

SECTION 'A'

MULTIPLE CHOICE QUESTIONS (33 Marks)

Note: i) This section consist of 33 part questions and all are to be answered. Each question carries ONE mark.

Q.1 Select the most appropriate answer for each from the given options:

- (1) The S.I unit of angular momentum is:
 - ☆ $J-s$ ☆ $\frac{J}{s}$ ☆ $\frac{s}{J}$ ☆ $J-s^2$
- (2) If the velocity of a body is doubled and the mass is reduced to one fourth, the kinetic energy will be:
 - ☆ doubled ☆ unchanged
 - ☆ halved ☆ four fold
- (3) The range of audible sound is:
 - ☆ 1 Hz to 10 Hz ☆ 20 Hz to 20,000 Hz
 - ☆ 21,000 Hz to 24,000 Hz ☆ 25,000 Hz and onwards
- (4) Bragg's law is:
 - ☆ $2d\sin\theta = m\lambda$ ☆ $2m\lambda = d\sin\theta$
 - ☆ $d\sin\theta = m\lambda$ ☆ $d\cos\theta = 2\lambda$
- (5) If $\vec{A} \cdot \vec{B} = 0$, $\vec{A} \times \vec{B} = 0$ and $\vec{A} \neq \vec{0}$ vector, then \vec{B} is:
 - ☆ zero vector ☆ equal to \vec{A}
 - ☆ perpendicular to \vec{A} ☆ not parallel to \vec{A}

- (6) An object if falling through a viscous fluid with terminal velocity. Its velocity will be:
 - ☆ zero ☆ decreased ☆ increased ☆ constant
- (7) The angle between centripetal and tangential accelerations in circular motion is:
 - ☆ 180° ☆ 90° ☆ 0° ☆ 45°
- (8) One kilowatt hour is equal to:
 - ☆ $3.6 \times 10^8 J$ ☆ $3.6 \times 10^6 J$
 - ☆ $3.9 \times 10^6 J$ ☆ $3.6 \times 10^9 J$
- (9) The weight of a man is 600N at the earth, his weight on the moon where $g_m = \frac{g}{6}$ will be:
 - ☆ 3600N ☆ 300N ☆ 100N ☆ 600N
- (10) The dot product of force and velocity is:
 - ☆ work ☆ power ☆ momentum ☆ energy
- (11) Huygen's Principle is used to determine:
 - ☆ the speed of light ☆ position of wave front
 - ☆ polarization ☆ refractive index
- (12) If $\vec{F} = 3\vec{i}$ and $\vec{d} = 6\vec{j}$, then work done will be:
 - ☆ 2J ☆ 9J ☆ 22J ☆ 0J
- (13) A truck covers a distance of 360km in 5 hours, its speed will be:
 - ☆ 180 km/h ☆ 72 km/h ☆ 360 km/h ☆ 36 km/h
- (14) The point which describe the motion of the whole system or body is called:
 - ☆ inertia ☆ centre of mass
 - ☆ centre of gravity ☆ moments of inertia
- (15) Wave front near the point source is:
 - ☆ plane ☆ spherical ☆ conical ☆ cylindrical
- (16) The first Muslim scientist who invented intravenous injection:
 - ☆ Al-Beruni ☆ Ibn-ul-Haitham
 - ☆ Yaqoob-al-Kindi ☆ Ibn-e-Sina
- (17) The bending of light around sharp obstacles is called:
 - ☆ Interference ☆ Polarization
 - ☆ Refraction ☆ Diffraction
- (18) $\vec{i} \cdot (\vec{k} \times \vec{j})$
 - ☆ 1 ☆ -1 ☆ 0 ☆ \hat{i}
- (19) For oscillatory motion of a simple pendulum, restoring force is:
 - ☆ $mg\sin\theta$ ☆ $mg\cos\theta$ ☆ $mg\tan\theta$ ☆ mg
- (20) Dimension of ratio between angular momentum and linear momentum is:
 - ☆ L^{-1} ☆ ML ☆ L ☆ L^{-2}

- (21) If ' M_o ' and ' M_e ' are magnifying powers of objective and eyepiece of a compound microscope respectively, then total magnification will be:
 - ☆ $M_o \times M_e$ ☆ $M_o - M_e$ ☆ $M_o + M_e$ ☆ $\frac{M_o}{M_e}$
- (22) A body pushes a toy car, on a horitontal floor with a force of 10N up to a displacement of 2m, then work done by the gravity on the car is:
 - ☆ 20J ☆ 10J ☆ 5J ☆ 0J
- (23) The acceleration of a projectile at the top of the trajectory will be:
 - ☆ g ☆ $\frac{1}{2}g$ ☆ zero ☆ $2g$
- (24) If a vector has three rectangular components each equal to 'a' the magnitude of vector will be:
 - ☆ $\sqrt{3}a$ ☆ $3a$ ☆ a^3 ☆ $\sqrt{3}a$
- (25) In a spectrometer, parallel beam of light is obtained by:
 - ☆ Beam splitter ☆ Collimator
 - ☆ Diffraction Grating ☆ Prism
- (26) It is not a vector quantity:
 - ☆ Force ☆ Torque ☆ Frequency ☆ Weight
- (27) A ball is dropped from a height of 100m, its acceleration at half of its height will be:
 - ☆ $9.8 m/s^2$ ☆ $4.9 m/s^2$ ☆ $10 m/s^2$ ☆ $5 m/s^2$
- (28) If elevator moves upward with the acceleration 'a', the apparent weight of a body of mass 'm' in elevator will be:
 - ☆ $mg - ma$ ☆ mg ☆ $mg + ma$ ☆ zero
- (29) Pitch of sound depends upon:
 - ☆ Amplitude ☆ Intensity
 - ☆ Frequency ☆ Loudness
- (30) 2nd condition of equilibrium is:
 - ☆ $\Sigma F = 0$ ☆ $\Sigma P = 0$ ☆ $\Sigma r = 0$ ☆ $\Sigma a = 0$
- (31) A force acting on a body is perpendicular to its displacement, the work done is equal to:
 - ☆ Positive ☆ Negative ☆ Zero ☆ Infinite
- (32) Distance between two consecutive nodes in a standing wave is:
 - ☆ $\frac{\lambda}{4}$ ☆ λ ☆ $\frac{\lambda}{2}$ ☆ $\frac{\lambda}{3}$
- (33) The number of significant figures in 2.0305 is:
 - ☆ 4 ☆ 3 ☆ 5 ☆ 2