S.E-III Sem - Biomed.

Biomaterials, Prosthetics and Orthotics.

(20)

SE/Biomed/III/Choice Based/Rev-2017/BPO

Q.P. Code :24503

[Time:3 Hours] [Marks:80]

Please check whether you have got the right question paper.

N.B:
1. Q.No.1 is compulsory.
2. Attempt any three from remaining five questions.
3. Figures to the right indicate full marks.
4. Use legible hand writing.

1. Answer any Four. 20
   a) What are levers and explain its types.
   b) Explain the types of movements and their importance in functioning of joints.
   c) How is Exoskelatal prosthesis different from Endoskeletal prosthesis?
   d) What is shape memory effect?
   e) What do you understand by Non-Dynamic Response foot?

2. a) What are the prerequisites of gait cycle? 04
   b) Explain with the help of a neat diagram, the gait cycle. 10
   c) Explain the distance variables of gait parameters. 06

3. a) What is orthosis? Explain the principle while designing an orthosis. 10
   b) Explain SOMI Brace in detail. 10

4. a) Comment on Ti and Ti based on alloys as implants, also mention its properties. 10
   b) What are ceramics and how are they classified? Explain in detail. Enlist one application of each each ceramic. 10

5. a) Explain the Invivo types of Biological testing of Biomaterials. 10
   b) How the surface property of a Biomaterial can be studied using SIMS technique. 10

6. Write short notes on any four. 20
   a) PMMA and its applications.
   b) Transradial prosthetic system.
   c) Biodegradable Polymers.
   d) Synovial joints.
   e) Corrosion and wear.

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