

SUBJECT : REHABILITATION ENGINEERING

Day : Saturday

Time : 02.30 PM TO 05.30 PM

Date : 17/11/2018

W-2018-2369

Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labeled diagram **WHEREVER** necessary.
 - 4) Assume suitable data if necessary.
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Q. 1 What are the general principles of biomechanics? Explain it with examples. **(10)**

OR

Describe biomechanics of muscles with diagram. **(10)**

Q. 2 What are the stance and swing phases of a normal gait cycle? Draw the diagrams showing stance and swing phase. **(10)**

OR

What do you mean by joint? What are the forces transmitted by joints in order to move the body? Explain in detail. **(10)**

Q. 3 Differentiate between foot ankle foot, knee ankle foot orthosis with their application and components used in design. **(10)**

OR

Explain with the help of neat diagram any upper extremity orthosis with example. **(10)**

Q. 4 What are the internal components of myoelectric prosthetic device? Explain its basic principle with advantages and disadvantages. **(10)**

OR

Differentiate between Jaipur foot and SACH foot with respect to functions, applications, advantages, disadvantages and safety. **(10)**

Q. 5 How will you design lower extremity prosthetic device? What are the recent developments in this field? Elaborate with the help of suitable example. **(10)**

OR

What are the prosthetic applications of artificial arm? Explain the safety guidelines while designing prosthetic devices. **(10)**

Q. 6 Write short note on: **(10)**

- a) Electrical power sources and its use in prosthetic device.
- b) Role of biomaterial in prosthetic application

OR

What do you mean by amputation surgery? Explain the recent developments in it. **(10)**