

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: M.Tech  
BRANCH: PIE**

**SEMESTER : I  
SESSION : MO/2023**

**SUBJECT: PE523 MANUFACTURING STRATEGIES**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- |  | [5] | CO | BL |
|--|-----|----|----|
| Q.1(a) What is the corporate strategy? Explain the steps for its implementation in industry with example?            | 1   | 3  |    |
| Q.1(b) What are the different manufacturing philosophies for manufacturing strategy?                                 | 1   | 2  |    |
| Q.2(a) Justify with volume and variety relationship how does the functionality and capacity contribute to RMS.       | 2   | 4  |    |
| Q.2(b) Formulate a manufacturing strategy for implementation of cellular manufacturing in any industry with example. | 2   | 3  |    |
| Q.3(a) Define the "form code" using the Opitz system.  | 3   | 4  |    |
- Technical drawing of a mechanical part for Opitz form code classification. The part is a stepped shaft. Dimensions: Total length 1.500, first step length 0.500, second step length 0.875. Diameters: 1.000, 0.750, 0.250. Thread: 1/2-13 UNC.
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|--|------|---|---|
| Q.3(b) Explain the concept of group technology and ways to identify part family. | [5]  | 3 | 2 |
| Q.4(a) Explain the different tools and techniques of lean manufacturing.         | [5]  | 4 | 1 |
| Q.4(b) How does KANBAN facilitate the concept of lean manufacturing? Explain.    | [5]  | 4 | 3 |
| Q.5(a) Write short notes on following:<br>i) VAT analysis<br>ii) Six Sigma       | [10] | 5 | 1 |

:::28/11/2023 E:::