

Time Allowed : 3 Hours

The figures in the margin on the right side indicate full marks.

Answer Question No. 1 (carrying 25 marks) which is compulsory and any five (each carrying 15 marks) from the rest.

Wherever required, the candidates may take suitable assumptions and state them clearly in the answer.

*Please: (i) Answer all bits of a question at one place.
(ii) Open a new page for answer to a new question.*

1. (a) State whether the following statements are 'True' or 'False'. If false, you are to put up the correct statement 1x5=5

- | | |
|---|---|
| (i) The experience curve effect is broader in scope than the learning curve. | (|
| (ii) Joseph Juran is an internationally acclaimed Management Guru. | (|
| (iii) Buffer Management provides the means by which the schedule is managed on the shop floor. | (|
| (iv) AKIO MORITA is credited with pioneering the cost approach of target costing. | (|
| (v) The concept of quality circle is primarily based upon recognition of the value of the worker. | (|

(b) Choose the most appropriate one from the stated options and write it down. 1x5=5

- | | |
|---|---|
| (i) _____ are the employees who take up six sigma implementation along with their other job responsibilities (Fill in the gap from below)
(A) Green Belts
(B) Yellow Belts
(C) Black Belts
(D) Master Black Belts | (|
| (ii) The Systematic adoption of Kaizen strategy was instrumental for the phenomenal success of
(A) Toyota Motor
(B) Ford Motor
(C) General Motors
(D) Motorola | (|
| (iii) Deming Prize is one of the highest awards in the world associated with
(A) TQM
(B) Quality Circle
(C) Workplace improvement
(D) TPM | (|
| (iv) Control charts as a means of maintaining a process in statistical control were pioneered by
(A) Dr. W. A. Shewhart
(B) Calvin Kirby
(C) Robert Anthony
(D) Jack Welch | (|

- (v) Who led the concept and use of quality circles?
 (A) Philip Crosby
 (B) Kaoru Ishikawa
 (C) Joseph Juran
 (D) Peter A. Drucker
- (c) Explain the following terms, in not more than one-two sentences: 1x5=5
- (i) VAT analysis
- (ii) Talent Drain
- (iii) Management Culture
- (iv) Benchmarking
- (v) Intranet
- (d) Fill in the blanks in the following sentences by using appropriate words/phrases given in the brackets: 1x4=4
- (i) _____ (Symbiotic Relationship/Synergistic Relationship) is one in which the connected systems cannot function alone.
- (ii) Japanese perception of improvement in trade and Industry starts with the improvement of the _____ (Equipment or process/human element).
- (iii) ISO 9001 : 2000 is based on _____ (6/8) quality Management principles.
- (iv) FAST or Function Analysis system Technique is an evolution of the _____ (Quality Function deployment/value Analysis) process.
- (e) In each of the cases given below one out of four is correct. Indicate the correct answer (= 1 mark) and show your workings/reasons briefly in support of your answer (=1 mark): 2x3=6
- (i) ANKRIT LTD operates a throughput accounting system. The details of product M2 per unit are as under:
- | | |
|-----------------------------|-----------|
| Selling price | Rs.25 |
| Material Cost | Rs.10 |
| Conversion Cost | Rs.12 |
| Time on bottleneck resource | 5 minutes |
- The Return per hour for product M2 is
- (A) Rs.180
 (B) Rs.300
 (C) Rs.36
 (D) Insufficient Information
- (ii) DNB LTD has been investigating the time taken to produce one of its products and found that a 90% learning curve appears to be applicable. If the time taken to produce the first unit is 4 hours, what will be the total time taken to produce the units 5–8 only?
- (A) 10.368 hours
 (B) 10.500 hours
 (C) 12.960 hours
 (D) None of the above
- (iii) The selling price of Product–P of ZENITH LTD is set at Rs.200 for each unit and sales for the coming year are expected to be 400 units. If the company requires a return of 15% in the coming year on its investment of Rs.2,00,000 in Product–P, the Target Cost for each unit for the coming year will be

