

Q.P. Code : 26201

(3 Hours)

(Marks: 80)

- N.B.:
- (1) Answer any four questions out of the six questions.
 - (2) Figures to the right indicate full marks.
 - (3) Illustrate answers with neat sketches where ever required.
 - (4) Answers to the questions should be grouped and written together.
 - (5) Assume suitable data if required.

1. (a) How the Ashby charts facilitates material selection process in the development of new product? Illustrate. **10**
(b) Short notes:- (1) Plastic deformation (2) Super plasticity **10**
2. (a) Explain the slipline method of analysis for the forming process. **10**
(b) Short note :- (1) Nano materials (2) Metal foams **10**
3. (a) Identify and describe suitable moulding process for manufacturing road cones. **10**
(b) What are the challenges associated with the composite material technology? Explain Hand lay-up composite processing technique with neat sketch? **10**
4. (a) Enlist types of snap fit. Explain design for U & L type of snap fits? **10**
(b) Describe the design for joining and assembly. **10**
5. (a) Describe LIGA- micro fabrication process **10**
(b) What are HSLA steels? State the applications, advantages and disadvantages of HSLA steels. **10**
6. (a) Explicate the intelligence inherent in materials. **10**
(b) Short note:- (1) Sensing Technology (2) Micro sensors **10**
