

Note: Section I is compulsory. Attempt any TWO (2) questions from Section II.

SECTION - I

Q.2 Write short answers to any FIVE (5) questions: 10

- i What is meant by Vernier Constant?
- ii Define Plasma Physics.
- iii Why do we need to measure extremely small intervals of time
- iv Write down two advantages of Friction.
- v Define Centrifugal Force.
- vi When a gun is fired, it recoils. Why?
- vii State law of Gravitation.
- viii What is Global Positioning System?

Q.3 Write short answers to any FIVE (5) questions: 10

- i Differentiate between vectors and scalars.
- ii Represent 80N force acting in North-East direction
- iii Define acceleration and write down its S.I unit.
- iv Define density and write its unit.
- v The mass of 5 litre (1litre=10⁻³m³) of water is 5 Kg. Find

its density.

- vi Differentiate between stress and strain.
- vii Why conduction of heat does not take place in gases?
- viii Write down two uses of good conductors..

Q.4 Write short answers to any FIVE (5) questions: 10

- i Define stable and neutral equilibrium.
- ii How does Head to Tail Rule help to find the resultant of vectors
- iii Define centre of mass and centre of gravity.
- iv Differentiate between work and energy.
- v Define efficiency of a system and write formula of percentage efficiency.
- vi Define potential energy and write its equation.
- vii Convert 100°F temperature on Fahrenheit Scale into Celsius Scale.
- viii Define linear thermal expansion and volume thermal expansion.

SECTION-II

Q.5(a) What is meant by law of Inertia? Also give two examples. 5

(b) A polar satellite is launched at 850 Km above earth. (850 Km Find its orbital speed? 4

Q.6(a) Derive First Equation of Motion by using speed-time 5

(b) Calculate the volume of an iron sphere of mass kg) The density of iron is 8200 Kgm⁻³. 4

Q.7(a) Define Resolution of forces. How can a force F be resolved into its perpendicular components? 5

(b) A motor boat moves at a steady speed of 4ms) Water resistance acting on it is 4000 N. Calculate power of its engine. 4