Chapter-05
Kinematic

1. What should a person do on a freely rotating turn-table to decrease his angular speed?
(A) Brings his hands together
(B) Raises his hands up
(C) Spreads his hands outward
(D) Sits down with raised hands

2. Which of the following particle has maximum momentum, if all particles are moving with a same speed?
(A) Electron   (B) Proton
(C) Deuteron   (D) Alpha prticle

3. Which of the follownig law of conservation applicable on the motion of a rocket?
(A) Conservation of mass
(B) Conservation of charge
(C) Conservation of momentum
(D) Conservtion of energy.

4. When the speed of car is doubled, then what will be the braking force of the car to stop it in the same distance?
(A) Four times   (B) Two times
(C) Half   (D) One-fourth

5. The dimension of which of the following is the same as that of impulse?
(A) Volume
(B) Momentum
(C) Torque
(D) Change in the rate of momentum

6. Rain drops fall from great height. Which among the following statements is true regarding it?
(A) They fall with that ultimate velocity, which are different for different droplets
(B) They fall with same ultimate velocity
(C) Their velocity increases and they fall with different velocity on the earth
(D) Their velocity increases and they fall with same velocity on the earth

7. While catching a ball, a player pulls down his hands to lower the
(A) Force   (B) Momentum
(C) Impulse   (D) Catching time

8. If the velocity-time graph of a particle is represented by $y = mt+c$, then the particle is moving with
(A) Constant speed
(B) Constant velocity
(C) Constant acceleration
(D) Varying acceleration

9. The swing of a spinning cricket ball in air can be explained on the basis of
(A) Sudden change in wind direction.
(B) Buoyancy of air.
(C) Turbulence caused by wind.
(D) Bernoulli's theorem.

10. The spokes used in the wheel of a bicycle increase its
(A) Moment of inertia   (B) Velocity
(C) Acceleration   (D) Momentum

11. The function of ball bearings in a wheel is :
(A) To increase friction
(B) To convert kinetic friction into rolling friction
(C) To convert static friction into kinetic friction
(D) Just for convenience

12. A sphere rolls down on two inclined planes of different angles but same height, it does so
(A) In the same time
(B) With the same speed
(C) In the same time with the same speed
(D) In the same time with the same kinetic energy

13. An athlete runs before long jump to get advantage on
(A) Inertia of motion   (B) Frictional force
(C) Moment of a force   (D) Principle of moments

14. A pilot has to release the bomb to hit a target
(A) Right above the target
(B) Beyond the target
(C) Before the target
(D) None of these

15. A bomb at rest explodes into a large number of tiny fragments. The total momentum of all the fragments.
(A) Is zero
(B) Depends on the total mass of all the fragments
(C) Depends on the speeds of various fragments

(D) Is infinity

16.The slope of a velocity-time graph represents
(A)Acceleration   (B) Displacement
(C) Distance   (D) Speed

17.Railway tracks are banked on curves so that
(A) Necessary centrifugal force may be obtained from the horizontal component of the weight of the train
(B) No frictional force may be produced between the tracks and the wheels of the train
(C) Necessary centripetal force may be obtained from the horizontal component of the weight of the train
(D) The train may not fall down inwards

18.When a running car stops suddenly, the passengers tends to lean forward because of :
(A) Centrifugal force   (B)Inetria of rest
(C) Inertia of motion   (D)Gravitational force

19.A metal ball and a rubber ball, both having the same mass, strike a wall normally with the same velocity. The rubber ball rebounds and the metal ball does not rebound. It can be concluded that:
(A)The rubber ball suffers greater change in momentum
(B)The metal ball suffers greater change in momentum.
(C) Both suffer the same change in momentum
(D) The initial momentum of the rubber ball is greater than that of the metal ball.

20.The motion of the wheels of a bullock-cart while moving on the road is an example of
(A) Oscillatory and rotatory motion
(B) Oscillatory and translatory motion
(C) Translatory and rotatory motion
(D) Translatory motion only

21.The moment of inertia of a body does not depend upon its
(A)Axis of rotation   (B) Angular velocity
(C)Form of mass   (D) Distribution of mass

22.To open a door easily, the handle should be fixed.
(A) Near the hinges
(B)Away from mid-point opposite to hinges
(C)In the middle
(D)None of these

23.A particle is moving in a uniform circular motion with constant speed v along a circle of radius r. The acceleration of the particle is
(A) Zero   (B)a/r
(C) 8   (D) None of these

24.An object covers distance which is directly proportional to the square of the time. Its accelaration is
(A) Increasing   (B) Decreasing
(C) Zero   (D) Constant

25.An object with a constant speed
(A) Is not accelerated
(B) Might be accelerated
(C) Is always accelerated
(D) Also has a constant velocity

26.The average kinetic energy of the molecules of an ideal gas is directly proportional to
(A) Velocity of Molecules
(B) Mass of Molecules
(C) Absolute temperature of the gas
(D) Temperature of environment

27.Why does a cannon recoil after firing?
(A) Conservation of energy
(B) Backward thrust of gases produced
(C) Newton's third law of motion
(D) Newton's first law of motion

28.Rate of change of momentum is
(A) Area   (B) Pressure
(C) Force   (D) Velocity

29.What is impulse equal to?
(A) Change in momentum
(B) Change in force
(C) Change in velocity
(D) Change in acceleration

30.Momentum of an object depends on which factors?
I.Mass of the object   II. Speed of the object
III. Volume of the object
(A) I only   (B) I and II only
(C) I and III only   (D) I, II and III

31. Jet engine works on the principle of conservation of ____.
(A) Heat   (B) Mass
(C) Linear momentum   (D) Angular momentum

32. Which of the following is not a unit of speed?
(A) m/s   (B) km/hr
(C) m2/hr   (D) cm/s

33. The phenomena of raising the outer edge of the curved roads above the inner edge to provide necessary centripetal force to the vehicles to take a safe turn is called ____.
(A) Banking of roads   (B) Cornering of roads
(C) Elevation of roads   (D) Tempering of roads

34. If the speed of an object moving along a straight line keeps changing, its motion is said to be _____.
(A) Uniform   (B) Periodc
(C) Circular   (D) Non- uniform

35. If the speed of an object moving along a straight line is constant, its motion is said to be _____.
(A) Uniform   (B) Periodic
(C) Circular   (D) Non- uniform

36. In the formula average velocity = (u + v) /2, u is the _____.
(A) Final velocity   (B) Initial displacement
(C) Initial velocity   (D) Final displacement

37. The distance-time graph for the motion of an object moving with a constant speed is a _____.
(A) Dot   (B) Circle
(C) Straight Line   (D) Curve

38. If an object moves in a circular path with uniform _____, its motion is called uniform circular motion.
(A) Speed
(B) Time
(C) Velocity
(D) Acceleration