

Physics (New Scheme)	Ninth Gujranwala Board 2019	Paper - I
Time: 1.45 hrs	Subjective (Group - II)	Marks : 48

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

SECTION-I

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

- i What is vernier callipers? Write the Least Count (L.C) of vernier callipers.
- ii Differentiate between Base quantities and Derived quantities.
- iii What is meant by significant figures of a measurement?
- iv Define Linear motion and Circular motion.
- v Differentiate between Scalars and Vectors? Give an example of each.
- vi Describe the Law of Inertia.
- vii Write two differences between mass and weight.
- viii Describe two (2) ways to reduce friction.

3. Write short answers to any FIVE (5) questions: (2×5=10)

- i Define resultant of forces.
- ii What is meant by axis of rotation?
- iii What is meant by Global Positioning System?
- iv What is the value of g on the earth and the moon?
- v Why communication satellites appear stationary with respect to the Earth.
- vi What is meant by Mechanical energy, also give one example.
- vii Define elastic potential energy.
- viii What is Mass-Energy Equation?

4. Write short answers to any FIVE (5) questions: (2×5=10)

- i How a submarine floats on the water surface and dives down into water?
- ii What is Hooke's Law? What is meant by elastic limit?
- iii Why does the atmospheric pressure vary with height?
- iv Define latent heat of fusion and latent heat of vaporization?
- v Define "volume thermal expansion" and "temperature co-efficient of volume expansion"?
- vi What is meant by thermal conductivity?
- vii Define radiation. Write down the factors at which the rate of emission of radiation depends upon?
- viii What is "Greenhouse effect"?

SECTION-II

5.(a) Derive second equation of motion with the help of speed-time graph. 4

(b) A bullet of mass 20 g is fired from a gun with the muzzle velocity 100 ms^{-1} . Find velocity of the recoil of the gun if its mass is 5 kg. 5

6.(a) Define torque and write its mathematical equation. Explain torque of a couple with the help of a double arm spanner. 4

(b) A girl carries a 10 kg bag upstairs to a height of 18 steps, each 20 cm high. Calculate the amount of work she has done to carry the bag. (Take $g=10 \text{ ms}^{-2}$) 5

7.(a) Define volume thermal expansion in solids. Derive mathematical relation for volume thermal expansion. 4

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