Roll No.....

Total No. of Questions—7] [Total No. of Printed Pages—8

Time Allowed—3 Hours Maximum Marks—100

LML

Answers 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, answers in Hindi, his answers in Hindi will not be valued.

Question No. **1** is compulsory. Answer any **five** questions from the rest.

Working notes should form part of the answer.

Marks

1. (a) Bloom Ltd. makes 3 products, A, B and C. The following information is available: 12

(Figs. in Rupees per unit)

	A	B	C	
Selling price (peak-season)	550	630	690	
Selling price (off-season)	550	604	690	
Material cost	230	260	290	
Labour (peak-season)	110	120	150	
Labour (off-season)	100	99	149	
Variable production overhead	100	120	130	
Variable selling overhead (only for peak-season)	10	20	15	
Labour hours required for one unit of production	8	11	7	(hours)

Material cost and variable production overheads are the same for the peak-season and off-season. Variable selling overheads are not incurred in the off-season. Fixed costs amount to Rs. 26,780 for each season, of which Rs. 2,000 is towards salary for special technician, incurred only for product B, and Rs. 4,780 is the amount that will be incurred on after-sales warranty and free maintenance of only product C, to match competition.

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Marks

Labour force can be interchangeably used for all the products. During peak-season, there is labour shortage and the maximum labour hours available are 1,617 hours. During off-season, labour is freely available, but demand is limited to 100 units of A, 115 units of B and 135 units of C, with production facility being limited to 215 units for A, B and C put together.

You are required to :

(i) Advise the company about the best product mix during peak-season for maximum profit.

(ii) What will be the maximum profit for the off-season ?

(b) The cost matrix giving selling costs per unit of a product by salesmen A, B, C and D in regions R_1, R_2, R_3 and R_4 is given below :

(i) Assign one salesman to one region to minimise the selling cost. 4

(ii) If the selling price of the product is Rs. 200 per unit and variable cost excluding the selling cost given in the table is Rs. 100 per unit, find the assignment that would maximise the contribution. 2

(iii) What other conclusion can you make from the above ? 2

	A	B	C	D
R_1	4	12	16	8
R_2	20	28	32	24
R_3	36	44	48	40
R_4	52	60	64	56

2. (a) Tripod Ltd. has three divisions—X, Y and Z, which make products X, Y and Z respectively. For division Y, the only direct material is product X and for Z, the only direct material is product Y. Division X purchases all its raw material from outside. Direct selling overhead, representing commission to external sales agents are avoided on all internal transfers. Division Y additionally incurs Rs. 10 per unit and Rs. 8 per unit on units delivered to external customers and Z respectively. Y also incurs Rs. 6 per unit picked up from X, whereas external suppliers supply at Y's factory at the stated price of Rs. 85 per unit. 11

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Marks

Additional information is given below :

	Figs Rs./unit			
	X	Y	Z	
Direct materials (external supplier rate)	40	85	135	
Direct labour	30	50	45	
Sales Agent's commission	15	15	10	
Selling price in external market	110	170	240	
Production capacity	20,000	30,000	40,000	units
External demand	14,000	26,000	42,000	units

You are required to discuss the range of negotiation for Managers X, Y and Z, for the number of units and the transfer price for internal transfers.

(b) Differentiate between 'Traditional Management Accounting' and 'Value Chain Analysis in the strategic framework'. 5

3. (a) The following profit reconciliation statement has been prepared by the Cost Accountant of RSQ Ltd. for March, 2008 : 11

	Rs.	
Budget profit	2,40,000	
Sales price variance	51,000	(F)
Sales volume profit variance	42,000	(A)
	2,49,000	
Material price variance	15,880	(A)
Material usage variance	3,200	(F)
Labour rate variance	78,400	(F)
Labour efficiency variance	32,000	(A)
Variable overhead expenditure variance	8,000	(F)
Variable overhead efficiency variance	12,000	(A)
Fixed overhead volume variance	1,96,000	(A)
Fixed overhead expenditure variance	4,000	(F)
Actual profit	86,720	

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Marks

Budgeted production and sales volumes for March, 2008 were equal and the level of finished goods stock was unchanged, but the stock of raw materials decreased by 6,400 kg (valued at standard price) during the month.

The standard cost card is as under :

Material 4 kg @ Rs. 2.00	8.00
Labour 4 hours @ Rs. 32.00	128.00
Variable overhead	
4 hours @ Rs. 12.00	48.00
Fixed overheads	
4 hours @ 28.00	112.00
	296.00
Standard profit	24.00
Standard selling price	320.00

The actual labour rate was Rs. 2.24 lower than the standard hourly rate.

You are required to calculate :

(i) Actual quantity of material purchased

(ii) Actual production and sales volume

(iii) Actual number of hours worked

(iv) Actual variable and fixed overhead cost incurred.

(b) A company produces three products A, B and C. The following information is available for a period : 5

	A	B	C
Contribution (Rupees pre unit) (Sales—Direct materials)	30	25	15

Machine hours required per unit of production :

	Hours			
	A	B	C	Throughout accounting ratio
Machine 1	10	2	4	133.33%
Machine 2	15	3	6	200%
Machine 3	5	1	2	66.67%

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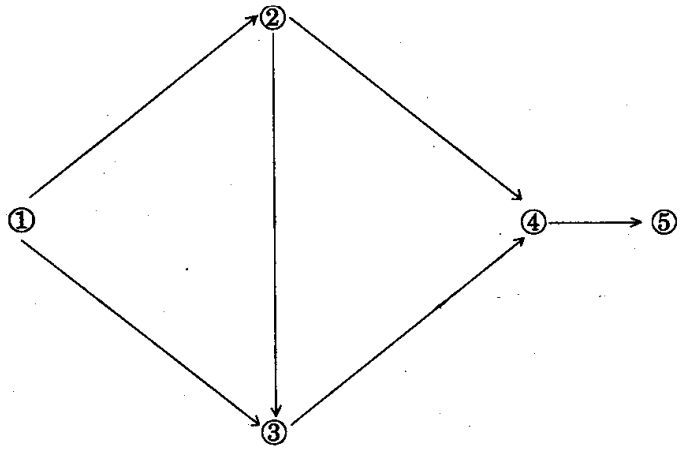
Estimated sales demand for A,, B and C are 500 units each and machine capacity is limited to 6,000 hours for each machine.

