

**Total Marks- 80**

**Duration: 3 Hours**

- N.B. 1) First Question (Q.1) is Compulsory.  
 2) Attempt any 3 questions from the remaining 5 (Q.2 - Q.6) questions.  
 3) Figures to the right indicate full marks  
 4) Proportionate and labelled free-hand sketches would do

- Q. 1 a)** Draw and discuss working of Explosive Welding technique with its applications, advantages and limitations. **10**
- b)** What's a pattern? How's it different from casting? Discuss various allowances on pattern and the material alternatives for pattern making. **10**
- Q. 2 a)** Draw and explain Geometry of a Single Point Cutting Tool. **10**
- b)** Explain working of Submerged Arc Welding with its applications, advantages and limitations. **10**
- Q. 3 a)** Discuss physics of electric welding arc with the help of diagrams. **10**
- b)** Explain the working principle of resistance spot welding process with the help of diagrams. **10**
- Q. 4 a)** Explain the imposition of directional solidification in sand casting. **10**
- b)** Draw and explain significance of various elements of gating system in sand casting. **10**
- Q. 5 a)** Draw and explain working of screw injection moulding of polymers with its applications, advantages and limitations. **10**
- b)** Draw and explain various operations possible on Centre Lathe. **10**
- Q. 6** Write short notes on (Any four) **20**
- a)** Various soldering techniques.
- b)** Pressurized and Non-pressurized gating system in founding practice.
- c)** Electron Beam Welding.
- d)** Reaction moulding of polymers.
- e)** Classification of manufacturing processes.
- f)** Quick return mechanism on shaper.