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2301E1257

Candidate's Seat No : _____

MBA-2 Sem.-3 Examination

POM

Time : 2-30 Hours]

January-2025

[Max. Marks : 70

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

(B) Explain Following: (04)

(i) Economies of Scale

(ii) Universal Design

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 500 tons. The ordering cost per order is Rs. 12,500 and the stock holding cost is estimated at 25% 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)

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OR

Q.2 (A) Explain EOQ Model with Diagram and write a note on assumptions for the model. (10)

Q.2 (B) Write a note on Objectives of Inventory Control. (4)

Q.3 (A) (10)

| Activity | Normal Time - Days | Crash Time - days | Cost of Crashing per Day |
|----------|--------------------|-------------------|--------------------------|
| 1 - 2 | 9 | 6 | 20 |
| 1 - 3 | 8 | 5 | 25 |
| 1 - 4 | 15 | 10 | 30 |
| 2 - 4 | 5 | 3 | 10 |
| 3 - 4 | 10 | 6 | 15 |
| 4 - 5 | 2 | 1 | 40 |

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

Q.3 (A) (10)

ABC Construction Ltd. has undertaken a project to build a warehouse. The project involves the following activities, their dependencies, and estimated time durations:

| Activity | Description | Predecessors | Optimistic Time (Days) | Most Likely Time (Days) | Pessimistic Time (days) |
|----------|-----------------------|--------------|------------------------|-------------------------|-------------------------|
| A | Site Preparation | - | 4 | 6 | 8 |
| B | Foundation Work | A | 5 | 7 | 9 |
| C | Structural Frame Work | B | 6 | 8 | 14 |
| D | Roofing | C | 3 | 5 | 7 |
| E | Electrical Work | C | 4 | 6 | 10 |
| F | Finishing | D, E | 2 | 4 | 6 |

1. Calculate the Expected Time (Te) and Variance for each activity using the PERT formula:
2. Draw the Network Diagram
3. Identify the Critical Path and Calculate project Completion Time
4. Find out the probability of Completion of the activity on or before 34 days.

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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 | 5 | 2 |
| J2 | 1 | 6 |
| J3 | 9 | 7 |
| J4 | 3 | 8 |
| J5 | 10 | 4 |

OR

Q.3 (B) Write a note on requirement of scheduling. (04)

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.

Q.4 (B) (06)

A tailor specialises in ladies' dresses. The number of customers approaching the tailor appear to be poisson 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? (2)

(ii) Write a note on behaviour of customer in a Queue. (4)

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

(i) Total Quality Management

(ii) Small has become beautiful- Morden production concept

(iii) Statistical Quality Control

(iv) Lean Management