

(3 Hours)

Total Marks: 80

N.B. : (1) Question no. 1 is compulsory.

(2) Answer any 3 out of remaining 5 questions.

(3) Figures on the right indicate full marks.

(4) Assume data wherever necessary

1. (a) Discuss applications of hydrogels [05]
(b) Classify biomaterials and state their applications [05]
(c) Discuss wear of Biomaterials [05]
(d) What are applications of Hydroapatite. [05]
 2. (a) List various surface characterization techniques. Explain any one technique in detail. [10]
(b) Discuss various properties and applications of stainless steel. [10]
 3. (a) Discuss various types of heart valves and explain properties of the materials used for their construction. [10]
(b) Discuss various properties and applications of Nitinol. [10]
 4. (a) What are various degradable polymers? Explain their properties and applications. [10]
(b) Discuss properties and applications of Alumina. [10]
 5. (a) Discuss biological testing of biomaterial. [10]
(b) Describe different types of corrosions which can occur in metallic implants. [10]
 6. Write short notes on [20]
 - (a) PMMA
 - (b) Polyethylene
 - (c) Polyurethane
 - (d) Composites
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