

**PAPER CODE = 6474**

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	A body completes five revolutions in a circular path having radius 5 cm, the displacement of the body is : (A) Zero (B) 10 cm (C) 0.157 rad (D) 0.314 rad
2	How many satellites can track your Switch ON mobile phone location globally : (A) 3 (B) 24 (C) 14 (D) 5
3	Longitudinal waves do not exhibit : (A) Refraction (B) Reflection (C) Polarization (D) Diffraction
4	The unit of thermodynamic scale is : (A) Centigrade (B) Fahrenheit (C) Joule (D) Kelvin
5	The dimensions of $= \left( \frac{v}{v - u_s} \right) \frac{1}{\lambda}$ are : (A) $[T]^{-1}$ (B) $[L]^{-1}$ (C) $[MT^{-1}]$ (D) $[T^{-1}L]$
6	The speed of sound in air at 373 K is : (A) $332 \text{ ms}^{-1}$ (B) $300 \text{ ms}^{-1}$ (C) $291 \text{ ms}^{-1}$ (D) $393 \text{ ms}^{-1}$
7	The resultant force of two forces 30 N and 50 N acting on a body in opposite direction is : (A) 80 N (B) $10\sqrt{34}$ N (C) 50 N (D) 20 N
8	When the bob of simple pendulum is at its extreme position, it has : (A) K.E (B) P.E and K.E (C) P.E (D) P.E or K.E
9	At constant temperature, the graph between $v$ and $\frac{1}{p}$ is : (A) Hyperbola (B) Straight line (C) Parabola (D) Ellipse
10	All the food we eat in one day has about the same energy as ( if one litre petrol energy = $5 \times 10^7 \text{ J}$ ) : (A) $5 \times 10^7 \text{ J}$ (B) 0.33 J (C) $10 \times 10^7 \text{ J}$ (D) $1.66 \times 10^7 \text{ J}$
11	The diameter of the milky way is of the order of : (A) $10^{20} \text{ m}$ (B) $10^{10} \text{ m}$ (C) $10^3 \text{ m}$ (D) $10^{40} \text{ m}$
12	The angular speed of hour's hand of mechanical watch at 2 o'clock is : (A) $\frac{\pi}{3} \text{ rad /hour}$ (B) $2\pi \text{ rad /hour}$ (C) $\frac{\pi}{6} \text{ rad /hour}$ (D) $4\pi \text{ rad /hour}$
13	The time of flight of projectile is maximum when it is projected at an angle of : (A) $45^\circ$ (B) $90^\circ$ (C) $76^\circ$ (D) $0^\circ$
14	A two meter high tank is full of water. A hole appears at its middle. What is the speed of efflux of water ( If $g = 10 \text{ ms}^{-2}$ ) : (A) $4.47 \text{ ms}^{-1}$ (B) $4.32 \text{ ms}^{-1}$ (C) $10.0 \text{ ms}^{-1}$ (D) $20.0 \text{ ms}^{-1}$
15	Name the quantity which is vector : (A) Density (B) Power (C) Impulse (D) Charge
16	Twenty waves passes through the medium in one second with speed $20 \text{ ms}^{-1}$ , the frequency of wave is : (A) 400 Hz (B) 20 Hz (C) 50 Hz (D) 2 Hz
17	The magnification of a simple microscope when the final image is formed at infinity : (A) $\frac{d}{f}$ (B) $1 + \frac{d}{f}$ (C) $f_o + f_e$ (D) $\frac{f_o}{f_e}$