

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

- Which of the following is correct
 (A) $f = V\lambda$ (B) $f = \frac{V}{\lambda}$ (C) $f = \frac{1}{V\lambda}$ (D) $f = \frac{\lambda}{V}$
- The SI unit of co-efficient of viscosity is
 (A) kg m s (B) $\text{kg m}^{-1} \text{s}$ (C) $\text{kg m}^{-1} \text{s}^{-1}$ (D) kg m s^{-1}
- $\vec{A} \times \vec{A} =$
 (A) $2\vec{A}$ (B) A^2 (C) $\vec{0}$ (D) 0
- The direction of a vector in a plane is denoted by the angle which the representative line of the vector makes with
 (A) positive x-axis in the anti-clock wise direction
 (B) positive x-axis in the clock wise direction
 (C) negative x-axis in the anti-clock wise direction
 (D) negative x-axis in the clock wise direction
- If mass m of the water strikes the wall in time ' t ' then force F on the wall is
 (A) $F = \frac{mv}{t}$ (B) $F = \frac{mt}{v}$ (C) $F = \frac{vt}{m}$ (D) $F = \frac{m}{vt}$
- A typical rocket consumes fuel about
 (A) 100 kg s^{-1} (B) 1000 kg s^{-1} (C) 10000 kg s^{-1} (D) 100000 kg s^{-1}
- The value of escape velocity is maximum for
 (A) Moon (B) Earth (C) Jupiter (D) Mercury
- The moment of inertia for a cylinder is
 (A) mr^2 (B) $\frac{1}{2}mr^2$ (C) $\frac{2}{5}mr^2$ (D) $\frac{1}{12}mr^2$
- The rotational K.E. of a disc is
 (A) $K.E_{\text{rot}} = mv^2$ (B) $K.E_{\text{rot}} = \frac{1}{2}mv^2$ (C) $K.E_{\text{rot}} = \frac{1}{4}mv^2$ (D) $K.E_{\text{rot}} = 2mv^2$
- The Bernoulli's equation is for a fluid which is
 (A) viscous (B) compressible (C) inturbulent flow (D) in steady flow
- In a microwave oven, the waves produced have a wavelength of
 (A) 10 cm (B) 12 cm (C) 14 cm (D) 16 cm
- It becomes difficult to recognize the beats if the difference between the frequencies of the two sounds is more than about
 (A) 6 Hz (B) 8 Hz (C) 4 Hz (D) 10 Hz
- If a string vibrates in four segments at a frequency of 120 Hz , its fundamental frequency will be
 (A) 30 Hz (B) 60 Hz (C) 120 Hz (D) 480 Hz
- The distance between two adjacent dark fringes is equal to
 (A) $\frac{\lambda L}{d}$ (B) $\frac{\lambda d}{L}$ (C) $\frac{dL}{\lambda}$ (D) $\frac{d}{L\lambda}$
- The equation used to determine the speed of light by Michelson is
 (A) $c = 8fd$ (B) $c = 16fd$ (C) $c = \frac{8}{fd}$ (D) $c = \frac{16}{fd}$
- By kinetic theory of gases, the gas molecules are in
 (A) angular motion (B) circular motion (C) random motion (D) linear motion
- The conversion of available heat energy into work by a petrol engine is about
 (A) 10% (B) 15% (C) 20% (D) 25%