

B.P.T. [2nd Prof.]

BF/2017/09

Biomechanics

[New Scheme w.e.f. 2009]

Time: 3 Hours

Max Marks: 80

- Note: 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
3.) **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED**
4.) **The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.**

SECTION - A**[40 Marks]**

1. *All questions are compulsory. Answer upto 5 lines in length.* [5x3=15]
(a) Concave-convex rule
(b) Factors affecting stability
(c) Hand to knee gait
(d) Newtons laws of motion
(e) Importance of patella in extensor mechanism
2. **Answer the following question upto 3 pages in length.** [10]
Write a note on determinants of gait and kinematic gait analysis.
3. **Attempt any ONE question out of the following two questions and Answer should be upto 5 pages in length.** [15]
(a) Discuss the various features of diarthrodial and synarthrodial types of joints. Briefly discuss different type of synarthroses.

OR

- (b) Discuss the structure and function of the extensor mechanism of hand.

SECTION – B**[40 Marks]**

4. *All questions are compulsory. Answer upto 5 lines in length.* [5x3=15]
(a) H-zone
(b) Types of equilibrium.
(c) Muscle work.
(d) Concurrent force system
(e) Strength-tension relationship
5. **Answer the following question upto 3 pages in length.** [10]
Discuss the structure of a skeletal muscle and explain about the contractile and non-contractile structures of a skeletal muscle.
6. **Attempt any ONE question out of the following two questions and Answer should be upto 5 pages in length.** [15]
(a) Describe the shoulder complex and discuss the scapulo-humeral rhythm.

OR

- (b) Explain the structural and functional anatomy of ligaments in and around the knee joint with their kinesiologic importance.