

V92/S34121/EE/20160710

Time : 3 Hours

Marks : 80

Instructions :

1. All Questions are Compulsory.
 2. Each Sub-question carry 5 marks.
 3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
 4. Question paper of 80 Marks, it will be converted in to your programme structure marks.
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1. Solve any **four** sub-questions.
 - a) What is Aristotle's fallacy? Explain the flaw in Aristotle's statement? 5
 - b) Elaborate on Galileo's law of Inertia. 5
 - c) State and explain Newton's three laws of Motion. 5
 - d) State and explain conservation of Momentum. 5
 - e) Explain Equilibrium of particles and write its equations using x, y and z components. 5
2. Solve any **four** sub-questions.
 - a) Explain the motion of a car on banked road using circular motion. 5
 - b) Define scalar and vector. Define various types of vectors. 5
 - c) State the procedure for addition of two vectors using graphical method. 5
 - d) Explain the motion of work and Kinetic Energy. 5
 - e) Explain the work done by a variable force. 5
3. Solve any **four** sub-questions.
 - a) State and explain the conservation of mechanical energy. 5
 - b) Explain the potential energy of a spring. 5
 - c) Write brief note on various forms of energy. 5
 - d) State and explain Kepler's three Laws namely law of Orbits, law of areas and law of periods. 5
 - e) Explain Universal law of Gravitation and state the value of Gravitational constant G. 5

4. Solve any **four** sub-questions.
- a) Define and explain Escape speed. Write brief note on Earth Satellites. 5
 - b) Define and explain Simple Harmonic Motion and Uniform Circular Motion. 5
 - c) State and explain Force law for Simple Harmonic Motion. 5
 - d) Explain the concept of stress and strain. State Hooke's law. 5
 - e) Define and explain Elastic Moduli. Explain Stress-Strain curve. 5

