

Registration No. :

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Total number of printed pages – 2

B. Tech
PEBT 5303

Sixth Semester Regular Examination – 2015

BIOMATERIALS

BRANCH : BIOTECH

QUESTION CODE : J 453

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any five from the rest.
The figures in the right-hand margin indicate marks.*



1. Answer the following questions :

2 × 10

- Write down function of a scaffold.
- What are the properties of nanocellulose ?
- Define microencapsulation with examples.
- How mechanobiology helps in dental implant ?
- Write down some natural polysaccharides used as biopolymer.
- Give examples of signaling molecules in tissue engineering.
- Write down the sutures used in orthopaedics.
- Which biomaterial is used as bone and cartilage repair applications ?
- Why Ti alloys are used as orthopaedic implant materials ?
- Define magnetoelectropolishing.

2. What do you mean by biopolymer? Give an account on different types of bioplastics ?

10

P.T.O.

3. Define biocompatibility. Write down the *in vitro* tissues compatibility assesment(s). 10
4. Write the difference between : 10
- (a) Synthetic polymer and Biopolymer.
 - (b) Soft tissue and hard tissue.
5. (a) What do you mean by bioelectrodes ? Explain with examples. 1+4
- (b) Define bioceramics with suitable examples. 5
6. (a) Give a detail account on metallic implant materials. 5
- (b) What are the different ophthalmologic applications of biomaterials ? 5
7. (a) Write down the properties of biomaterials. 5
- (b) Give details on different evaluation processes of biomaterials. 5
8. Write short notes on any **two** : 5 × 2
- (a) Hydrogels
 - (b) Artificial heart
 - (c) DNA based active macromaterials for medicines
 - (d) Implant associated infections.

