

QP Code : 14924

(3 Hours)

[ Total Marks : 80

- N.B :** (1) Question No.1 is **compulsory**.  
 (2) Attempt any **three** questions from remaining **six** questions.  
 (3) **Assume** suitable **data** if required.  
 (4) **Figures** to the **right** indicate **full marks**.

1. Write about any five :— 20
- Working of Screw Type Injection Molding.
  - Principle and basic process parameters of Water Jet Machining.
  - Applications of various types of Bushes used in jigs.
  - Flexible Manufacturing Systems.
  - Compound Die construction with sketch.
  - Types of Automats.
2. (a) A symmetrical cup work-piece is shown in the figure. It is to be made from cold rolled steel, 1.2 mm thick. Make necessary calculations for designing the drawing die for this component. Determine the size of blank, percentage reduction, number of draws required, radius of punch and die, Drawing pressure if  $\sigma_{yt} = 430 \text{ N/mm}^2$ . Take  $C = 0.67$ . 10
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- (b) What is Laser Beam Machining? Show its construction, working and applications with the help of diagram. 10
3. (a) Write about the different types of Runners and Gates used in Plastic Injection Molds with the help of diagrams. 10
- (b) What are jigs used for? Show with the help of diagrams, the working of Pot jig, Box jig, Plate jig and Turnover jig. 10

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