

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question no. 1 is compulsory
 (2) Answer Any Three Questions from the Remaining five Questions.
 (3) Illustrate the answer with proper and neat diagram wherever necessary.

1. (a) Write applications of carbon Nanotubes. 5
 (b) Explain various $A_m X_n$ structures of Ceramic Materials 5
 (c) Explain Biomedical application of PTFE. 5
 (d) Explain classification of Titanium alloys. 5
2. (a) Explain different causes of failure in Stainless Steel 10
 (b) What is High Temperature Polymer? Explain several ways by which heat stability of Polymer can be increased. 10
3. (a) Explain Slurry Infiltration Process for fabrication of Ceramic Matrix Composites along with its advantage and disadvantages. 10
 (b) What is closed molding process? Explain Pultrusion and Pulforming Process for processing of fiber reinforced plastic composites. 10
4. (a) Explain preparation of INSITU Particle Metal matrix composite along with its advantage and disadvantages 10
 (b) Explain Slip Casting Process for processing of ceramics along with its advantage and disadvantages 10
5. (a) What are composites? Explain classification of Composites Material. 10
 (b) Explain Chemical Vapor Deposition Method for synthesis of Carbon Nanotubes. 10
6. (a) Explain various types of Thermal Spraying Methods used for Thin Film Coating. 10
 (b) What is Stainless Steel? Explain various types of stainless steel with their characteristics. 10