

Time – 3 Hours

Marks - 80

- N.B – (1) Question no 1 is compulsory.
 (2) Solve any three questions from remaining five questions.
 (3) Assume suitable data if necessary.
 (4) Illustrate the answer with proper and neat diagram
 Wherever necessary.**

- Q.1** a) Explain classification of Titanium alloys. **5**
 b) Write properties of Nitinol alloy. **5**
 c) Explain cryogenic behavior of stainless steel material. **5**
 d) Write short note on liquid crystal polymer. **5**
- Q.2** a) What is High Temperature polymer? Explain several ways by which heat stability of polymer can be increased. **10**
 b) What is closed molding? Explain sheet molding compound process. **10**
- Q.3** a) Write short note on carbon composite fabrication method. **10**
 b) Explain laser Ablation method for synthesis of nanotubes **10**
- Q.4** a) Explain Sialon processing of ceramics. **10**
 b) Explain hard facing process for thin film coating. **10**
- Q.5** a) What is sensitization? Discuss how Inter Granular corrosion is harmful for stainless steel. Suggest the method to minimize it. **10**
 b) Explain Pultrusion method for the manufacturing of composites. **10**
- Q.6** a) Explain slip casting process for processing of ceramic along with advantages and disadvantages. **10**
 b) Explain different causes for failure in stainless steel. **10**
