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**NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**  
(An Autonomous Institute Affiliated to AKTU, Lucknow)

**MBA**

**SEM: II - THEORY EXAMINATION (2023 - 2024 )**

**Subject: Operations and Supply Chain Management**

**Time: 3 Hours**

**Max. Marks: 100**

**General Instructions:**

**IMP:** Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION A

20

1. Attempt all parts:-

- 1-a. When workstations are arranged according to the progressive steps by which the product produced it is called a (CO1) 1
- (a) Functional layout
  - (b) Product layout
  - (c) Fixed position layout
  - (d) Job shop layout
- 1-b. Production systems with customized outputs typically have relatively: (CO1) 1
- (a) high volumes of output
  - (b) low unit cost
  - (c) skilled workers
  - (d) none of these
- 1-c. The services a customer expects are called the \_\_\_\_\_service package.(CO2) 1
- (a) Primary
  - (b) Secondary
  - (c) Expected
  - (d) Augmented
- 1-d. The fact that services are sold, produced, and consumed at the same time refers to which of the following service characteristics (CO2) 1
- (a) Intangibility
  - (b) Inseparability
  - (c) Variability
  - (d) Perishability
- 1-e. One option for altering the availability of capacity is: (CO3) 1
- (a) pricing

- (b) use of overtime or slack time  
(c) back orders  
(d) none of these
- 1-f. Aggregate planning is capacity planning for:(CO3) 1  
(a) the intermediate range  
(b) the short range  
(c) typically one to three months  
(d) none of these
- 1-g. Examination of the sources of supply for purchased parts or materials in order to improve performance is called: (CO4) 1  
(a) vendor analysis  
(b) Value analysis  
(c) Reverse engineering  
(d) Disintegration
- 1-h. Small changes in consumer demand can result in large variations in orders placed because of the: (CO4) 1  
(a) Supply chain  
(b) Safety stock requirement  
(c) Lead time effect  
(d) Bullwhip effect
- 1-i. A tool that is not used for quality management is a (CO5) 1  
(a) Flowchart  
(b) Histogram  
(c) Redesign  
(d) Check sheet
- 1-j. Control charts for attributes are (CO5) 1  
(a) p-chart  
(b) c-chart  
(c) both a and b  
(d) none of these
2. Attempt all parts:-
- 2.a. Distinguish between total and partial productivity. (CO1) 2  
2.b. Explain empathy.(CO2) 2  
2.c. Distinguish holding cost and ordering cost.(CO3) 2  
2.d. Define moving averages. (CO4) 2  
2.e. Define PDCA cycle.(CO5) 2

### SECTION B

30

3. Answer any five of the following:-

- 3-a. Explain the term ' plant layout' . Briefly explain the product layout. (CO1) 6  
3-b. Define location decisions. Describe the importance of location for a manufacturing organization. (CO1) 6

- 3-c. Discuss the importance of service industry in India. (CO2) 6
- 3-d. Explain the factors affecting service design. (CO2) 6
- 3.e. ABC corporation has got a demand for a particular part at 10,000 units per year. The cost per unit is Rs. 2 and it cost Rs. 36 to place an order and to process the delivery. The inventory carrying cost is estimated at 9% of average inventory investment. Compute the following: 6
- (a) Economic order quantity (EOQ)
- (b) Optimum number of orders to be placed per annum (CO3)
- 3.f. Describe the five supply chain drivers.(CO4) 6
- 3.g. Discuss Deming's 14 principles of total quality management. (CO5) 6

**SECTION C**

**50**

4. Answer any one of the following:-

- 4-a. Differentiate between production and operations management. (CO1) 10
- 4-b. Define productivity. Discuss important factors affecting productivity.(CO1) 10

5. Answer any one of the following:-

- 5-a. Explain dimensions of service quality with reference to healthcare services. (CO2) 10
- 5-b. Describe important gaps identified in gap theory of service quality. (CO2) 10

6. Answer any one of the following:-

- 6-a. Discuss different tools and techniques of managing inventory. (CO3) 10
- 6-b. Discuss the objectives of aggregate planning and explain how demand and supply are managed. (CO3) 10

7. Answer any one of the following:-

- 7-a. Distinguish between  
a) push and pull system  
b) efficient and responsive supply chain.(CO4) 10

- 7-b. Given the weekly demand data, what are the exponential smoothing forecasts for Periods 2-6 using A)  $\alpha = 0.10$  Assume  $F_1 = D_1$  10

WEEK	DEMAND
1	820
2	775
3	680
4	655
5	750
6	??

(CO4)

8. Answer any one of the following:-

- 8-a. Explain the concept of six sigma. Discuss the significance of six sigma for a manufacturing organization.(CO5) 10
- 8-b. Discuss any five new tools of quality control with examples.(CO5) 10