

**B.TECH. SEM -IV BIO MEDICAL 2014 COURSE (CBCS) :
WINTER - 2017**

SUBJECT : REHABILITATION ENGINEERING

Day : **Friday** Time : **02.30 PM TO 05.30 PM**
Date : **24/11/2017** **W-2017-2106** Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labelled diagram **WHEREVER** necessary.
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Q. 1 What is biomechanics? Describe biomechanics of muscles and ligaments. (10)

OR

Discuss the following in detail with example:

- a) Biomechanics of Tendon and Bones (05)
- b) Stress – strain curve (05)

Q. 2 Name the various joints present in the human body. Give location of each joint and explain the forces transmitted by joints in order to move the body. (10)

OR

Describe the following terms:

- a) Joint replacement (05)
- b) Body and limb mass (05)

Q. 3 Explain principles of three point pressure with diagram. What are the advantages and applications of it? (10)

OR

Classify orthosis. Explain lower and upper extremity orthosis and explain in detail. (10)

Q. 4 List components of a prosthesis and explain in detail with the help of suitable diagram. (10)

OR

- a) Write a short note on “SACH FOOT”. (05)
- b) What is Above Elbow (AE) prosthesis? Also draw the schematic showing AE prosthesis. (05)

Q. 5 Explain the term rehabilitation and concepts of prosthetic treatment. What is the job of prosthetic clinic team? (10)

OR

Write short notes on:

- a) Biomaterials used for upper extremity prosthesis (05)
- b) Safety and controls for upper extremity prosthesis (05)

Q. 6 Write short notes on:

- a) Amputee gait (05)
- b) Hip disarticulation amputation prosthesis (05)

OR

Explain following w.r.t. prosthetic design :

- a) Partial Foot Amputation Prosthesis (05)
- b) Symes Amputation Prosthesis (05)

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