

Time – 3 Hours

Marks - 80

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- 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.
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| Q.1 | a) | Write properties of Nitinol alloy. | 5 |
| | b) | Write advantages of metal composite over metal. | 5 |
| | c) | Write properties and applications of carbon nanotubes. | 5 |
| | d) | Write short note on polyamides. | 5 |
| Q.2 | a) | Explain conducting polymer in detail. | 10 |
| | b) | What is sensitization? Discuss how Inter Granular corrosion is harmful for stainless steel. Suggest the method to minimize it. | 10 |
| Q.3 | a) | Define Ferroelectricity? Discuss the working of ferroelectric ceramic material. | 10 |
| | b) | Explain biomedical application of polymer in detail. | 10 |
| Q.4 | a) | Explain reinforcement types in details | 10 |
| | b) | Explain silicon nitride processing of ceramics. | 10 |
| Q.5 | a) | What is closed molding? Explain sheet molding compound process. | 10 |
| | b) | Explain Sialon processing of ceramics. | 10 |
| Q.6 | a) | Explain in detail diffusion process for thin film coating. | 10 |
| | b) | What are composites? Explain classification of composite materials. | 10 |
