Instructions –  
(1) All Questions are Compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Use of Non-programmable Electronic Pocket Calculator is permissible.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

1. Attempt any FIVE of the following: 20
   a) State the advantages of press forging over drop forging.
   b) Explain the classification of rolling mills with neat sketches.
   c) State the advantages of extrusion.
   d) State the classification of presses.
   e) Explain stripper in press with neat sketch.
   f) Explain the drawing operation with neat sketch.
   g) State the various types of patterns. Explain any one with sketch.
2. **Attempt any FOUR of the following:**

a) Explain the open die forging with neat sketch.

b) Explain rolling process with neat sketch.

c) Explain direct extrusion.

d) Explain the blanking operation with respect to press work with neat sketch.

e) Explain the combination die with neat sketch.

f) Explain why wood is preferred as pattern material.

3. **Attempt any FOUR of the following:**

a) Explain upset forging with neat sketch.

b) State and explain the characteristics of moulding sand.

c) Explain green sand moulding.

d) Explain true centrifugal casting with neat sketch.

e) Explain various oxy-acetylene gas flames with neat sketches.

f) Explain soft and hard soldering.

4. **Attempt any FOUR of the following:**

a) State the types of gates. Explain anyone with neat sketch.

b) Draw the cross-section through cupola stating various zones and elements.

c) Explain hot chamber die casting machine.

d) Explain TIG welding.

e) Explain taper turning by setting over the tailstock.

f) State the various types of thermosetting plastics. Explain any one in brief.
5. Attempt any FOUR of the following: 16
   a) Explain electron beam welding with neat sketch.
   b) State the various operations performed on the lathe. Explain any two in brief.
   c) State and explain the major factors considered for selection of cutting speed in lathe machine.
   d) State the classification of drilling machine.
   e) State the various operations performed on drilling machine. Explain any one.
   f) Explain compression moulding with neat sketch.

6. Attempt any FOUR of the following: 16
   a) State the various welding defects and reasons for it.
   b) Explain the factors influencing the rake angle of the single point cutting tool.
   c) Explain cutting tool signature for single point cutting tool.
   d) Explain twist drill nomenclature with neat sketch.
   e) Explain calendaring with neat sketch.
   f) State the various materials for processing plastics.