

N.B.:

- (1) Question number 1 is compulsory.
- (2) Attempt any four questions from the remaining six questions.
- (3) Figures to the right indicate full marks.

- Q.1 a) What do you understand by "Biocompatibility of Biomaterials" ? [05]
b) Explain classification of bioceramics. [05]
c) Explain the applications of composites. [05]
d) Explain properties and applications of Nitinol. [05]

- Q.2 a) Explain properties and applications of stainless steel. [10]
b) Explain various experiments carried out to test biocompatibility of stainless steel. [10]

- Q.3 a) Explain the methods for biological testing of biomaterials. [10]
b) Explain following methods of surface measurement: [10]
i) Contact Angle Method
ii) ESCA Method

- Q.4 a) Explain various generations of breast implants. [10]
b) Write short notes on: [10]
i) Shunts for fluid transport in the body
ii) Sutures

- Q.5 a) Explain different types of leather used in prosthetic and orthotic devices. [10]
b) Explain properties and applications of wood used in prostheses and orthoses. [10]

- Q.6 Write short notes on: [20]
a) Zirconia
b) Hydrogels
c) Thermoplastic and Thermosetting resins
d) Polyurethanes

- Q.7 Write short notes on: [20]
a) SIMS method of surface measurement
b) Alumina
c) Surface Infrared Technique of surface measurement
d) Binding materials.