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Class 9 Physics Chapter 2 Kinematics MCQ Quiz Online | Level 1

Class 9 Physics · Chapter 2: Kinematics

Name: _____ Date: _____ Score: _____ / 45

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1. Which branch of physics studies motion without considering its causes?

A) Dynamics
B) Kinematics
C) Thermodynamics
D) Optics

2. An object is at rest if its position with respect to an observer:

A) changes with time
B) keeps increasing
C) does not change with time
D) is always zero

3. Rest and motion are:

A) absolute
B) relative to the observer
C) the same for every observer
D) independent of any reference

4. The three broad types of motion are:

A) circular, random and linear
B) fast, slow and uniform
C) rest, speed and velocity
D) translatory, rotatory and vibratory

5. The motion of the blades of a ceiling fan is:

A) rotatory
B) translatory
C) vibratory
D) random

6. The to and fro motion of a swing about its mean position is:

A) rotatory
B) translatory
C) vibratory
D) random

7. Translatory motion along a straight line is called:

A) circular motion
B) random motion
C) vibratory motion
D) rectilinear motion

8. The motion of a butterfly flying in a garden is an example of:

A) random motion
B) rectilinear motion
C) rotatory motion
D) vibratory motion

9. The motion of a car going around a turn is:

A) rectilinear
B) curvilinear
C) vibratory
D) rotatory

10. Distance is:

A) the shortest straight line between two points
B) a vector quantity
C) the length of the path travelled between two positions
D) the change in velocity

11. Displacement is:

A) the total length of the path
B) a scalar quantity measured in m/s
C) equal to speed multiplied by time
D) the shortest straight directed distance from the initial to the final position

12. The SI unit of distance is:

A) metre
B) second
C) kilogram
D) metre per second

13. An athlete completes one lap of a 400 m track and returns to the starting point. His displacement is:

A) 400 m
B) zero
C) 200 m
D) 800 m

14. A girl walks 3 km west and then 4 km south. The magnitude of her displacement is:

A) 1 km
B) 7 km
C) 5 km
D) 12 km

15. The SI unit of speed is:

A) m
B) m/s^2
C) kg
D) m/s

16. Average speed is equal to:

A) total distance ÷ total time
B) total displacement ÷ total time
C) change in velocity ÷ time
D) total time ÷ total distance

17. The speedometer of a car shows its:

A) average speed
B) instantaneous speed
C) displacement
D) acceleration

18. An object that covers equal distances in equal intervals of time is moving with:

A) variable speed
B) zero speed
C) uniform speed
D) uniform acceleration

19. The speed of light in vacuum is approximately:

A) 3 × 10^6 m/s
B) 3 × 10^5 m/s
C) 343 m/s
D) 3 × 10^8 m/s

20. Velocity is:

A) speed with direction
B) speed without direction
C) distance divided by time
D) the change in speed

21. A satellite moving in a circle at constant speed has variable velocity because its:

A) speed keeps changing
B) direction keeps changing
C) mass keeps changing
D) distance is zero

22. A speed of 72 km/h is equal to:

A) 7.2 m/s
B) 259.2 m/s
C) 20 m/s
D) 72 m/s

23. A car covers 900 m in 30 s. Its average speed is:

A) 20 m/s
B) 27 m/s
C) 0.033 m/s
D) 30 m/s

24. Acceleration is the time rate of change of:

A) velocity
B) distance
C) displacement
D) speed only

25. The SI unit of acceleration is:

A) m/s
B) m/s^2
C) m^2
D) m

26. Negative acceleration (deceleration) means that the velocity is:

A) increasing
B) constant
C) decreasing
D) zero

27. A body has uniform acceleration if it has:

A) equal distances in equal intervals of time
B) zero velocity
C) constant displacement
D) equal changes in velocity in equal intervals of time

28. A car increases its velocity from 10 m/s to 30 m/s in 5 s. Its acceleration is:

A) 4 m/s^2
B) 6 m/s^2
C) 8 m/s^2
D) 20 m/s^2

29. The acceleration due to gravity near the Earth's surface is approximately:

A) 0.98 m/s^2
B) 9.8 m/s^2
C) 98 m/s^2
D) 19.6 m/s^2

30. In the absence of air resistance, all freely falling bodies have:

A) larger acceleration if they are heavier
B) larger acceleration if they are lighter
C) the same acceleration regardless of mass
D) zero acceleration

31. A coin and a piece of paper are dropped together inside a vacuum tube. They:

A) land with the coin first
B) land with the paper first
C) do not fall at all
D) reach the bottom together

32. Who dropped objects of different masses from the Leaning Tower of Pisa?

A) Galileo
B) Newton
C) Einstein
D) Aristotle

33. A stone is dropped from rest. Its speed after 3 s is ($g = 9.8\ m/s^2$):

A) 9.8 m/s
B) 29.4 m/s
C) 19.6 m/s
D) 3 m/s

34. The acceleration due to gravity is taken as negative when an object:

A) falls downward
B) is at rest
C) moves upward against gravity
D) moves horizontally

35. A ball is thrown straight up. At the top of its path, its acceleration is:

A) zero
B) 4.9 m/s^2
C) 19.6 m/s^2
D) 9.8 m/s^2 downward

36. The gradient of a distance-time graph gives:

A) speed
B) acceleration
C) distance
D) displacement

37. A horizontal line on a distance-time graph shows that the body is:

A) moving with uniform speed
B) at rest
C) accelerating
D) decelerating

38. A distance-time graph that curves upward shows:

A) decreasing speed
B) rest
C) increasing speed
D) constant speed

39. The gradient of a speed-time graph gives:

A) speed
B) distance
C) displacement
D) acceleration

40. A horizontal line on a speed-time graph shows:

A) zero acceleration
B) uniform acceleration
C) deceleration
D) rest

41. The area under a speed-time graph gives:

A) acceleration
B) distance travelled
C) speed
D) time

42. The area of the triangle under a speed-time graph is:

A) $v \times t$
B) $v \div t$
C) $\frac{1}{2} \times v \times t$
D) $2 \times v \times t$

43. On a speed-time graph, the speed rises uniformly from 0 to 20 m/s in 10 s. The acceleration is:

A) 20 m/s^2
B) 10 m/s^2
C) 0.5 m/s^2
D) 2 m/s^2

44. A straight line sloping downward on a speed-time graph shows:

A) uniform deceleration
B) uniform acceleration
C) zero acceleration
D) rest

45. A body moves at a constant speed of 6 m/s for 8 s. The distance covered, from the area under the graph, is:

A) 14 m
B) 48 m
C) 0.75 m
D) 2 m

Answer key

1-B 2-C 3-B 4-D 5-A 6-C 7-D 8-A 9-B 10-C

11-D 12-A 13-B 14-C 15-D 16-A 17-B 18-C 19-D 20-A

21-B 22-C 23-D 24-A 25-B 26-C 27-D 28-A 29-B 30-C

31-D 32-A 33-B 34-C 35-D 36-A 37-B 38-C 39-D 40-A

41-B 42-C 43-D 44-A 45-B