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**3rd Sem. / Medical Electronics**  
**Subject : MBMB (Bio mechanics & Bio Materials)**

Time : 3 Hrs.

M.M. : 60

**SECTION-A**

**Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)**

- Q.1 Compatibility of a material with the blood is referred to as:
- a) Cytocompatibility    b) Bio-Compatibility
  - c) Haemo-compatibility    d) Histo-compatibility
- Q.2 Biomaterial \_\_\_\_\_.
- a) Can be naturally derived or synthetic
  - b) Are always synthetic
  - c) Are always natural
  - d) Are made from polymers only
- Q.3 Biomaterials are intended to \_\_\_\_\_.
- a) Replace body part
  - b) Regenerate on organ
  - c) Augment function
  - d) All of these

Q.4 Role of Bio mechanics is in \_\_\_\_\_.

- a) Prosthetic Rehabilitation
- b) Sports
- c) Tissue engineering
- d) All of these

Q.5 Newton's first law is related to :

- a) Fog                                      b) Voltage
- c) Inertia                                      d) None of these

Q.6 Newton's law was discovered in :

- a) 1687                                      b) 1987
- c) 1887                                      d) 2021

#### Section-B

**Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)**

- Q.7 Define Blood Rheology.
- Q.8 What is Bio-Mechanics?
- Q.9 Define Polymers.
- Q.10 What is bio ceramics?
- Q.11 Define Joint.
- Q.12 What is PV-Curve?

#### Section-C

**Note: Short answer type Question. Attempt any eight questions out of Ten Questions. (8x4=32)**

- Q.13 Write a note on vascular implants?
- Q.14 Write any 5 properties of Bio-Material?
- Q.15 Write a note on role of auto claving in healthcare?
- Q.16 Define Autoclaving with suitable anatomical diagram.
- Q.17 Explain Alveoli mechanics.
- Q.18 Write a note on Bone Implants?
- Q.19 Explain role of Bio mechanics for healing of fractures.
- Q.20 Draw bone structure with its composition.
- Q.21 Explain Polymers with suitable examples.
- Q.22 Write a note on metals Co-Cr (Cobalt-Chromium) alloy role in health care for making Bio-Materials?

#### Section-D

**Note: Long answer questions. Attempt any two question out of three Questions. (2x8=16)**

- Q.23 What is Pulmonary and Systemic Circulation, define it with suitable diagram?
- Q.24 Write a note on role of bio materials as dental and orthopedic implants?
- Q.25 Explain concept of sterilization with various applications of sterilization in healthcare.