

**Manufacturing Processes**  
**(ME-103E, May-2005)**

**Note:** Attempt any five questions in all selecting at least one question from each unit.

**UNIT-I**

1. a) What is an 'Accident'? Discuss causes and common sources of accidents in industries.  
b) Explain the term 'manufacturing'. Give a brief classification of manufacturing processes and their applications.
2. Give general properties, applications and the difference between the following engineering materials:
  - a) Mild steel
  - b) Medium carbon steel
  - c) High carbon steel
  - d) Cast iron

**UNIT-II**

3. a) What are the main characteristics which a good moulding sand should possess? How these characteristics influence the performance of moulding and casting process?  
b) What do you understand by cores? What are the various types of cores? How will you make a green sand core? Explain.
4. a) With the help of neat diagram, describe the operation of a cupola furnace for melting cast iron. What is the use of adding fluxes to the charge?  
b) State the various defects which may occur in sand castings and also mention their main causes and remedies.

**UNIT-III**

5. Explain the difference between cold working and hot working processes. Also discuss advantages and limitations of each.
6. Explain and give advantages and applications of the following processes:
  - a) Punching
  - b) Piercing
  - c) Forging
  - d) Extrusion

**UNIT-IV**

7. a) Draw a single point cutting tool. Show different angles on it.  
b) Discuss the mechanics of chip formation. Name different types of chip formed during machining.  
c) Discuss the difference between shaper, planer and milling machines.
8. a) Explain the processes of TIG and MIG welding with applications.  
b) With the help of a labeled sketch, Explain the process of resistance welding.  
c) Differentiate between soldering and brazing.