

(3 Hours)

(Marks: 80

- N. B. 1 Question No.1 is compulsory.
- 2 Attempt any three questions from remaining five questions.
- 3 Assume suitable data if necessary.
- 4 Diagram at appropriate places carries marks.
- 1 (a) Explain the Heat treatment cycle for stainless steel 5
- (b) Write properties and applications of Nitinol alloy 5
- (c) Write short note on polyamides 5
- (d) Write advantages of metal composite over metal 5
- 2 (a) Describe properties and application of Ni-Ti alloy as an important biomaterial 10
- (b) Explain structure and preparation of conducting polymer in detail 10
- 3 (a) Define magnetism. Discuss the working of magnetic ceramic materials 10
- (b) Explain Sialon processing of ceramics? 10
- 4 (a) Explain reinforcement types in detail? 10
- (b) Explain carbon composite fabrication in detail? 10
- 5 (a) Explain matrices and reinforcement of ceramic composites? 10
- (b) Explain matrices fabrication for metal composites? 10
- 6 (a) Explain various types of thermal spraying methods used for thin film coating 10
- (b) Explain chemical vapor deposition method for synthesis of carbon nanotubes 10