



## Term Evaluation (Odd) Semester Examination September 2025

Roll no.....

Name of the Course: B. Tech Mechanical Engg.

Semester: III

Name of the Paper: Production Technology

Paper Code: TME 309

Time: 1.5 hour

**Maximum Marks: 50**

**Note:**

- (i) Answer all the questions by choosing any one of the sub-questions
- (ii) Each question carries 10 marks.

Q1.

(10 Marks)

- a. Explain the different types of patterns used in casting and discuss the allowances provided on patterns with examples. (CO 1)

OR

- b. What are the functions of a riser? Compare open and blind risers in terms of efficiency and feeding distance. (CO 1)

Q2.

(10 Marks)

- a. Differentiate between ferrous and non-ferrous casting processes with suitable examples. (CO 1)

OR

- b. Define hydrostatic stress and deviatoric stress. Illustrate their significance in metal forming processes. (CO 1)

Q3.

(10 Marks)

- a. Classify forging processes and explain the working principle of any one forging machine. (CO 2)

OR

- b. Compare hot working and cold working processes with respect to microstructure, mechanical properties, and applications. (CO 2)

Q4.

(10 Marks)

- a. What is a flow curve? How is it used in metalworking processes? (CO 2)

OR

- b. List common casting defects. Explain their causes and remedies with neat sketches. (CO 2)

Q5.

(10 Marks)

- a. What are feeding distance calculations in riser design? Why are they necessary? Explain the functions of risers, runners, and gating systems in a casting process. (CO 2)

OR

- b. Explain yield criteria for ductile materials. Compare Tresca and von Mises criteria. Discuss the mechanical fundamentals of metalworking, including plastic stress-strain relationships. (CO 2)

**Note For the question paper setters:**

- Question paper should cover all the COs of the course.
- Please specify COs against each question.