

## CHAPTER # 3: MOTION AND FORCE

- (1) When velocity time graph is a straight line parallel to time axis then.
- acceleration is const
  - acceleration is variable
  - acceleration is zero
  - velocity is zero
- (2) Area under velocity time graph represent.
- force
  - momentum
  - distance
  - acceleration
- (3) Slope of velocity time graph is.
- acceleration
  - distance
  - force
  - momentum
- (4) Instantaneous and average velocities become equal when body.
- has zero acceleration
  - has uniform acceleration
  - has variable acceleration
  - moves in a circle
- (5) Which law of motion is also called law of inertia?
- 1st law
  - 2nd law
  - 3rd law
  - 4th law
- (6) Inertia of an object is quantitative measure of its.
- Volume
  - Density
  - Mass
  - Temperature
- (7) Momentum depends upon.
- force act on the body
  - mass of the body
  - velocity of the body
  - both mass and velocity of the body
- (8) The dimension of force is.
- $[MLT^{-2}]$
  - $[ML^2T^{-2}]$
  - $[ML^2T^2]$
  - $[ML^{-2}T^{-2}]$
- (9) Which of the following pair has same direction always?
- force, displacement
  - force, velocity
  - force, acceleration
  - force, momentum
- (10) A body is falling freely under gravity. How much distance it falls during an interval of time between 1<sup>st</sup> and 2<sup>nd</sup> seconds of its motion, taking  $g = 10$ ?
- 14 m
  - 20 m
  - 5 m
  - 25 m
- (11) What is the shape of velocity time graph for constant acceleration?
- straight line
  - parabola
  - inclined curve
  - declined curve
- (12) Taking off rocket can be explained by.
- 1<sup>st</sup> law of motion
  - 2<sup>nd</sup> law of motion
  - law of conservation of momentum
  - law of conservation of energy
- (13) Which of the following is not an example of projectile motion.
- A gas filled balloon
  - Bullet fired from gun
  - A football kicked
  - A base ball shot
- (14) Distance covered by a freely falling body in 2 seconds will be.
- 4.9 m
  - 19.6m
  - 39.2m
  - 44.1m
- (15) The trajectory (or path) of a projectile is.
- Straight line
  - Parabola
  - Hyperbola
  - Circle
- (16) A football player will throw a football at maximum distance if the angle of projection is:
- $30^\circ$
  - $45^\circ$
  - $60^\circ$
  - $90^\circ$

- (17) The horizontal range of a projectile, at a certain place, is completely determined by
- the angle of projection
  - the initial velocity of projection
  - the mass of the projectile
  - speed and mass of the projectile
- (18) Range of a projectile on a horizontal plane is same for the following pair of angles:
- $30^\circ$  and  $60^\circ$
  - $20^\circ$  and  $80^\circ$
  - $0^\circ$  and  $45^\circ$
  - $10^\circ$  and  $90^\circ$
- (19) A cricket ball is hit at  $45^\circ$  to the horizontal with K.E. of  $E$ . The K.E. at the highest point is:
- zero
  - $E/2$
  - $E/\sqrt{2}$
  - $E$
- (20) A body covering equal displacement in equal interval of time possesses:
- Variable velocity
  - Uniform acceleration
  - Uniform velocity
  - None of above
- (21) If the slop of velocity-time graph gradually decreases, then the body is said to be moving with:
- Positive acceleration
  - Negative acceleration
  - Uniform velocity
  - Variable velocity
- (22) The total time of flight of projectile is given by:
- $v_i \sin \theta / g$
  - $2v_i \sin \theta / g$
  - $v_i \sin \theta / 2g$
  - $2v_i \sin^2 \theta / g$
- (23) Horizontal range of the projectile is given by the expression  $R = 2v_i^2 \sin 2\theta / g$ . For what value of  $\theta$ , range is maximum:
- $0^\circ$
  - $30^\circ$
  - $45^\circ$
  - $90^\circ$
- (24) The velocity of projectile at its maximum height is:
- $v_i \sin \theta$
  - $v_i \cos \theta$
  - Maximum
  - Zero
- (25) Change in momentum is called:
- Force
  - Pressure
  - Tension
  - Impulse
- (26) When the object is moving towards earth, the value of "g" is taken as:
- Positive
  - Negative
  - Zero
  - None
- (27) The property of a body due to which it opposes its state of rest or uniform motion is called:
- Momentum
  - Inertia
  - Torque
  - Weight

