

M.P.Ed. Examination, 2018

Semester-III

Physical Education

Course: MPEC-301

(Sports Engineering)

Time: Three 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 mean by Sports Engineering? What does Instrumentation means? Explain in detail about three methods of instrumentation used in sports arena. 3+3+8=14

Or

Define Sports Engineering? How will you apply the knowledge of human motion detection for human performance assessment? 4+10=14

Unit- II

2. Define Force. Explain the meaning of internal and external force. Discuss in details about shear force and torsion force with suitable examples. 2+6+6=14

Or

Explain the terms gait, posture and lever. Write down the mechanical principles of running and walking. 6+8=14

Unit- III

3. What is kinematics and kinetics? Define motion. Write down the newton's laws of motion with suitable examples from sports field. 4+2+8=14

Or

Define Kinematics and Particles. Discuss in details about the rectilinear and curvilinear motion coordinate system from the engineering point of view. 4+10=14

Unit- IV

4. Discuss in details about the different phases of building construction. 14

Or

Write in detail about the important key points while planning to construct gymnasium. 14

Unit- V

5. Explain *any two* areas of facility life cycle costing. 7+7=14

Or

Write in your own words about the recent trends of total life cycle cost concepts 14
