

B.TECH.**THEORY EXAMINATION (SEM-VIII) 2016-17
FUNDAMENTALS OF BIOMEDICAL ENGINEERING****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION – A****1. Explain the following:****10 x 2 = 20**

- (a) What do understand by musculoskeletal system?
- (b) What is stress?
- (c) What is strain?
- (d) What is the difference between the hip and knee joint.
- (e) What is turbulent flow?
- (f) Write the advantage of arteries in human body.
- (g) What do you mean by synovial fluid?
- (h) What is positron?
- (i) What is joint friction?
- (j) Write two features of telemedicine.

SECTION – B**2. Attempt any five of the following questions:****5 x 10 = 50**

- (a) What is biocompatibility? Discuss different types of biocompatible materials.
- (b) What do you understand by strain-stress relationship of the human bone?
- (c) Discuss mechanical properties of skin, soft tissues and bone.
- (d) Discuss Standards for medical data interchange.
- (e) Discuss the rheological properties of blood.
- (f) What do you understand by non-newtonian and pulsatile models?
- (g) Write short notes on the following:
 - (i) Ultrasound
 - (ii) Tomography.
- (h) Write short notes on the following:
 - (i) Polymers
 - (ii) Ceramics.

SECTION – C**Attempt any two of the following questions:****2 x 15 = 30**

- 3. Discuss the principle and working of magnetic resonance along with its clinical applications.
- 4. Describe the advantages of data collection in health care.
- 5. Explain detailed examination of the four main areas of medical imaging.