PART – I

Q.2 **Write short answers to any Five (5) questions:** 10
i | Differentiate between base quantities and derived quantities.
ii | Define plasma physics.
iii | Write down two rules to identify the significant figures.
iv | Differentiate between vectors and scalars.
v | Define position.
vi | Write down mathematical form of 3rd equation of motion.
vii | Write down two disadvantages of friction.
viii | Differentiate between centripetal and centrifugal force.

Q.3 **Write short answers to any Five (5) questions:** 10
i | What is a solar cell? Write down its uses.
ii | Why an energy saver lamp is better than an electric lamp?
iii | Define power. Write down its SI unit.
iv | Define force of gravitation.
v | What is meant by artificial satellites? Write down their uses.
vi | Why does the value of 'g' vary from place to place?
vii | Write difference between like and unlike parallel forces.
viii | Define centre of mass.

Q.4 **Write short answers to any FIVE (5) questions:** 10
i | What is meant by elastic limit?
ii | Define density and write its unit.
iii | Write four differences between solid and gas state of matter.
iv | What is meant by internal energy of a body?
v | Define specific heat capacity.
vi | What is meant by transfer of heat? Write its modes.
vii | Upon which factors radiation depend?
viii | Why does land breeze blow in the night?

PART – II

Note: Attempt any TWO questions.

Q.5(a) Derive the second equation of motion with the help of speed-time graph. 1,3

(b) How much centripetal force is needed to make a body of mass 0.5 kg to move in a circle of radius 50 cm with a speed 3 ms⁻¹? 5

Q.6(a) Explain any two states of equilibrium. 4

(b) Calculate the value of 'g' at a height of 3600 km above the surface of the earth. 5

Q.7(a) Define and explain latent heat of fusion. 4

(b) A student presses her pain by her thumb with a force of 75 N. What would be the pressure under the thumb having contact area 1.5 cm²?