

Inter (Part-I) 2019

Physics	Group-I	PAPER: I
Time: 20 Minutes	(OBJECTIVE TYPE)	Marks: 17

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1- **Bragg's equation is:**

(a) $2d \sin \theta = n \frac{\lambda}{2}$ (b) $d \sin \theta = n\lambda$ ✓

(c) $d \sin \theta = n \frac{\lambda}{2}$ (d) $d \sin \theta = 2\lambda$

2- **2 revolutions are equal to:**

(a) π rad ✓ (b) $\frac{3\pi}{2}$ rad

(c) 2π rad (d) 4π rad

3- **The distance covered by a freely falling body in first 2 seconds, when its initial velocity was zero:**

(a) 9.8 m (b) 39.2 m

(c) 19.6 m ✓ (d) 4.9 m

4- **Base units of spring constant is:**

(a) $\text{kg}^{-1} \text{s}^{-2}$ (b) $\text{kg}^{-1} \text{ms}^{-2}$ ✓

(c) kg ms^{-2} (d) kg s^{-2}

5- **Terminal velocity V_t is related with the radius r of a spherical object as:**

(a) $V_t \propto r^2$ (b) $V_t \propto r$

(c) $V_t \propto \frac{1}{r}$ ✓ (d) $V_t \propto \frac{1}{r^2}$

- 6- In the relation $F = 6\pi\eta rv$. Dimensions of coefficient of viscosity η is:
- (a) $[M^{-1} LT^{-1}]$ (b) $[ML^{-1}T]$
 (c) $[M^{-1} L^{-1}T]$ (d) $[ML^{-1}T^{-1}] \checkmark$
- 7- If $P =$ Pressure; $V =$ Volume of a gas, $P\Delta V$ represents:
- (a) Work (b) Density \checkmark
 (c) Power (d) Temperature
- 8- Value of solar constant is:
- (a) $1.4 \text{ Wm}^{-2} \checkmark$ (b) 1400 Wm^{-2}
 (c) 14 kWm^{-2} (d) 1.0 kWm^{-2}
- 9- Two identical waves moving in same direction produce:
- (a) Interference
 (b) Beats
 (c) Stationary waves \checkmark
 (d) Diffraction
- 10- The ratio of 1 femtometer to 1 nanometer is:
- (a) $10^{-6} \checkmark$ (b) 10^6
 (c) 10^{-7} (d) 10^8
- 11- The unit of $\frac{1}{2} \rho V^2$ in Bernoulli's equation is same as that of:
- (a) Energy (b) Pressure \checkmark
 (c) Work (d) Power
- 12- If $\vec{F} = (2\hat{i} + 4\hat{j}) \text{ N}$; $\vec{d} = (5\hat{i} + 2\hat{j}) \text{ m}$, work done is:
- (a) 15 J (b) $18 \text{ J} \checkmark$
 (c) Zero (d) -18 J
- 13- If $f_o = 100 \text{ cm}$; $f_e = 5 \text{ cm}$ length and magnifying power of an astronomical telescope is:
- (a) 0.05 cm ; 20 (b) 95 cm ; 20
 (c) 20 cm ; 500 (d) 105 cm ; 20 \checkmark

- 14- Speed of sound at 0°C , in air is:
- (a) $332 \text{ ms}^{-1} \checkmark$ (b) 280 ms^{-1}
(c) 1400 ms^{-1} (d) 5500 ms^{-1}
- 15- Root mean square velocity is related to the absolute temperature of an ideal gas as:
- (a) $V_{\text{rms}} \propto T$ (b) $V_{\text{rms}} \propto T^2$
(c) $V_{\text{rms}} \propto \sqrt{T}$ (d) $V_{\text{rms}} \propto \frac{1}{\sqrt{T}} \checkmark$
- 16- Relation between the speed of disc and hoop at the bottom of an incline is:
- (a) $V_{\text{disc}} = \sqrt{\frac{3}{4}} V_{\text{hoop}}$
(b) $V_{\text{disc}} = \sqrt{\frac{4}{3}} V_{\text{hoop}}$
(c) $V_{\text{disc}} = \sqrt{\frac{2}{5}} V_{\text{hoop}}$
(d) $V_{\text{disc}} = 2V_{\text{hoop}} \checkmark$
- 17- The sum of two perpendicular forces 8 N and 6 N is:
- (a) $2 \text{ N} \checkmark$ (b) 14 N
(c) 10 N (d) -2 N