

PART - I**Q.2** Write short answers to any Five (5) questions: 10

- i What are prefixes and give two examples.
- ii Define least count of vernier callipers and write value of least count of vernier callipers in centimetre.
- iii Define plasma physics.
- iv Differentiate between scalars and vectors quantities.
- v What do you know about LIDAR gun?
- vi Define uniform acceleration.
- vii State Newton's Third Law of motion and give one example.
- viii Write two methods of reducing friction.

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

- i Define stable equilibrium.
- ii What is first condition for equilibrium?
- iii Define clockwise and anti-clockwise moment.
- iv Define geostationary orbit.
- v What is meant by satellite and natural satellite?
- vi How the value of 'g' varies with altitude?
- vii Define biomass energy and geothermal energy.
- viii What is meant by power and watt?

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

- i Define density and also give its SI unit.
- ii State Pascal's law.
- iii What is meant by elastic unit?
- iv Define volume thermal expansion.
- v Convert 100°F into the temperature on Celsius scale.
- vi Why conduction of heat does not take place in gases?
- vii Why does sea breeze blow during the day?
- viii Write down two uses of insulators.

PART - II**Note:** Attempt any TWO questions.**Q.5(a)** Draw speed time graph and derive second equation of motion $S = v_1 t + \frac{1}{2} a t^2$ 1,3**(b)** A body has weight 20 N. How much force is required to move it vertically upward with an acceleration of 2ms^{-2} ? 5**Q.6(a)** What is center of gravity? Explain how do you find the center of gravity of an irregular shaped thin lamina. 4**(b)** A block weighing 20 N is lifted 6 m vertically upward. Calculate the potential energy stored in it. 5**Q.7(a)** Explain linear thermal expansion in solids. 4**(b)** The density of air is 1.3kg^{-3} . Find the mass of air in a room measuring $8\text{m} \times 5\text{m} \times 4\text{m}$. 5