

MOTION

Question 1: 1 km/h = _____ m/s

1. $\frac{5}{18}$
2. $\frac{18}{5}$
3. $\frac{50}{3}$
4. $\frac{3}{50}$

Answer: 1

Question 2: The distance (s) in metres travelled by a particle is related to time (t) in seconds by the equation of motion - $S = 10t + 4t^2$. What is the initial velocity of the body?

1. 10 m/s
2. 6 m/s
3. 4 m/s
4. 10 m/s²

Answer: 1

Question 3: For the equation - $S = 10t + 4t^2$ what is the acceleration of the body?

1. 8 m/s²
2. 10 m/s²
3. 4 m/s²
4. 8 m/s

Answer: 1

Question 4: A body moving along a straight line at 20 m/s decelerates at the rate of 4 m/s². After 2 seconds its speed will be equal to

1. 8 m/s
2. 12 m/s
3. 16 m/s
4. - 12 m/s

Answer: 2

Question 5: Give the equation of motion connecting u, v, a and s where the symbols have their usual meaning

1. $v = u + at$
2. $S = ut + \frac{1}{2}at^2$
3. $v^2 - u^2 = 2aS$
4. $a = \frac{v - u}{t}$

Answer: 3

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Question 6: An object moving with a speed of 5 m/s comes to rest in 10 s, after the brakes are applied. What is the initial velocity?

1. zero
2. 5 m/s
3. 15 m/s
4. 50 m/s

Answer: 2

Question 7: A body moving along a straight line at 40 m/s undergoes an acceleration of 4 m/s². After 10 seconds its speed will be

1. 20 m/s
2. 28 m/s
3. 16 m/s
4. 80 m/s

Answer: 4

Question 8: SI unit of acceleration is _____.

1. m/s²
2. km/h²
3. cm/s²
4. km/min²

Answer: 1

Question 9: Retardation is _____.

1. negative acceleration
2. positive acceleration
3. uniform acceleration
4. variable acceleration

Question 10: When an object is moving with uniform velocity, what is its acceleration?

1. zero
2. uniform
3. non-uniform
4. negative

Answer: 1

Answer: 1

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Question 11: In the case of a rectilinear uniform motion, distance-time graph is a

1. parabola
2. straight line
3. curved line
4. rectangle

Answer: 2

Question 12: Speed of 90 km/h when expressed in m/s is .

1. 2.5
2. 25
3. 250
4. 90000

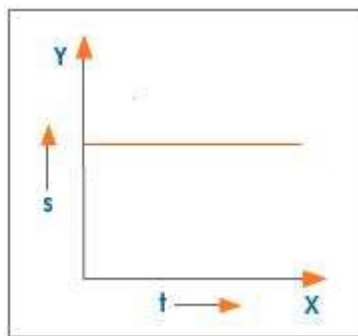
Answer: 2

Question 13: When a graph of one quantity versus another results in a straight line, the quantities are

1. directly proportional
2. constant
3. inversely proportional
4. independent of each other

Answer: 1

Question 14: What does the following S-t graph indicate?



1. uniform speed
2. body is at rest
3. non-uniform speed
4. variable speed

Answer: 2

Question 15: What do you infer, if S-t graphs of two cyclists meet at a point?

1. They collide
2. They pass each other
3. They are at rest
4. They are starting from rest

Answer: 2

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Question 16: Name the physical quantity which we get from a S-t graph.

1. Speed
2. Displacement
3. Distance
4. Time

Answer: 1

Question 17: What is the SI unit of speed?

1. km/h
2. m/s
3. m/min
4. km/s

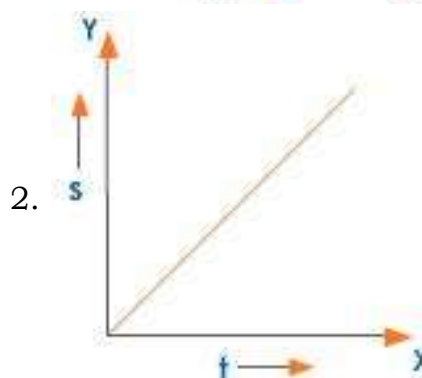
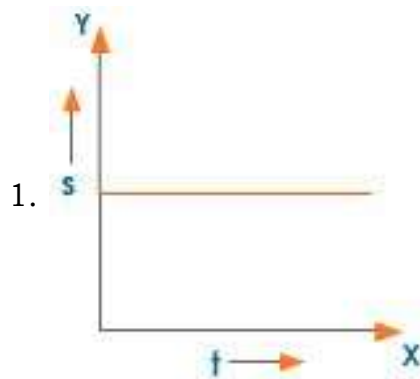
Answer: 2

Question 18: What is the distance covered by a car in 5 h if it is moving with a speed of 35 km/h?

