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**Total No. of Pages: 02**  
**Total No. of Questions: 10**

**M.B.A. (Sem.-2<sup>nd</sup>)**  
**PRODUCTION AND OPERATION MANAGEMENT**  
**Subject Code: MBA-202**  
**Paper ID: [C0247]**

**Time: 3 Hrs.**

**Max. Marks: 60**

**INSTRUCTIONS TO CANDIDATE:**

- 1. Attempt any four question from Section-A.*
- 2. Attempt any one question of each unit I, II, III, IV from Section-B.*
- 3. Section-C is compulsory.*

**SECTION-A**

(4x5=20)

- Q.1.   a)     Discuss the importance of facility location.  
       b)     Explain the capacity planning process.  
       c)     Discuss the technique of Multi-Sampling plans.  
       d)     What do you understand by Lean Production systems?  
       e)     Explain the Virtual Factory Concept.  
       f)     Discuss the important of method study.

**SECTION-B**

**UNIT-I**

(4x8=32)

- Q.2.   Discuss the various factors responsible for facility location. Give examples.
- Q.3.   Discuss the characteristics of product design and development. What are the various techniques of product development?

**UNIT-II**

- Q.4.   Explain the different types of facility layouts. What are the various problems faced in facility layouts?
- Q.5.   Write notes on the following:
- i) Capacity Planning decisions
  - ii) Work Measurement.

### UNIT-III

- Q.6. Explain in detail tools and techniques for quality improvement. Also discuss Quality Assurance.
- Q.7. Discuss the utility and application of Six-sigma technique. What are statistical process charts?

### UNIT-IV

- Q.8. Derive an expression for E.O.Q. model of inventory management, with its assumption, how does it helps in maintaining optimum inventory?
- Q.9. Write notes on the following
1. J.I.T
  2. Stock Control Systems.

### SECTION-C Case Analysis

(1x8=8)

- Q.10. Sigma instruments (P) Ltd is considering three locations for its new factor-Faridabad, Kolkata and New Delhi. The estimate of different costs for the three location options are shown in the following table.

|                                                 | <i>Faridabad</i> | <i>Kolkata</i> | <i>New Delhi</i> |
|-------------------------------------------------|------------------|----------------|------------------|
| <i>Transportation costs (Rs per unit)</i>       | 10               | 20             | 9                |
| <i>Cost of material (Rs per unit)</i>           | 120              | 110            | 100              |
| <i>Taxes (Rs per year)</i>                      | 40,000           | 35,000         | 45,000           |
| <i>Cost of construction of the factory (Rs)</i> | 5 million        | 4 million      | 4.7 million      |
| <i>Electricity</i>                              | 22,000           | 15,000         | 25,000           |
| <i>Labour (Rs per unit)</i>                     | 26               | 21             | 23               |

The company has financed the construction cost of the factory by a loan from state bank of India at 15% interest per annum. As a production manager, advise the company on the economically best location option for the production of 5,000-10,000 units.

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