

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

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| 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. | |