

M.P.Ed. Examination, 2017
Semester II
Physical Education
Course: MPCC-202
(Sports Biomechanics and Kinesiology)

Time: 3 Hours

Full Marks: 70

Questions are of value as indicated in the margin.

Answer one question from each unit.

Unit I

1. What do you understand by the term 'Applied Kinesiology and Biomechanics'? Illustrate the scope of applied kinesiology and biomechanics in sports. 4+10=14

Or

Exemplify Scalar and Vector. Illustrate Planes and Axes with relevance to the fundamental movements of the human body. 4+10=14

Unit II

2. Name the muscles of the hamstring and quadriceps groups. Write the origin, insertion and actions of the muscles of any one group. 2+2+5+5=14

Or

Locate the origin and insertion of the longest muscles as well as deltoid muscles of the human body. 7 + 7 = 14

Unit III

3. State Newton's laws as applicable to angular motion with examples. Prove $F = ma$ 10+ 4 = 14

Or

Define Friction, Buoyancy and Spin and exemplify their application in sports. 14

Unit IV

4. Define Work, Power and Energy with their application in sports. Mathematically establish that sum of kinetic and potential energy for a freely falling body always remains constant. 6+8=14

Or

Write an essay on the aerodynamics of Discus with the help of figures and equations. 14

Unit V

5. What do you understand by Movement Analysis? Enlist different types of Movement Analysis. Explain Qualitative or Quantitative Analysis in detail. 2+2+10=14

Or

Write note on **any one** of the following: 7×2=14

- a. Cinematographics
 - b. Predictive method of analysis
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