



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.