

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

00173

Term-End Examination

December, 2018

BME-010 : TOOL ENGINEERING AND MANAGEMENT

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. Use of calculator is permitted.

1. With the help of an example, explain 'Operation Sequencing'. 10

2. What is clamping and its principle ? List out the various types of clamps with their appropriate use. 5+5=10

3. (a) List out the various types of blanking and piercing dies.

(b) Describe the principle of sheet metal working. 5+5=10

4. (a) What is milling ? Explain the milling operations with the help of neat sketch.
- (b) A 120 mm diameter cutter, having 10 teeth, cuts steel bar of 100 mm width and feed rate of 180 mm/min. The depth of cut is 6 mm. Find the minimum and maximum chip thickness in the face milling operation. $4+6=10$
5. (a) With the help of a neat sketch, describe the different parts of a simple cutting die.
- (b) Briefly describe various types of forming tools with neat sketches. $5+5=10$
6. (a) What do you understand by 'Web-based Virtual Machine Tool (WVMT)' operation ? Explain.
- (b) Discuss the advantages and limitations of conventional CNC machine. $5+5=10$
7. (a) Describe various types of containers used in foundry.
- (b) Discuss the advantages of sand slinger over other machines. $5+5=10$
8. (a) What are the functions of guideways ? Discuss the requirements of guideways.
- (b) Explain the functions and requirements of spindle. How will you design spindle for a machine tool ? $5+5=10$

9. Write short notes on any *four* of the following : $4 \times 2 \frac{1}{2} = 10$

- (a) Ceramic Tool Materials
 - (b) Gating System in a Sand Mould
 - (c) Chip Formation in Metal Cutting
 - (d) Automatic Tool Changing Mechanism
 - (e) Functions of Stripper in a Press Tool
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