100 km.
	Permit fee	Rs. 315 p.m.
	Repairs and maintenance	Rs. 1,000 p.m.
	Depreciation of the bus	@ 20% 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 Chandigarh,
(ii) Delhi to Agra and
(iii) Delhi to Jaipur.

(10 Marks)

(b) A company has three production departments (M_1, M_2 and A_1) and three service department, one of which Engineering service department, servicing the M_1 and M_2 only. The relevant information are as follows:

	Product X	**Product Y**
M_1	10 Machine hours	6 Machine hours
M_2	4 Machine hours	14 Machine hours
A_1	14 Direct Labour hours	18 Direct Labour hours

The annual budgeted overhead cost for the year are

	Indirect Wages (Rs.)	**Consumable Supplies (Rs.)**
M_1	46,520	12,600
M_2	41,340	18,200
A_1	16,220	4,200
Stores	8,200	2,800
Engineering Service	5,340	4,200
General Service	7,520	3,200

	(Rs.)	
– Depreciation on Machinery	39,600	
– Insurance of Machinery	7,200	
– Insurance of Building	3,240	(Total building insurance cost for M_1 is one third of annual premium)
– Power	6,480	
– Light	5,400	
– Rent	12,675	(The general service deptt. is located in a building owned by the company. It is valued at Rs.6,000 and is charged into cost at notional value of 8% per annum. This cost is additional to the rent shown above)

The value of issues of materials to the production departments are in the same proportion as shown above for the Consumable supplies.

The following data are also available:

Department	**Book value Machinery (Rs.)**	**Area (Sq. ft.)**	**Effective H.P. hours %**	**Production Direct Labour hour**	**Capacity Machine hour**

M_1	1,20,000	5,000	50	2,00,000	40,000
M_2	90,000	6,000	35	1,50,000	50,000
A_1	30,000	8,000	05	3,00,000	-
Stores	12,000	2,000	-	-	-
Engg. Service	36,000	2,500	10	-	-
General Service	12,000	1,500	-	-	-

Required:

(i) Prepare a overhead analysis sheet, showing the bases of apportionment of overhead to departments.

(ii) Allocate service department overheads to production department ignoring the apportionment of service department costs among service departments.

(iii) Calculate suitable overhead absorption rate for the production departments.

(iv) Calculate the overheads to be absorbed by two products, X and Y.

(10 Marks)

Question 4:

(a) Ares Plumbing and Fitting Ltd. (APFL) deals in plumbing materials and also provides plumbing services to its customers. On 12th August, 2014, APFL received a job order for a students' hostel to supply and fitting of plumbing materials. The work is to be done on the basis of specification provided by the hostel owner. Hostel will be inaugurated on 5th September, 2014 and the work is to be completed by 3rd September, 2014. Following are the details related with the job work:

Direct Materials

APFL uses a weighted average method for the pricing of materials issues.

Opening stock of materials as on 12th August 2014:

- 15mm GI Pipe, 12 units of (15 feet size) @ Rs. 600 each
- 20mm GI Pipe, 10 units of (15 feet size) @ Rs. 660 each
- Other fitting materials, 60 units @ Rs. 26 each
- Stainless Steel Faucet, 6 units @ Rs. 204 each
- Valve, 8 units @ Rs. 404 each

Purchases:

On 16th August 2014:
- 20mm GI Pipe, 30 units of (15 feet size) @ Rs. 610 each
- 10 units of Valve @ Rs. 402 each

On 18th August 2014:
- Other fitting materials, 150 units @ Rs. 28 each
- Stainless Steel Faucet, 15 units @ Rs. 209 each

On 27th August 2014:
- 15mm GI Pipe, 35 units of (15 feet size) @ Rs. 628 each
- 20mm GI Pipe, 20 units of (15 feet size) @ Rs. 660 each
- Valve, 14 units @ Rs. 424 each

Issues for the hostel job:

