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| **Name:**<br>**Enrolment No:** | |

**UPES**

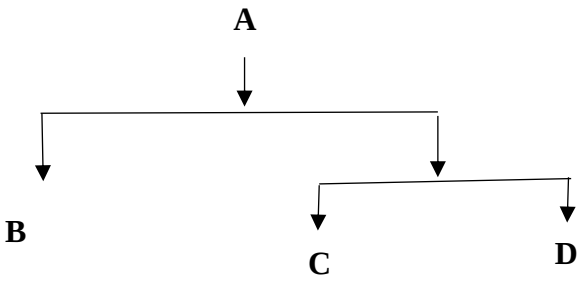
**End Semester Examination, December 2024**

**Course:** Materials Management — **Semester: III**
**Program:** BBA (Logistics Management) — **Time: 03 hrs.**
**Course Code:** LSCM2003 — **Max.Marks: 100**

**Instructions: Students are not allowed to use Scientific Calculators**

**SECTION A**
**(5Qx2M=10Marks)**

| S. No. | | Marks | CO |
|---|---|---|---|
| **Q 1** | All questions are compulsory (True or False) | | |
| 1.1 | The material forecasting in operations management is primarily aimed at predicting stock market trends and production costs. (T or F) | **2** | **CO1** |
| 1.2 | The objective of materials management is to make available the raw materials to the manufacturing system to produce the products. (T or F) | **2** | **CO1** |
| 1.3 | Rough-cut capacity is the medium range capacity plan and evaluates the capacity required to meet the master production schedule. (T or F) | **2** | **CO1** |
| 1.4 | The material requirement planning is driven by overall production plan and the inventory planning (T or F) | **2** | **CO1** |
| 1.5 | Effective capacity is the maximum output that a system can deliver under ideal conditions (T or F) | **2** | **CO1** |
| **SECTION B**<br>**(4Qx5M= 20 Marks)** | | | |
| **Q 2** | All questions are compulsory (Short answer type) | | |
| 2.1 | Define the objective and core functions of materials management | **5** | **CO1** |
| 2.2 | Explain various types of inventory control techniques in materials management | **5** | **CO2** |
| 2.3 | Define the JIT and KANBAN system and their benefits. | **5** | **CO2** |
| 2.4 | What is negotiation. Explain the purpose of negotiation in materials management | **5** | **CO3** |
| **SECTION-C**<br>**(2Qx10M=20 Marks)** | | | |
| **Q 3** | Suppose you are the head of the purchasing department of an automobile company ‘ABC’ and you have received a requisition for purchasing a few automotive parts. Discuss the role and responsibilities of your purchasing department in meeting the production schedule. | **10** | **CO2** |

<table>
<tr><td>Q 4</td><td>a) Explain the rated and effective capacities with appropriate examples.<br>b) Compute the efficiency and the utilization of the vehicle repair department having rated and effective capacities of 60 and 45 cars per day respectively. The actual output of the repair department is 40 cars per day. Suggest your solutions to improve the utilization of the vehicle repair department.</td><td>10</td><td>CO3</td></tr>
<tr><td colspan="4">SECTION-D<br>(2Qx25M=50 Marks)</td></tr>
<tr><td>Q 5</td><td>For a bicycle manufacturing company, the following master production schedule is planned:
<table>
<tr><td>Week</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td>Demand</td><td>200</td><td>__--</td><td>100</td><td>175</td><td>300</td><td>200</td><td>--__</td><td>250</td></tr>
</table>
The BOM structure is given in the following figure:<br> 

BOM Structure<br>The details of BOM along with economic order quantity and stock on hand for the final bicycle and sub-assemblies are shown in the following table:
<table>
<tr><th>Part required</th><th>Order quantity</th><th>No. of units</th><th>Lead time (week)</th><th>Stock on hand</th></tr>
<tr><td>A</td><td>350</td><td>1</td><td>2</td><td>200</td></tr>
<tr><td>B</td><td>450</td><td>1</td><td>1</td><td>400</td></tr>
<tr><td>C</td><td>400</td><td>1</td><td>1</td><td>375</td></tr>
<tr><td>D</td><td>375</td><td>1</td><td>1</td><td>250</td></tr>
<tr><td>E</td><td>400</td><td>1</td><td>2</td><td>425</td></tr>
</table>
Complete the MRP for the main product A as well as the subassemblies B, C, D, and E.</td><td>25</td><td>CO4</td></tr>
<tr><td>Q 6</td><td>a) What is the material handling. Discuss the materials handling principles. What are the different types of materials handling equipments used in the manufacturing industries? (15 Marks)<br>b) An Electronic Village stocks and sells a particular brand of personal computer. It costs the store $450 each time it places an order with the manufacturer for the personal computers. The annual cost of carrying the PCs in inventory is $170. The store manager estimates that the annual demand for PCs will be 1200 units. Determine the optimal order quantity and the total minimum inventory cost. (10 Marks)</td><td>25</td><td>CO4</td></tr>
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