4/131

1905E715

Candidate's Seat No :_____

MBA-1 Sem.-2 Examination

POM

Time : 2-30 Hours] **May-2025** **[Max. Marks : 70**

Q.1) (A)Write a note Production System Model. (10)

(B) Explain Following: (04)

(i) Just in Time

(ii)Economies of Scope

Q.2) (A) (10)

RST Limited has received an offer of quantity discount on its order of materials as under:

Price per ton	Order Size (in ton)
Rs. 9,600	Less than 50
Rs.9,360	50 and less than 100
Rs. 9,120	100 and less than 200
Rs 8,880	200 and less than 300
Rs.8,640	300 and above

The annual requirement for the material is 1000 tons. The ordering cost per order is Rs. 12,500 and the stock holding cost is estimated at 20% of the material cost per annum.

Required

(i) Compute the most economical purchase level.

(ii) Compute EOQ if there are no quantity discounts and the price per ton is Rs10,000

Q.2 (B)Write note on Methods of Inventory Management (04)

(P.T.O)

OR

Q.2 (A) (08)

A company manufactures a product from a raw material, which is purchased at Rs.60 per kg. The company incurs a handling cost of Rs.360 plus freight of Rs.390 per order. The incremental carrying cost of inventory of raw material is Rs.0.50 per kg. per month. In addition, the cost of working capital finance on the investment in inventory of raw material is Rs.9 per kg. per annum. The annual production of the product is 1,00,000 units and 2.5 units are obtained from one kg of raw material.

Required

- Calculate the economic order quantity of raw materials.
- Advise, how frequently should orders for procurement be placed.
- If the company proposes to rationalize placement of orders on quarterly basis, what percentage of discount in the price of raw materials should be negotiated?

Q.2 (B)Write a note on Objectives of Inventory Control. (06)

Q.3 (A) (10)

Activity	Normal Time - Days	Crash Time - days	Cost of Crashing per Day
1 - 2	9	6	15
1 - 3	8	5	20
1 - 4	15	10	25
2 - 4	5	3	10
3 - 4	10	6	15
4 - 5	2	1	35

Indirect cost per day of the project is Rs.100

(i) Draw the Network Diagram
(ii) Determine the critical path & duration.
(iii) Determine the optimum duration and the resultant cost of the project.

OR

E715-3

Q.3 (A) (10)

The owner of a chain of fast-food restaurants is considering a new computer system for accounting and Inventory control. A computer company sent the following information about the system installation:

Activity Identification	Activity Description	Immediate Predecessor	Time		
			Most Optimistic	Most Likely	Most Pessimistic
A	Select the Computer Model	-	4	6	8
B	Design input/output System	A	5	7	15
C	Design Monitoring System	A	4	8	12
D	Assemble computer hardware	B	15	20	25
E	Develop the main programs	B	10	18	26
F	Develop input/output routines	C	8	9	16
G	Create data base	E	4	8	12
H	Instal the system	D, F	1	2	3
I	Test and implement	G, H	6	7	8

a) Construct an arrow diagram for this problem, determine the critical path and state the expected project completion time.
b) Determine the probability that the project will be completed in 53 days.
c) If the company wants to be 85% sure that the system will be installed by a certain due date, how many days prior to that should it start the work?
d) Suppose the company agrees to install the computer system in 50 days, failing which it would pay a penalty of Rs 100 per day. What is the probability that a penalty, but not exceeding Rs 400, will be paid?
e) Obtain the earliest and the latest scheduling times of the various activities.

Q.3 (B) From the following data of jobs and machine hours you are required to find out (04)

1) Optimal Job Sequence
2) Total Elapse Time

Jobs	Machine A HRS	Machine B HRS
J1	30	80
J2	120	100
J3	50	90
J4	20	60
J5	90	30
J6	110	10

OR

Q.3 (B)Explain Total Float and Independent Float. (04)

(P.T.O)

Q.4) (A)Write a note on activities involve in supply chain Management. (08)

OR

Q.4) (A) (08)

Zeta Electronics, a global leader in consumer electronics, manufactures and distributes smartphones, laptops, and other digital devices. The company operates in over 50 countries with a robust supply chain network. However, the competitive electronics market has forced Zeta Electronics to re-evaluate its supply chain strategy to maintain market share and profitability. To stay competitive, Advice supply chain strategies to Zeta electronics.

Q.4 (B) (06)

A tailor specialises in ladies' dresses. The number of customers approaching the tailor appear to be poison distributed with a mean of 6 customers per hour. The tailor attends the customers on first come first basis and the customer wait if the need be. The tailor can attend the customer at an rate of 10 customers per hour with the service time exponentially distributed.

Find the probability of the number of arrivals (0 through 5) during 20 minutes interval.

OR

Q.4(B)

(i) What is queueing theory? Why Que is required? (02)

(ii)Write a note on behaviour of customer in a Queue. (04)

Q.5) Write a note on following (Any 3) (14)

(i) Total Quality Management

(ii) Lean Management

(iii) Six Sigma Concept

(iv)Benchmarking