On 12th August 2014:
- 20mm GI Pipe, 2 units of (15 feet size)
- Other fitting materials, 18 units

On 17th August 2014:
- 15mm GI Pipe, 8 units of (15 feet size)
- Other fitting materials, 30 units

On 28th August 2014:
- 20mm GI Pipe, 2 units of (15 feet size)
- 15mm GI Pipe, 10 units of (15 feet size)
- Other fitting materials, 34 units
- Valve, 6 units

On 30th August:
- Other fitting materials, 60 units
- Stainless Steel Faucet, 15 units

Direct Labour:

Plumber: 180 hours @ Rs. 50 per hour (includes 12 hours overtime)
Helper: 192 hours @ Rs.35 per hour (includes 24 hours overtime)
Overtimes are paid at 1.5 times of the normal wage rate.

Overheads:

Overheads are applied @ Rs. 13 per labour hour.

Pricing policy:

It is company's policy to price all orders based on achieving a profit margin of 25% on sales price.

You are required to

(a) Calculate the total cost of the job.

(b) Calculate the price to be charged from the customer

(10 Marks)

(b) Mr. X has Rs. 2,00,000 investments in his business firm. He wants a 15 per cent return on his money. From an analysis of recent cost figures, he finds that his variable cost of operating is 60 per cent of sales, his fixed costs are Rs. 80,000 per year. Show computations to answer the following questions:

(i) What sales volume must be obtained to break even?

(ii) What sales volume must be obtained to get 15 per cent return on investment?

(iii) Mr. X estimates that even if he closed the doors of his business, he would incur Rs. 25,000 as expenses per year. At what sales would he be better off by locking his business up?

(10 Marks)

Question 5:

(a) Two manufacturing companies A and B are planning to merge. The details are as follows:

	A	B
Capacity utilisation (%)	90	60
Sales (Rs.)	63,00,000	48,00,000
Variable Cost (Rs.)	39,60,000	22,50,000
Fixed Cost (Rs.)	13,00,000	15,00,000

Assuming that the proposal is implemented, calculate:

(i) Break-Even sales of the merged plant and the capacity utilization at that stage.

(ii) Profitability of the merged plant at 80% capacity utilization.

(iii) Sales Turnover of the merged plant to earn a profit of Rs. 60,00,000.

(iv) When the merged plant is working at a capacity to earn a profit of Rs. 60,00,000, what percentage of increase in selling price is required to sustain an increase of 5% in fixed overheads.

(10 Marks)

(b) S Ltd. has prepared budget for the coming year for its two products A and B.

	Product A (Rs.)	Product B (Rs.)
Production & Sales unit	6,000 units	9,000 units
Raw material cost per unit	60.00	42.00
Direct labour cost per unit	30.00	18.00
Variable overhead per unit	12.00	6.00
Fixed overhead per unit	8.00	4.00
Selling price per unit	120.00	78.00

After some marketing efforts, the sales quantity of the Product A & B can be increased by 1,500 units and 500 units respectively but for this purpose the variable overhead and fixed overhead will be increased by 10% and 5% respectively for the both products.

You are required to prepare flexible budget for both the products:

(a) Before marketing efforts

(b) After marketing efforts.

(10 Marks)

Question 6:

(a) Discuss the Escalation Clause in a Contract.

(5 Marks)

(b) State the Method of Costing to be used in the following industries:

(i) Real Estate
(ii) Motor repairing workshop
(iii) Chemical Industry
(iv) Transport service
(v) Assembly of bicycles
(vi) Biscuits manufacturing Industry
(vii) Power supply Companies
(viii) Car manufacturing Industry
(ix) Cement Industry
(x) Printing Press

(5 Marks)

(c) Write short notes on any two of the following?

(i) Conversion cost
(ii) Sunk cost
(iii) Opportunity cost

(5 Marks)

(d) STATE what are the practical application of ABC?

(5 Marks)

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