- (A) Rs.110
 (B) Rs.125
 (C) Rs.175
 (D) None of the above

2. (a) APEX LTD has introduced a special pack of festival gift HAMPER and priced each HAMMER of Rs.400. The standard cost of producing each hamper is Rs.200. The Hampers are sold through three big outlets in 3 city Malls and also through a cluster of small neighbourhood stores scattered over the city. Data relating to each outlat is as under:

7+3=10

	City Mall-I	City Mall-II	City Mall-III	Neighbourhood stores
Sales (in units)	1000	500	300	600
KM Travelled for delivery	1000	500	1200	7500
No. of emergency delivery	—	—	2	—
No of orders taken	5	3	7	10
Discounts (% of sales value)	20	15	20	6
Sales Commission (% of sales value)	10	10	10	10
Publicity Cost (Rs.)	30,000	40,000	45,000	60,000

The following additional information are provided:

- (i) Delivery costs by the company's own transport vary according to distance and cost Rs.5 per km over the standard product cost of Rs.200 per hamper.
- (ii) Out of standard product cost of Rs.200, 40% represents fixed overheads,
- (iii) When the sales outlets face emergency stock out situation, special deliveries are made and charged @ Rs.500 per delivery.
- (iv) Each outlet negotiates independently the discounts on sale price. Publicity costs are specific to each onlet.
- (v) Order taking costs are Rs.200 per order.

Required:

Workout the profitability for each of the outlets and also give your opinion with reasoning whether sales through any outlet is to be stopped.

- (b) Enumerate the differences between Management control and Operational control.

5

3. (a) Does Benchmarking tantamount to Industrial Espionage? Discuss.

5

- (b) VST AUTO LTD. manufactures around 150 motorbikes. Depending upon the availability of raw materials and other conditions, the daily production has been varying from 146 motorbikes to 154 motorbikes whose probability distribution is as given below:

3+5
+2=10

Production per day	Probability
146	0.04
147	0.09
148	0.12
149	0.14
150	0.11
151	0.10
152	0.20
153	0.12
154	0.08

The finished motorbikes are transported in a specially designed two storeyed Lorry that can accommodate only 150 motorbikes.

Using the following random numbers 83, 81, 78, 75, 64, 45, 19, 27, 11, 12, 66, 69, 71, 64, 52 simulate the process to FIND out:

- (i) What will be the average number of motorbikes waiting in the factory?
- (ii) What will be the average number of empty spaces on the Lorry?

4. (a) What are the Options for Demand stimulation? How would you adjust capacity to match current demand?

2+3=5

(b) YIPPEE TEXTILE LTD. monitors for quality of the woven coarse cotton cloth as it arrives to be rolled on to a beam. Usually a metre of the cloth is taken as a SAMPLE and checked for defects of different kinds such as

5+5=10

- (i) Knots,
- (ii) Oily or greasy patches or spots,
- (iii) Missed weave.

The SAMPLE may have a number of these defects. For instance, if it has one knot, two oil marks and one missed weave, then the number of defects are counted as (1+2+1=4).
During the first shift on Wednesday, 20 beams have been woven.
The quality control record is given in the following table:

Sample No.	Number of Defects	Sample No.	Number of Defects
1	4	11	12
2	9	12	9
3	3	13	3
4	12	14	9
5	5	15	2
6	3	16	2
7	2	17	1
8	2	18	3
9	1	19	1
10	9	20	4

Required:

- (i) Design an appropriate control chart, (use C–Chart)
- (ii) Was the process in control in the first shift on Wednesday?

5. (a) What are the stages involved in the creation of a Balanced Score Card? Explain them briefly.

6

(b) MORTIS INVESTMENT MANAGENT LTD. (a Mutnal Fund Company) has Rs.40 lakh available for investment in Government Bonds, Blue Chip Stocks, Speculative Stocks and Short Term Deposits. The annual expected return and risk factor are given below:

2+2+
3+2=9

Type of investment	Annual expected return(%)	Risk factor (0 to 100)
Government Bonds	12	12
Blue Chip Stocks	20	24
Speculative Stocks	25	50
Short Term Deposits	8	5

The company (MIML) is required to keep at least Rs.5 lakh in short term deposits and not to exceed average risk factor of 40. Speculative stocks must be at most 25% of the total amount invested.

Required:

How should MORTIS INVESTMENT MANAGEMENT LTD. invest the funds so as to maximise its total expected Annual Return?

