Sem-IV Biomechanics, Prosthetic & Orthotics

BIO-MED

Con. 3375-11. Library 3/6/11 **RK-1902**

(3 Hours) **[Total Marks : 100**

AE

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions from the remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Illustrate **answers** with sketches whenever **required**.

Biomechanics, Prosthetic & Orthotics BIOMED

03/06/11

Q1) a) Discuss force systems sem-IV (05)

b) List the various knee joint componentry for the range of control of the joint with neat diagrams and their applications. (05)

c) Write a note on stirrups. (05)

d) Draw and explain the split socket used in below elbow prosthesis for a very short below elbow stump. (05)

Q2) a) Discuss the biomechanics of bone. State the factors affecting the mechanical properties. (10)

b) Define a Lever and Explain different types of lever existing in our body with examples. (10)

Q3) a) What is scoliosis and discuss the spinal orthoses used to correct different types of scoliosis. (12)

b) Explain different alignment procedures done for lower limb prosthesis (08)

Q4) a) Discuss the biomechanics of a total contact quadrilateral socket along with its alignment concepts. (10)

b) Explain above elbow prosthesis. (10)

Q5) a) Describe the Normal Gait Cycle with neat sketches giving its functional applications. (12)

b) Discuss the use of wood and leather in prosthesis. (08)

Q6) a) Explain HKAFO using neat diagrams. (10)

b) List various cervical orthoses given to control spine. Explain a cervical orthoses for rigid immobilization of cervical spine. (10)

Q7) Write short notes on: (any four) (20)

a. Wrist units

b. Prosthetic considerations for below knee prosthesis based on the level of amputation.

c. Biomechanics of skin

d. Stress strain curve

e. Functional terminal devices