You are required to analyse the above information and apply theory of constraints process to remove the constraints.

How many units of each product will be made ?

4. (a) The normal time, crash time and crashing cost per day are given for the following network :



Activity	Normal time (days)	Crash time (days)	Crashing cost (Rs./day)
1-2	18	14	40
1-3	23	22	20
2-3	8	5	60
2-4	10	6	40
3-4	3	2	80
4-5	8	6	50

(i) Crash the project duration in steps and arrive at the minimum duration. What will be the critical path and the cost of crashing ? 9

(ii) If there is an indirect cost of Rs. 70 per day, what will be the optimal project duration and the cost of crashing ? 1

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Marks

(b) The budgeted and actual cost data of M Ltd. for 6 months from April to September, 2008 are as under : 6

	Budget	Actual
Production units	16,000	14,000
Material cost	Rs. 25,60,000 (1,600 MT @ Rs. 1,600)	Rs. 41,60,000 (at Rs. 1,650)
Labour cost	Rs. 16,00,000 (at Rs. 40 per hour)	Rs. 15,99,840 (@ Rs. 44 per hour)
Variable overhead	Rs. 3,00,000	Rs. 2,76,000
Fixed overhead	Rs. 4,60,000	Rs. 5,80,000

In the first half of financial year 2009-10, production is budgeted for 30,000 units, material cost per tonne will increase from last year's actual by Rs. 150, but it is proposed to maintain the consumption efficiency of 2008 as budgeted. Labour efficiency will be lower by 1% and labour rate will be Rs. 44 per hour. Variable and fixed overheads will go up by 20% over 2008 actuals.

Prepare the Production Cost budget for the period April-September, 2009 giving all the workings.

5. (a) What are the requisites for the installation of a uniform costing system ? 4

(b) Write a short note on the procedure in hypothesis testing. 5

(c) A company has prepared the following budget for the forthcoming year : 7

	Rs. lacs
Sales	20.00
Direct materials	3.60
Direct labour	6.40
Factory overheads :	
Variable	2.20
Fixed	2.60
Administration overheads	1.80
Sales commission	1.00
Fixed selling overheads	0.40
Total costs	18.00
Profit	2.00

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The policy of the company in fixing selling prices is to charge all overheads other than the prime costs on the basis of percentage of direct wages and to add a mark up of one-ninth of total costs for profit.

While the company is confident of achieving the budget drawn up as above, a new customer approached the company directly for execution of a special order. The direct materials and direct labour costs of the special order are estimated respectively at Rs. 36,000 and Rs. 64,000. This special order is in excess of the budgeted sales as envisaged above. The company submitted a quotation of Rs. 2,00,000 for the special order based on its policy. The new customer is willing to pay a price of Rs. 1,50,000 for the special order. The company is hesitant to accept the order below total cost as, according to the company management, it will lead to a loss.

You are required to state your arguments and advise the management on the acceptance of the special order.

6. (a) TQ Ltd. implemented a quality improvement programme and had the following results : 4

	2007	2008
	(Figs. in Rs. '000)	
Sales	6,000	6,000
Scrap	600	300
Rework	500	400
Production inspection	200	240
Product warranty	300	150
Quality training	75	150
Materials inspection	80	60

You are required to :

(i) Classify the quality costs as prevention, appraisal, internal failure and external failure and express each class as a percentage of sales.

(ii) Compute the amount of increase in profits due to quality improvement.

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Marks

(b) The following matrix gives the unit cost of transporting a product from production plants P_1, P_2 and P_3 to destinations W_1, W_2 and W_3. Plants P_1, P_2 and P_3 have a maximum production of 65, 24 and 111 units respectively and destinations D_1, D_2 and D_3 must receive at least 60, 65 and 75 units respectively : 9

From \ To	D_1	D_2	D_3	Supply
P_1	400	600	800	65
P_2	1,000	1,200	1,400	24
P_3	500	900	700	111
Demand	60	65	75	200

You are required to formulate the above as a linear programming problem. (Only formulation is needed. Please do not solve).

(c) What is trend ? What are the various methods of fitting a straight line to a time series ? 3

7. (a) Paints Ltd. manufactures 2,00,000 tins of paint at normal capacity. It incurs the following manufacturing costs per unit : 6

	Rs.
Direct material	7.80
Direct labour	2.10
Variable overhead	2.50
Fixed overhead	4.00
Production cost/unit	16.40

Each unit is sold for Rs. 21, with an additional variable selling overhead incurred at Rs. 0.60 per unit

During the next quarter, only 10,000 units can be produced and sold. Management plans to shut down the plant estimating that the fixed manufacturing cost can be reduced to Rs. 74,000 for the quarter.

When the plant is operating, the fixed overheads are incurred at a uniform rate throughout the year. Additional costs of plant shut down for the quarter are estimated at Rs. 14,000.

You are required :

(i) To advise whether it is more economical to shut down the plant during the quarter rather than operate the plant.

(ii) Calculate the shut down point for the quarter in terms of numbering units.

(b) Describe the Just-in-time systems. 6

(c) Briefly explain skimming pricing and penetration pricing policies. 4

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