



Estd. 1861

**BOYS' HIGH SCHOOL AND COLLEGE**  
**FIRST TERM EXAMINATION (2023-24)**  
**CLASS – IX**  
**PHYSICS**

(Two Hours Paper)

M.M:80

**SECTION A (40 Marks)**  
**(Attempt all questions from this section)**

**Question 1:** Choose the correct answers to the questions from the given options: [15]

- i) One metric tonne = \_\_\_\_\_ kg  
 a) 1 quintal                      b) 1000 quintal                      c) 10 quintal                      d) 100 quintal
- ii) \_\_\_\_\_ is used to measure the internal diameter of a hollow cylinder.  
 a) Inside jaws                      b) Strip                      c) Outside jaws                      d) Screw Gauge
- iii) Slope of  $T^2$  Vs  $L$  graph at a place is equal to \_\_\_\_\_  
 a)  $2\pi^2/g$                       b)  $4\pi^2/g$                       c)  $2\pi^2/g$                       d)  $4\pi^2/g$
- iv) If a body starts its motion from point A to B and comes back to point A after certain time interval. Point A and B are 20 m apart. The distance and displacement are-  
 a) 0, 40 m                      b) 40 m, 0                      c) 40 m, 20 m                      d) 20 m, 0
- v) 72 km/hr is equal to –  
 a) 12 m/s                      b) 16 m/s                      c) 20m/s                      d) 18 m/s
- vi) The value of  $g$  is minimum at \_\_\_\_\_  
 a) Tropic of Cancer                      b) poles                      c) Tropic of Capricorn                      d) Equator
- vii) From velocity-time graph, we can determine  
 a) Displacement of a body                      b) Acceleration of a body                      c) Mass of a body                      d) both (a) and (b)
- viii) Which of the following a non-contact force?  
 a) Normal-reaction force                      b) Frictional force                      c) Electrostatic force                      d) Tension in string
- ix) \_\_\_\_\_ is the property of an object by virtue of which it tends to retain its state of rest or of motion  
 a) Inertia                      b) acceleration                      c) force                      d) momentum
- x) The correct form of Newton's second law is –  
 a)  $F = mv$                       b)  $F = v (\Delta m/\Delta t)$                       c)  $F = m(v-u)$                       d)  $F = \Delta p/\Delta t$
- xi) Action and reaction forces act on –  
 a) the same body in opposite directions                      b) different bodies in opposite direction  
 c) different bodies in the same direction                      d) same body in the same direction
- xii) The value of  $G$  is –  
 a)  $6.7 \times 10^{-11} \text{ N m}^2/\text{kg}^2$                       b)  $9.8 \text{ N m}^2/\text{kg}^2$                       c)  $6.7 \text{ N/kg}$                       d)  $9.8 \times 10^{-11} \text{ m/s}^2$
- xiii) For a ray incident normally on a plane mirror, the angle of incidence is \_\_\_\_\_  
 a)  $90^\circ$                       b)  $45^\circ$                       c)  $30^\circ$                       d)  $0^\circ$
- xiv) For two mirrors kept parallel to each other, the number of images formed is \_\_\_\_\_  
 a) 3                      b) 2                      c) 0                      d) infinite
- xv) Two plane mirrors are placed making an angle  $60^\circ$  in between them. For an object placed in between the mirrors, the number of images formed will be \_\_\_\_\_  
 a) 3                      b) 6                      c) 5                      d) 10

**Question 2**

- (i) (a) Define pitch of a Screw Gauge. [3]  
 (b) What is the least count of Screw Gauge in centimeter?  
 (c) What is the purpose of Thimble?
- (ii) State how does the Time period of a simple pendulum depends on: [2]  
 (a) acceleration due to gravity  
 (b) effective length of the pendulum
- (iii) Can displacement be zero even if distance is not zero? Explain with the help of an example. [2]
- (iv) A school bus is moving with velocity 10 m/s. The bus driver applies the brakes and stops the bus in 0.5 second. Find retardation of the bus. [2]
- (v) What is the effect of force on- [2]  
 (a) rigid body                      (b) non-rigid body
- (vi) A cricket ball of mass 100g is moving with velocity 25 m/s. What is the linear momentum of the ball? [2]
- (vii) Write atleast 2 differences between a real image and a virtual image [2]

**Question 3**

- (i) A particle of mass 2 kg experiences a constant force of 10 N. What is the acceleration of the particle? [2]
- (ii) State the two laws of reflection of light [2]
- (iii) When a shot is fired from a gun, the gun gets recoiled. Explain. [2]
- (iv) Two oscillating simple pendulum of same length have amplitude ratio 1:2. What is the ratio of their time periods? [2]
- (v) A body initially at rest, starts moving with a constant acceleration  $2\text{m/s}^2$ . Calculate the velocity acquired after 5 seconds. [2]

**SECTION B (40 Marks)**

(Attempt any four questions from this section)

