

22219

22223

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **10****
- Define corrosion and wear.
 - List any four applications of stainless-steel.
 - State the concept of biocompatibility.
 - Write name of the atomic and molecular bonds.
 - Give materials name for making contact lenses.
 - List materials used for cardiovascular implants.
 - Sketch labelled cellular events in bone healing.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) List any four properties and any four applications of carbon.
 - b) Sketch labelled structure of typical bone.
 - c) State and explain need of cardiac pacemaker.
 - d) Explain stress-strain curve with neat sketch.
- 3. Attempt any THREE of the following:** **12**
- a) Write any four properties of Nitinol.
 - b) Explain testing and evaluation process of dental implants.
 - c) Classify types of catheters.
 - d) List any four types of polymers.
- 4. Attempt any THREE of the following:** **12**
- a) Choose suitable filling and restoration materials for deep cavities and state its properties.
 - b) Write any four properties and any four applications of silicon rubber.
 - c) List and explain any four mechanical properties of bone.
 - d) State types and materials used in sutures.
 - e) Draw and explain corrosion rate measurement.
- 5. Attempt any TWO of the following:** **12**
- a) Explain contact angle method with neat sketch.
 - b) Explain use of collagen in dentistry.
 - c) Write properties and applications of hydrogel. Also sketch their structure.
- 6. Attempt any TWO of the following:** **12**
- a) Explain historical developments of biomaterials.
 - b) Explain composition and mechanical properties of artificial teeth.
 - c) Write any four properties and any four applications of acrylic polymer.
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