

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	The ratio of 1 femtometer to 1 nanometer is :			
	(A) $10^{-6}$	(B) $10^6$	(C) $10^{-7}$	(D) $10^8$
2	In the relation $F = 6\pi\eta r v$ . Dimensions of coefficient of viscosity $\eta$ is :			
	(A) $[M^{-1}LT^{-1}]$	(B) $[ML^{-1}T]$	(C) $[M^{-1}L^{-1}T]$	(D) $[ML^{-1}T^{-1}]$
3	If $\vec{F} = (2\hat{i} + 4\hat{j})N$ ; $\vec{d} = (5\hat{i} + 2\hat{j})m$ work done is :			
	(A) 15 J	(B) 18 J	(C) Zero	(D) -18 J
4	The sum of two perpendicular forces 8 N and 6 N is :			
	(A) 2 N	(B) 14 N	(C) 10 N	(D) -2 N
5	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
6	Value of solar constant is :			
	(A) $1.4Wm^{-2}$	(B) $1400Wm^{-2}$	(C) $14kWm^{-2}$	(D) $1.0kWm^{-2}$
7	Relation between the speed of disc and hoop at the bottom of an incline is :			
	(A) $V_{disc} = \sqrt{\frac{3}{4}} V_{hoop}$	(B) $V_{disc} = \sqrt{\frac{4}{3}} V_{hoop}$	(C) $V_{disc} = \sqrt{\frac{2}{5}} V_{hoop}$	(D) $V_{disc} = 2V_{hoop}$
8	2 revolutions are equal to :			
	(A) $\pi$ rad	(B) $\frac{3\pi}{2}$ rad	(C) $2\pi$ rad	(D) $4\pi$ rad
9	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) $v_t \propto \frac{1}{r^2}$
10	The unit of $\frac{1}{2} \rho V^2$ in Bernoulli's equation is same as that of :			
	(A) Energy	(B) Pressure	(C) Work	(D) Power
11	Base units of spring constant is :			
	(A) $kg^{-1}s^{-2}$	(B) $kg^{-1}ms^{-2}$	(C) $kg\,ms^{-2}$	(D) $kgs^{-2}$
12	Speed of sound at 0 °C, in air is :			
	(A) $332\,ms^{-1}$	(B) $280\,ms^{-1}$	(C) $1400\,ms^{-1}$	(D) $5500\,ms^{-1}$
13	Two identical waves moving in same direction produce :			
	(A) Interference	(B) Beats	(C) Stationary waves	(D) Diffraction
14	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) $d \sin \theta = 2\lambda$
15	If $f_o = 100\,cm$ ; $f_e = 5\,cm$ 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
16	Root mean square velocity is related to the absolute temperature of an ideal gas as :			
	(A) $V_{rms} \propto T$	(B) $V_{rms} \propto T^2$	(C) $V_{rms} \propto \sqrt{T}$	(D) $V_{rms} \propto \frac{1}{\sqrt{T}}$
17	If P = Pressure ; V = Volume of a gas $P\Delta V$ represents :			
	(A) Work	(B) Density	(C) Power	(D) Temperature