ST. JOSEPH'S COLLEGE, PRAYAGRAJ

FIRST UNIT TEST 2025-26

PHYSICS

TIME: 1 Hour **CLASS – IX** **MM: 30**

Q 1) Multiple choice questions. **[8]**

a) A body starting from rest moves with uniform acceleration. What is the ratio of the distance covered in the 2nd and the 1st second?
   i. 2 : 5 ii. 3 : 1 iii. 1 : 2 iv. 4 : 7

b) The correct relationship amongst the following is…
   i. $T^2 \alpha l$ ii. $T \alpha l^2$ iii. $T^2 \alpha \sqrt{l}$ iv. $\sqrt{T} \alpha l^2$

c) The acceleration of a body decreasing its velocity from 9m/s to 3m/s in 3 seconds would be…
   i. $2\ m/s^2$ ii. $-2\ m/s^2$ iii. $3\ m/s^2$ iv. $-3\ m/s^2$

d) The average velocity of a body, moving in a circular path, after completing 1 revolution is…
   i. Undefined ii. $2\pi r / t$ iii. Zero iv. r / t

e) Which of the following is not a fundamental physical quantity?
   1. Density 2. Mass 3. Luminous intensity 4. Angle 5. Length
   i. 2, 3 & 5 ii. 1 & 3 iii. Only 1 iv. 3 & 4

f) A boy goes to school at 30 km/h and returns home at 40 km/h. What is his average speed?
   i. 34.28 km/h ii. 35 km/h iii. 35.63 km/h iv. 34.59 km/h

g) The scientific method involves:
   i.Making observations, formulating hypotheses, and testing them through experimentation.
   ii.Accepting any explanation without questioning.
   iii.Relying solely on intuition.
   iv.Memorizing facts from textbooks.

h) The time period of a simple pendulum of length 1 meter in outer space would be…
   i. 2 second ii. 1 second iii. Zero iv. undefined

Q 3) Short answer questions. **[10]**

a) A ball thrown vertically upwards comes back in the hands of the person in 6 seconds. What was the maximum height attained by the ball? ($g = 10\ m/s^2$)
b) What do you mean by the least count of a measuring instrument? Also write the formula of the least count of *Vernier Callipers*.
c) Define *parsec*. How many light years are there in 3.26 parsec?
d) What is acceleration? How it can be expressed in terms of initial velocity, time and displacement?
e) Find the ratio of the time periods of two pendulums when the effective length of the 1st pendulum is 4 times than that of the 2nd pendulum.

Q 4) Long answer questions. **[12]**

a) Mention 4 properties of a unit.
b) If there are 'x' cm in a km, 'y' nm in a μm and 'z' Å in mm, then what is the value of 'x + y – z'?
c) A biker starts his bike and accelerates uniformly for 10 seconds and reaches a velocity of 30 m/s. He then turns the engine off after which the bike comes to rest in the next 15 seconds. Find the average velocity of his whole journey.