Formulate this as a Linear Programming Problem. You are not required to solve the L.P.P.

6. ZESLEEN LTD., has two manufacturing divisions. Each division operates as an independent profit centre. Division A is the only source of a component that is used in Division B in manufacturing of a final product, EUREKA. For each unit of EUREKA, one component manufactured by Division A is used. Demand for EUREKA is not steady. Division B can increase sell of EUREKA by spending more on sales promotion and/or by reducing selling price. The Manager of Division B has prepared the following forecast:
- | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|
| Sales in units per day | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 |
| Average selling price per unit of EUREKA (Rs.) | 52.50 | 39.80 | 33.00 | 27.80 | 24.00 | 20.10 |

6+4+
5=15

The manufacturing cost of EUREKA in Division B is Rs.37.500 on first 1000 units and additional Rs.7.50 per unit for every additional 1000 components manufactured.

Division A incurs a total cost of Rs.15,000 per day for an output to 1000 components and the total costs will increase by Rs.9,000 per day for every additional 1000 components manufactured.

Manager of Division A states that operating results of his Division will be optimised if the transfer price is set at Rs.12 per component and accordingly he has set the above transfer price.

Requirements:

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- Prepare a profitability statement at each level of Division A and Division B.
- Work out the profitability of company as a whole at the output level,
 - When the net profit of Division A.is maximum,
 - When the net profit of Division B is maximum.
- If the company is not organized on profit centre basis what level of output will be chosen to yeild the maximum profit?

7. (a) The Manager (F & A) of MEGATRON LTD. has been preparing the profit and loss account for the week ended 30th September, 2010.

(1+2+2)
+5=10

Unfortunately, he had a car accident and is now in AMRI Hospital, so you, as a management accountant, have been asked to complete this statement.

The incompleted profit and loss statement and relevant data for the week ended 30th September, 2010 are shown below:

	Rs.	Rs.
Sales		4,00,000
Standard cost:		
Direct material	—	—
Direct wages	—	—
Overhead	—	—

Standard Profit				
Variances:	Fav/(Adv)	Fav/(Adv)		
	Rs.	Rs.		
Direct materials:				
Price	(3200)			
Usage	(2400)			
Total		(5600)		
Direct labour:				
Rate				
Efficiency				
Total	—	—		
Overhead:				
Expenditure				
Volume				
Total	—	—		
Total variances				
Actual profit				

STANDARD DATA:

The standard price of direct materials used is Rs.4800 per tonne. From each tonne of material it is expected 2400 units will be produced. A forty hour week is operated. Standard labour rate per hour is Rs.32. There are 60 employees working as direct labour.

The standard performance is that each employee should produce one unit of product in 3 minutes. There are 4 working weeks in September, 2010. The budgeted fixed overhead for September, 2010 is Rs.6,14,400.

ACTUAL DATA:

Materials used during the week 20 tonnes at Rs.4960 per tonne. During the week 4 employees were paid of Rs.33.60 per hour and 6 were paid Rs.30.40 per hour and remaining were paid at standard rate. Overheads incurred was Rs.1,44,000.

You are required to complete the PROFIT AND LOSS STATEMENT for the week ended 30th September,2010.

- (b) SARITA LTD. is considering a project with the following cash follows:

Year	Purchase of plant	Running costs	Savings
0	Rs.(100000)	—	—
1		Rs.20000	Rs.60000
2		Rs.25000	Rs.70000
3		Rs.3000	Rs.75000

The cost of capital is 10%

Required:

Measure the sensitivity of the project to change in the levels of plant value, running costs and savings . (considering each factor at a time) such that Net Present Value (NPV) become zero.

Which factor, is most sensitive to affect the acceptability of the project?

4+1=5

The Present Value Interest Factors (PVIF) at 10% are as follows:

Year	0	1	2	3
Factor	1.000	0.909	0.826	0.751

8. Write short notes on *(any three)* out of the following: 5x3=15

- | | |
|---------------------------------------|---|
| (a) Management Control System (MCS) | (|
| (b) Theory of constraints. | (|
| (c) Advantages of balanced score card | (|
| (d) Kaizen costing. | (|