

No. of Printed Pages : 4  
Roll No. ....

223232

3rd Sem.  
Branch : Medical Electronics  
Sub.: Bio-Mechanics & Bio Materials

Time : 3 Hrs. M.M. : 60

### SECTION-A

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

- Q.1 Which of the followings are examples of Biomaterials ?  
a) Titanium                  b) Ceramics  
c) Both                  d) None of these
- Q.2 Example of Bio material for cardiovascular system is :  
a) Vascular grafts                  b) Stents  
c) Both                  d) None of these
- Q.3 Newton's third law is related to :  
a) Inertia                  b) Act  
c) Force                  d) Action & Reaction
- Q.4 Newton's Second law is related to :  
a) Inertia                  b) Act  
c) Force                  d) All of these

Q.5 Property of Bio-material should be:

- a) Bio compatible
- b) Non allergic
- c) Non carcinogenic
- d) All of these

Q.6 One of bio material property is :

- a) Suitable for body
- b) Not matter
- c) Any material can be taken
- d) All of these

## **SECTION-B**

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

Q.7 What is metal Biomaterial?

Q.8 How many numbers of laws are defined by Newton?

Q.9 Define skelatal joint.

Q.10 Define Cartilage.

Q.11 Define Airway.

Q.12 Heart consists of how many number of chambers?

## **SECTION-C**

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

Q.13 Explain Biomechanics of elbow and shoulder.

Q.14 Explain Dental implant.

Q.15 Define vascular grafts.

Q.16 Write a note on requirements of Bio-Materials?

Q.17 Explain role of gamma radiation as sterilization.

Q.18 Explain ETO.

Q.19 Write any 5 applications of Bio materials?

Q.20 Explain mechanical property of bone.

Q.21 Explain breathing mechanism.

Q.22 Write a note on Artificial Pacemaker, as an application of Biomaterial?

## **SECTION-D**

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

Q.23 Explain Alveoli mechanics inside lung with suitable diagram.

Q.24 Write a note on Sterilization and its effect on Biomaterials.

Q.25 Write a note on all laws of newton's and their role in Biomechanics?