

SECTION 'A'

MULTIPLE CHOICE QUESTIONS (16 Marks)

- Q.1 Select the most appropriate answer for each from the given options:
- (i) The magnitude of resultant of two forces of magnitudes 5N and 10N cannot be:
 ☆ 4N ☆ 6N ☆ 9N ☆ 13N
- (ii) If a body moves in a circle, then the angle subtended at the centre of circle by an arc equals to twice of its radius will be:
 ☆ 2° ☆ 57.3° ☆ 80° ☆ 114.6°
- (iii) In a Spectrometer, the focal length of convex lens is equal to the length of its:
 ☆ telescope ☆ obstacles
 ☆ collimator ☆ turntable
- (iv) The point which describes the motion of the whole system or body is known as the:
 ☆ centre of gravity ☆ centre of mass
 ☆ inertia ☆ moment of inertia
- (v) The product of frequency and time period is:
 ☆ 1 ☆ 2 ☆ 3 ☆ 4
- (vi) When a transverse wave travelling through a rare medium is reflected from a dense medium, then phase change produced in it will be equal to:
 ☆ 0° ☆ 90° ☆ 180° ☆ 360°
- (vii) The gravitational constant was determined experimentally by:
 ☆ Newton ☆ Einstein ☆ Cavendish ☆ Maxwell
- (viii) A projectile is thrown upward with a certain velocity. Its time of flight will be minimum, if it is launched at an angle of:
 ☆ 30° ☆ 45° ☆ 60° ☆ 75°
- (ix) $(\hat{i} \times \hat{j}) \cdot (\hat{j} \times \hat{i})$ is:
 ☆ -1 ☆ $\hat{k}$ ☆ 1 ☆ zero
- (x) Two forces which are equal in magnitude but opposite in direction and not acting along the same straight line form a:
 ☆ circle ☆ couple ☆ power ☆ torque
- (xi) If the time interval is very small ($\Delta t \rightarrow 0$), the rate of change of velocity of a body is called:
 ☆ Average acceleration ☆ Acceleration
 ☆ Instantaneous acceleration ☆ Constant acceleration
- (xii) Weber Fechner law is:
 ☆ $1 \propto \log L$ ☆ $L \propto \log I$
 ☆ $1 \propto \frac{1}{\log L}$ ☆ $L \propto I$
- (xiii) if $\vec{F} = 3\hat{i}$ and $\vec{d} = 6\hat{j}$, the work done will be:
 ☆ zero ☆ 2 ☆ 9 ☆ 18
- (xiv) Beats are produced due to:
 ☆ diffraction of waves in time
 ☆ reflection of waves in time
 ☆ interference of waves in time
 ☆ polarization of waves in time
- (xv) The wave front of waves will be spherical when the rays of light are:
 ☆ parallel ☆ perpendicular
 ☆ monochromatic ☆ not parallel
- (xvi) If 'F' be the limiting friction and R be the normal reaction, then the co-efficient of static friction will be equal to:
 ☆ $\frac{F}{R}$ ☆ FR ☆ $\frac{R}{F}$ ☆ $\frac{1}{FR}$
- (xvii) The dimensions of G/g are:
 ☆ $M^0L^1T^{-2}$ ☆ $M^1L^2T^{-2}$ ☆ $M^{-1}L^2T^2$ ☆ $M^{-1}L^2T^0$