0105N464   Candidate's Seat No :_____

MBA 1 Semester-2 (D/E) (Reg/Rep) Examination
POM

Time : 2-30 Hours]   **May-2024**   **[Max. Marks : 70**

Q.1) (A) Write a note on Types of Product Layout.   (10)

(B) Explain Following: (4)

  (i) Economies of Scale

  (ii) Universal Design

Q.2) (A)   (10)

M/s MRF Tyres trades in four-wheelers tyres and tubes. It stocks sufficient quantity of tyres of almost every vehicle. In year end 2019-20, the report of sales manager revealed that M/s MRF Tyres experienced stock-out of tyres. The stock-out data is as follows:

Stock-out of Tyres	No. of times of Stock Out
100	2
80	5
50	10
20	20
10	30
0	33

M/s XYZ loses Rs.200 per unit due to stock-out and spends Rs.100 per unit on carrying of inventory. DETERMINE optimum safety stock level.

Q.2 (B) Write a note on objectives of Inventory control.   (4)

OR

Q.2 (A) (10)

Aditya Ltd. produces a product 'Exe' using a raw material Dee. To produce one unit of Exe, 2 kg of Dee is required. As per the sales forecast conducted by the company, it will able to sale 10,000 units of Exe in the coming year. The following is the information regarding the raw material Dee:

The Re-order quantity is 200 kg. less than the Economic Order Quantity (EOQ).

Maximum consumption per day is 20 kg. more than the average consumption per day.

There is an opening stock of 1,000 kg.

Time required to get the raw materials from the suppliers is 4 to 8 days.

The purchase price is Rs.125 per kg.

There is an opening stock of 900 units of the finished product Exe. The rate of interest charged by bank on Cash Credit facility is 13.76%.

To place an order company has to incur Rs.720 on paper and documentation work. From the above information find out the followings in relation to raw material Dee:

(a) Re-order Quantity

(b) Maximum Stock level

(c) Minimum Stock level

Calculate the impact on the profitability of the company by not ordering the EOQ. [Take 364 days for a year]

Q.2 (B) Methods of Inventory Management (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.60

(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)

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 55 days.
c) If the company wants to be 90% 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 500 per day. What is the probability that a penalty, but not exceeding Rs 2,000, 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   (4)

    1) Optimal Job Sequence
    2) Total Elapse Time

Jobs	Machine A HRS	Machine B HRS
A	30	80
B	120	100
C	50	90
D	20	60
E	90	30
F	110	10

OR

Q.3 (B) Write a note on requirement of scheduling.   (4)

Q.4) (A) Write a note on activities involve in supply chain Management.   (8)

OR

Q.4) (A) Write a note on supply chain strategies.   (8)

Q.4 (B)   (6)

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 30 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) 5S Model

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