

**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.