## (Group – I)

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

i. What is meant by zero error and zero correction?

ii. Define derived units and give an example.

iii. Define scientific notation.

iv. Differentiate between scalars and vectors.

v. Define uniform speed.

vi. How can vector quantities be represented graphically?

vii. What is difference between sliding friction and rolling friction?

viii. A car starts from rest. Its velocity becomes $20 ms^{-1}$ in 8 seconds. Find its acceleration.

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

i. Define torque also write down its unit.

ii. What is meant by rigid body?

iii. How does head to tail rule help to find resultant of forces (vectors)?

iv. On what factors orbital speed of satellite depends?

v. What is meant by communication satellite?

vi. Why is law of gravitation important to us?

vii. What is meant by power? Write down its formula.

viii. Define energy. Give its an example.

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

i. Define density and write down its formula.

ii. What is Hooke's law?

iii. Differentiate between strain and stress.

iv. Define heat. Write down its SI unit.

v. Evaporation causes colling. Why?

vi. Define latent heat of fusion.

vii. Write down two uses of convection current.

viii. Define thermal conductivity.

## PART – II

Note: Attempt any Two questions.

**5.** (a) Define and explain law of conservation of momentum. ④

(b) A car moves with uniform velocity of $40 ms^{-1}$ for 5 seconds. It comes to rest in the next 10 seconds with uniform deceleration. Find

(i) Deceleration.

(ii) Total distance travelled by the car. ⑤

**6.** (a) State the law of gravitation and derive its mathematical formula. ④

(b) A man is pulling a trolley on a horizontal road with a force of 200 N making 30o with the road. Find the horizontal and vertical components of its force. ⑤

**7.** (a) Define linear thermal expansion in solids. Derive its equation.
$L = L_o (1 + \alpha \Delta t)$ ④

(b) The head of a pin is a square of side 10mm. Find the pressure on it due to a force of 20N. ⑤