22219

24225

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) List any four applications of stainless steel alloy.

b) Enlist various surface properties.

c) Enlist any four uses of biomaterial.

d) Enlist different types of crystal structure of solids.

e) Define sterilization.

f) Define Pacemaker.

g) Draw bone healing curve.

2. Attempt any THREE of the following : **12**

a) Draw neat labelled stress-strain curve for ductile material.

b) State different factors affecting in bone formation.

c) Write any four mechanical properties of Ti based alloys.

d) Define corrosion and explain its two types.

P.T.O.

Marks

3. Attempt any THREE of the following : **12**

a) Write properties and applications of silicon rubber.

b) State the properties of any two materials used for contact lenses.

c) List various types of catheters used in cardio vascular implants. Also list materials used for them.

d) State the use of collagen in dentistry.

4. Attempt any THREE of the following : **12**

a) Draw neat sketch of total knee replacement.

b) Explain concept of Opthalmic implants.

c) List applications and properties of Zirconia.

d) Write mechanical properties of Bone.

e) Explain testing and evaluation process for dental implants.

5. Attempt any TWO of the following : **12**

a) Describe the process of total hip replacement.

b) List types of polymers. State properties and applications of alumina.

c) Write mechanical properties of teeth and enlist filling and restoration materials for deep cavities.

6. Attempt any TWO of the following : **12**

a) Explain testing method used to test biomaterials biologically.

b) Explain different thermal treatments.

c) Draw labelled experimental setup for measurement of corrosion rate and state use of potentiometer in it.

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