



Time: 3 hours

PHYSICS (NEET | IIT-JEE)

Marks: 50

(MEASUREMENT: UNITS, DIMENSIONS AND ERRORS)

NAME OF STUDENT:- _____

DATE:- / /

- **INSTRUCTION:- ATTEMPT ALL QUESTION.**

Q1. The dimensional formula for G is.

- (a) $ML^3 T^{-2}$ (b) $M^{-1} L^3 T^{-2}$ (c) $M^{-1} L^2 T^{-3}$ (d) $ML^2 T^{-3}$

Q2. If L and C denote inductance and capacitance, the dimensions of LC are.

[AIIMS 2011]

- (a) $M^0 L^0 T^2$ (b) $ML^2 T^2$ (c) $M^0 L^2 T^2$ (d) $M^2 L^0 T^2$

Q3. While measuring acceleration due to gravity by a simple pendulum, a student makes a positive error of 1% in the length of the pendulum and a negative error of 3% in the time period. The percentage error in the measurement of g is.

- (a) 2% (b) 4% (c) 7% (d) 10%

Q4. The vernier of a circular scale is divided into 30 division, which coincide with 29 main scale divisions. If each main scale division is $(1/2)^0$, the least count of the instrument is.

- (a) $0.1'$ (b) $1'$ (c) $10'$ (d) $30'$

Q5. The dimensional formula for resistance is

[AIIMS 2005]

- (a) $ML^2 T^{-3} A^{-1}$ (b) $ML^3 T^3 A^2$ (c) $ML^2 T^{-3} A^{-2}$ (d) $ML^3 T^{-3} A^{-2}$

Q6. The dimensions of Planck's constant are same as those of.

[AFMC 2011]

- (a) work (b) coefficient of viscosity
(c) linear momentum (d) angular momentum

Q7. Which of the following is not a unit of energy?

[AIIMS 1985]

- (a) W-s (b) kg-m/s (c) N-m (d) joule

Q8. Which one of the following has the dimensions of pressure?

[AIPMT 1994]

- (a) $\frac{M}{L^2T^2}$ (b) $\frac{M}{LT}$ (c) $\frac{ML}{T^2}$ (d) $\frac{M}{LT^2}$

Q9. If $X = at + bt^2$, where X is in meters and t in hours (h), then the unit of b is

[AIPMT 1993]

- (a) m (b) m/h (c) m/h² (d) m²/h

Q10. Percentage errors in the measurement of mass and speed of a particle are 2% and 3% respectively. The error in the estimation of kinetic energy obtained by measuring mass and speed will be

[AIIMS 2009]

- (a) 12% (b) 10% (c) 2% (d) 8%