

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	Which of the following is supplementary unit :
	(A) Ampere (B) Candela (C) Mole (D) Steradian
2	In measurement 8,000 kg, if the scale has a least count of 10 kg, then the number of significant figures are :
	(A) 3 (B) 4 (C) 2 (D) 1
3	If the magnitude of resultant of two equal forces is also equal to the magnitude of either forces, then the angle between forces is :
	(A) 45° (B) 120° (C) 90° (D) 60°
4	For i, j and k unit vectors $i \times (j \times k)$ is :
	(A) $\vec{0}$ (B) \vec{i} (C) j (D) k
5	Slope of velocity-time graph gives :
	(A) Acceleration (B) Distance (C) Momentum (D) Displacement
6	The angle between velocity and acceleration at the highest point during the projectile motion is:
	(A) 45° (B) 30° (C) 90° (D) 0°
7	As the food we eat in the day has about the same energy as :
	(A) $\frac{1}{2}$ litre of petrol (B) $\frac{1}{3}$ litre of petrol (C) $\frac{1}{5}$ litre of petrol (D) $\frac{1}{7}$ litre of petrol
8	The moment of inertia of a cylinder is :
	(A) $\frac{2}{5}mr^2$ (B) $\frac{1}{2}mr^2$ (C) mr^2 (D) $\frac{1}{12}mr^2$
9	1 torr = ---- Nm^{-2} :
	(A) 133.3 (B) 143.3 (C) 153.3 (D) 123.3
10	The angle $\theta = \omega t$ specifies in SHM :
	(A) Displacement (B) Direction of motion of the point (C) Both displacement and direction (D) Direction of force
11	If a wave travelling in denser medium is reflected from the boundary of rarer medium, the phase change in the wave is :
	(A) 0° (B) 180° (C) 90° (D) 60°
12	According to Doppler effect, a star moving towards the earth show :
	(A) Red shift (B) Blue shift (C) Yellow shift (D) Green shift
13	In Michelson's interferometer, to observe two consecutive dark and bright fringes, the movable mirror is moved through :
	(A) $\frac{\lambda}{2}$ (B) $\frac{\lambda}{4}$ (C) $\frac{\lambda}{3}$ (D) λ
14	In collimator the rays coming out of the lens are parallel if the distance between lens and slit is :
	(A) Equal to the focal length of lens (B) Greater than the focal length of lens (C) Less than the focal length of lens (D) At any distance between lens and slit
15	If the source and sink are at the same temperature, then net change in entropy is :
	(A) Minimum (B) Maximum (C) Zero (D) Negative
16	If the frequency of rotation of a spacecraft is doubled, then gravity produced becomes :
	(A) Double (B) 3 times (C) 4 times (D) Does not change
17	An ideal reversible heat engine has efficiency :
	(A) 100 % (B) Highest (C) Efficiency depends upon the nature of working substance (D) 33.33%