

Q.P. Code : 600800

(3 Hours)

Total Marks : 80

Note : 1) Question No.1 is compulsory. Solve any four.

2) Attempt any three questions from remaining six questions

3) Assume suitable data if required.

4) Figures to the right indicate full marks

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| 1. (a) | Cooling systems used in injection molds | 20 |
| (b) | Laser Beam Machining | |
| (c) | Indexing Mechanisms used in Jigs and Fixtures | |
| (d) | Flexible Manufacturing System | |
| (e) | Differentiate between Combination and Compound Die with diagram | |
| (f) | Types of Automats | |
| 2. (a) | Find the total pressure and dimensions of die & punch sets to produce a washer of 5.5 cm outside diameter with 2.5 cm diameter hole, from material 2 mm thick, having shear strength 350 N/mm ² . Take clearance 9% of stock thickness. | 6 |
| (b) | What is Chemical Machining process? Explain in detail with the help of diagram. | 6 |
| (c) | Discuss all sheet metal operations with help of diagrams. | 8 |
| 3. (a) | Write short notes on the following: | 10 |
| | (i) Six Point Location principle for Jigs and Fixtures. | |
| | (ii) Drawing Press Tool for sheet metal. | |
| (b) | Explain about any five types of Clamping elements with diagrams in detail. | 10 |
| 4. (a) | Write about different types of transfer lines using neat sketches. | 10 |
| (b) | What is agile manufacturing? Write about the components of Agile Manufacturing. | 10 |
| 5. (a) | Explain the following: | 10 |
| | (i) Design principles of clamping elements and any 3 types of locating elements. | |
| | (ii) Abrasive Jet Machining. | |
| (b) | What are the different elements of Ejection system in Injection Molds? Explain any one ejection method. | 10 |
| 6. (a) | Write in detail about any five types of Jigs with neat sketches. | 10 |
| (b) | Explain the following: | 10 |
| | (i) Electrochemical Machining | |
| | (ii) Plastic Injection Mold Standardization | |