

- N.B. :** (1) Question No. 1 is compulsory
(2) Attempt any four questions out of remaining six questions.
(3) Figures to the right indicate full marks.
(4) Assume suitable data wherever necessary
(5) Draw sketches / diagrams wherever necessary
(6) Use legible handwriting. Use blue / black ink.



1. (a) What are biomaterials? Classify Biomaterials. [05]
(b) What are thermoplastic and thermosetting resin? [05]
(c) Explain the Applications of Nitinol. [05]
(d) Discuss the properties of materials used for breast implants. [05]

2. (a) Explain the properties and applications of Stainless steel. [10]
(b) Explain various experiments carried for its biocompatibility testing. [10]

3. (a) Explain the properties and applications of Titanium and its alloys. [10]
(b) Explain biocompatibility tests performed on Ti alloys. [10]

4. (a) Explain applications of Cobalt based alloys. [05]
(b) Explain the classification of polymers. [05]
(c) Explain applications of PMMA. [05]
(d) What are bioglass? What are its applications? [05]

5. (a) Explain how surface properties of Biomaterials tested. [10]
(b) Explain the methods of biological testing of biomaterials. [10]

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6. Write short notes on :

[20]

- (a) Bone cement
- (b) Classification of bio-ceramics
- (c) Corrosion protection
- (d) Hydrogels.

7. Write short notes on :

[20]

- (a) Silicone rubber.
- (b) Zirconia.
- (c) Carbon implants.
- (d) Sutures.