

Section-A

Multiple Choice Questions (MCQ's)

Q.1 Choose the correct answer for each from the given options:

- (1) Time period is reciprocal of:
(a) Frequency (b) Wave length (c) Velocity (d) Distance
- (2) If mass is attached to a spring then its time period is:
(a) Increases (b) Decreases (c) Remains constant
(d) None of these
- (3) In double slits experiment for constructive interference the condition is:
(a) $d \sin \theta = m\lambda$ (b) $d \sin \theta = (m + \frac{1}{2})\lambda$
(c) $2d \sin \theta = m\lambda$ (d) $2d \sin \theta = (m + \frac{1}{2})\lambda$
- (4) In Michelson's interferometer, the wave length of light is given as:
(a) $\lambda = \frac{x}{m}$ (b) $\lambda = \frac{2x}{m}$ (c) $\lambda = \frac{2x}{m}$ (d) mx^2
- (5) Who proposed wave theory of light:
(a) Kepler (b) Huygens (c) Galileo (d) Issac Newton
- (6) The sound waves having frequency less than 20Hz is called:
(a) Infrasonic (b) ultrasonic (c) audiable (d) None of these
- (7) The unit of power of lens is:
(a) Hertz (b) Bell (c) Dyne (d) Dioeters
- (8) The unit of power of lens is:
(a) Hertz (b) Bell (c) Dyne (d) Dipoters
- (9) The power of a lens be one meter the focal length will be:
(a) 2.5 m (b) 1 diopter (c) 3 dipoter (d) 4 dipoter
- (10) Simple microscope consists of:
(a) One convex lens (b) two convex lens
(c) One concave lens (d) Two concave lens
- (11) Torque is also called:
(a) Moment of force (b) Momentum (c) Moment arm
(d) None of these
- (12) It is the perpendicular distance from the axis of rotation to the direction of force, is called _____
(a) Moment arm (b) Moment of force (c) Angular momentum
(d) None of these
- (13) The magnitude of angular momentum is:
(a) $rF \sin \theta$ (b) $Fd \sin \theta$ (c) $rP \sin \theta$ (d) $Fv \sin \theta$
- (14) The weight of an object would be minimum, when it is placed at the:
(a) Surface of earth (b) Centre of earth
(c) Equator (d) Pole
- (15) The approximate value of the average density of earth is:
(a) $5.5 \times 10^3 \text{ Kg/m}^3$ (b) $6.5 \times 10^3 \text{ Kg/m}^3$
(c) $7.5 \times 10^3 \text{ Kg/m}^3$ (d) $8.5 \times 10^3 \text{ Kg/m}^3$
- (16) The value fo gravitational constant G is:
(a) $6.63 \times 10^{-34} \text{ N.m}^2/\text{Kg}^2$ (b) $6.2 \times 10^{-24} \text{ Nm}^2/\text{Kg}^2$
(c) $6.67 \times 10^{-11} \text{ N.m}^2/\text{Kg}^2$ (d) $6.67 \times 10^{11} \text{ Nm/Kg}^2$
- (17) Pull of the earth on mass of 20 Kg on the surface fo earth is:
(a) 20N (b) 19.6 N (c) 196 N (d) 1.96 N
- (18) Power is defined as, the rate of doing work and is expressed as :
(a) $P \times W \times t$ (b) $P = \frac{\Delta W}{\Delta t}$ (c) $P = F \cdot V$ (d) Both (a) (c)
- (19) $\frac{1}{2}$ horse power = _____
(a) 746 Watts (b) 726 Watts (c) 373 Watts (d) 363 Watts
- (20) S.I Unit of work is:
(a) It possesses maximum P..E (b) Newton second
(c) Newton cm (d) None of these
- (21) A body is performing SHM, at the mean position:
(a) It possesses maximum P.E (b) Its acceleration is maximum
(c) Its acceleration is zero (d) Its velocity is zero
- (22) Acceleration due to gravity near the earth surface is _____ if air friction is ignored.
(a) 980 cm/sec^2 (b) 32 ft/sec^2 (c) 9.8 m/sec^2
(d) All of these
- (23) S.I Unit of momentum is:
(a) Joule (b) Watt (c) Kg m/sec (d) Newton
- (24) Self adjusting force is:
(a) Friction (b) Gravity (c) Centripetal force
(d) Weight
- (25) In the absence of air resistance the horizontal component of velocity _____ during projectile motion:
(a) Increases (b) Decreases (c) Remains constant
(d) None of these
- (26) To get maximum horizontal range, the projective must be launched at an angle of:
(a) 15° (b) 45° (c) 60° (d) 90°
- (27) One radian is the angle subtended at the centre by an arc exactly time graph _____
(a) Half of the circumference of circle (b) Diameter of circle
(c) Circumference of circle (d) Radius of circle
- (28) The projectile moves with uniform velocity, then the distance time graph is:
(a) Hyperbola (b) Parabola (c) curve (d) straight line
- (29) Which of the following types of force cannot do work on a body?
(a) centripetal force (b) Elastic force (c) Gravitational force
(d) Coulomb force
- (30) When body moves along a circular path its velocity:
(a) Remain same (b) becomes zero (c) some time changes
(d) changes continuously
- (31) The force needed to move a body around a circular a circular path is called:
(a) Centripetal force (b) Centripetal acceleration
(c) Centrifugal force (d) Gravitational force
- (32) The turning effect of force is called:
(a) Angular momentum (b) Torque (c) Linear momentum (d) Work
- (33) The branch of physics which deals with the atomic nuclei is called:
(a) Solid state physics (b) Medical physics
(c) Nuclear physics (d) None of these
- (34) Dimensions of work are:
(a) MLT^2 (b) M^2LT^2 (c) ML^2T^{-2} (d) $ML^{-2}T^{-2}$
- (35) The vector product of two equal vector is:
(a) A vector (b) Null vector (c) square of vector
(d) Unit vector
- (36) MT^2L^2 is the dimensions of:
(a) Velocity (b) Momentum (c) Power (d) Torque
- (37) If $\vec{A} = 10\text{N East}$, then $-\vec{A} = -10\text{N}$:
(a) West (b) North (c) South (d) None of these
- (38) The scalar product of two vectors \vec{A} and \vec{B} can be written as:
(a) $\vec{A} \cdot \vec{B} = AB \cos \theta$ (b) $\vec{A} \cdot \vec{B} = AB \sin \theta$ (c) $\vec{A} \cdot \vec{B} = AB \cos \theta$ (d) None of these
- (39) Null vector is a vector having zero magnitude and:
(a) Specific direction (b) Arbitrary direction
(c) No director (d) Opposite director
- (40) The magnitude of vector $2\vec{i} + 3\vec{j} + 6\vec{k}$ is:
(a) 11 (b) 35 (c) 7 (d) 9
- (41) If $\vec{A} = A_x\vec{i} + A_y\vec{j} + A_z\vec{k}$ and $\vec{B} = B_x\vec{i} + B_y\vec{j} + B_z\vec{k}$, then:
(a) $A \times B_x - A_y B_z - A_z B_y$ (b) $A_x B_x + A_y B_y + A_z B_z$
(c) $A_x B_y + A_y B_z + A_z B_x$ (d) $A_x B_z + a_y B_x + A_z B_y$
- (42) In vector product, a vector multiplied with itself will in a _____ magnitude.
(a) Double (b) Zero (c) Half (d) None of these
- (43) The weight of a body falling freely will be _____
(a) mg (b) Zero (c) $mg - 6\pi\eta r$ (d) $mg +$