MECHANICAL ENGINEERING DEPARTMENT
THEORY EXAMINATION

Month and year of the examination: **December 2024** | Session: **Nov/Dec 2024**
Programme: **B.Tech (3rd Sem.) Mechanical Engg.** | Max. Marks: **50**
Subject: **Manufacturing Processes** | Time allowed: **03 Hours**
Course Code: **MEPC-201**

Note –All questions are compulsory, Attempt the questions in serial order. Write in brief and explain with the help of neat and clean diagrams.

Q1	(a) Give the complete classification of Steels. What are the different types of operations that can be performed on the lathe machine? Explain using the diagrams. (b) Explain the closed mold casting process, use of core and types of pattern allowances using the schematic diagrams. **OR** Why Manufacturing processes are required? Classify different Manufacturing processes with proper block diagrams. Also give the definition of Metal, Ceramics and Composite materials.	5 marks 5 marks 10 marks
Q2	Differentiate between (a) Drawing and Extrusion processes (b) Electrochemical and Electroless deposition with the help of diagrams. **OR** Write a short note on the following: (a) Extrusion (b) Injection Moulding (c) Forging (b) wire Drawing	5+5 marks 10 marks
Q3.	(a) Explain the Weld Cladding and Thermal Spraying processes with the help of diagrams. (b) Explain the notching and lancing operations performed on sheet metals. **OR** Explain the Investment casting process with a neat schematic diagram. Also, list down different pattern allowances considered during the casting of a product.	5+5 marks 10 marks
Q4.	(a) Explain the different uses of flux in arc welding processes and give the schematic diagram of the GMAW process. (b) Explain the different alloy steels most preferred for (i) cryogenic applications (ii) making rail tracks. **OR** Explain the fusion and solid-state welding processes. Compare SMAW, MIG and TIG welding processes in tabular form only.	5+5 marks 10 marks
Q5.	(a) How can you distinguish between the different flames in the Oxy-fuel welding process by visible inspection, draw diagrams? Explain the brazing operation using a diagram and write the composition of one famous filler alloy used in brazing and soldering. (b) Explain the difference between Orthogonal and Oblique cutting using diagrams. What do you mean by the tool signature in the ASA system, draw diagrams to show various angles. **OR** Explain the rake and clearance angle with the schematic diagram. Also explain the advantages and disadvantages of positive, zero and negative rake angles with the schematic diagrams.	5 marks 5 marks 10 marks