CBCS SCHEME

USN | | | | | | | | | |

18MT44

Fourth Semester B.E. Degree Examination, June/July 2025
Manufacturing Technology

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Define the term Manufacturing Process. List and briefly describe the major classification of Manufacturing process. **(10 Marks)**

b. List the desirable properties of moulding sand. Provide a brief note on each property. **(10 Marks)**

OR

2 a. Draw the gating system and label all its parts. **(10 Marks)**

b. Enumerate any five types of pattern allowances and recall the purpose of each. **(10 Marks)**

Module-2

3 a. Explain the press forging operation with a neat sketch. Describe the key steps involved in the process. **(10 Marks)**

b. Identify the defects encountered in rolling. Discuss their causes and evaluate their effects on the final product. **(10 Marks)**

OR

4 a. Compare hot working and cold working. Discuss their advantages, disadvantages and applications. **(10 Marks)**

b. Describe the drawing equipment and dies used in the drawing process. Classify the types of drawing and discuss their application. **(10 Marks)**

Module-3

5 a. Discuss the various types of extrusion processes. Explain their applications and advantages. **(10 Marks)**

b. List the defects of drawn products. Analyse their causes and effects. **(10 Marks)**

OR

6 a. Explain the Metal Inert Gas (MIG) welding process with a neat sketch. Describe its working principle and applications. **(10 Marks)**

b. Discuss the advantages and limitations of the welding process. Explain its application in various Industries. **(10 Marks)**

Module-4

7 a. Illustrate the working principle of the ultrasonic machining process with a neat sketch. Evaluate its advantages. **(10 Marks)**

b. Analyze the advantages and limitations of the Abrasive Jet Machining (AJM) process. Discuss its applications in various Industries. **(10 Marks)**

OR

8 a. Explain the working principle of Lesar Beam Machining process. Write its applications. **(10 Marks)**

b. Analyze the need for non – traditional machining processes in modern manufacturing. Evaluate how these methods overcome the limitations of conventional machining. **(10 Marks)**

Module-5

9 a. Explain the salient features of a CNC system and synthesize information from its block diagram to propose improvements for enhanced automation. **(10 Marks)**

b. Discuss the influence of basic tool geometry on cutting performance. Design an optimized tool geometry for enhanced surface finish and tool life. **(10 Marks)**

OR

10 a. Discuss the functions of the following CNC Codes :
i) G03 ii) G21 iii) M05 iv) M06.
Develop a sample CNC program integrating these codes for a practical machining operation. **(10 Marks)**

b. Write the advantages . limitations and applications of CNC machines. **(10 Marks)**

* * * * *