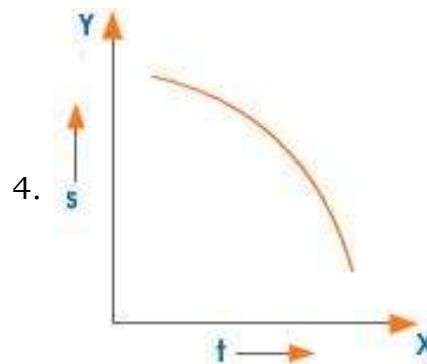
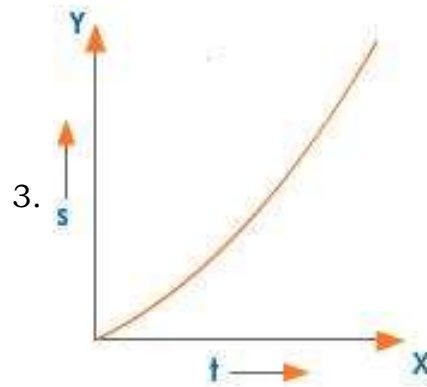
1. 175 km
2. 150 km
3. 7 km
4. 1750 km

Answer: 1

Question 19: The S-t graph for uniform speed is



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Answer: 2

Question 20: The average speed of a car which covers half the distance with a speed of 20 m/s and other half with a speed of 30 m/s in equal intervals of time is _____.

1. 25 m/s
2. 0 m/s
3. 24 m/s
4. 2.4 m/s

Answer: 1

Question 21: Displacement is a _____ quantity.

1. scalar
2. vector
3. derived
4. linear

Answer: 2

Question 22: km / h^2 is a unit of _____ .

1. velocity
2. speed
3. acceleration
4. distance

Answer: 3

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Question 23: The speed-time graph for a particle moving at constant speed is a straight-line _____ to the time axis.

1. parallel
2. perpendicular
3. aligned
4. inclined

Answer: 1

Question 24: When an object moves in a fixed direction with uniform acceleration, the speed-time graph is a _____.

1. parabola
2. straight line
3. ellipse
4. curve

Answer: 2

Question 25: The area under the speed-time graph gives the _____.

1. distance
2. velocity
3. time
4. acceleration

Answer: 1

Question 26: A speed of 90 km/h, expressed in cm s^{-1} is _____.

1. 2.5
2. 2500
3. 300
4. 90

Answer: 2

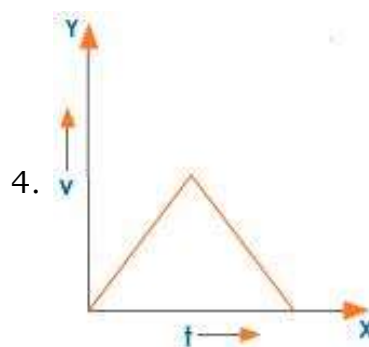
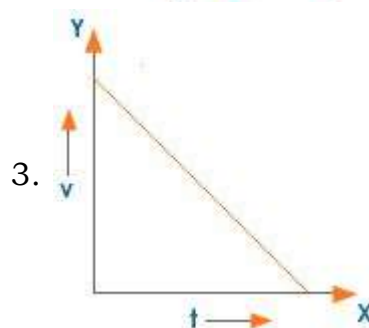
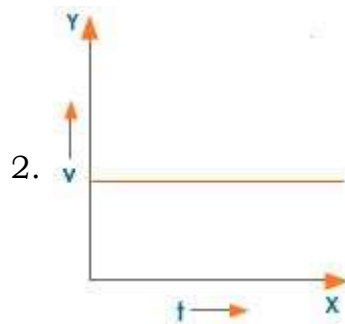
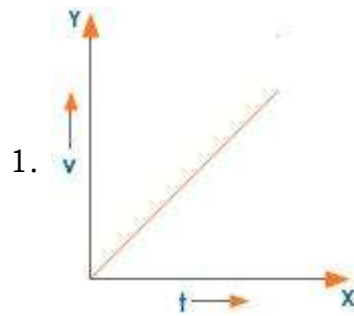
Question 27: When an object of mass 5 kg starts from rest, what is its initial velocity?

1. 0
2. - 5 m/s
3. variable
4. 5
5. 1 m/s

Answer: 1

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Question 28: Identify the v- t graph representing uniform velocity.



Answer: 2

Question 29: Name the physical quantity that is defined as the rate of change of displacement.

1. velocity
2. acceleration
3. distance
4. speed

Answer: 1

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Question 30: An object moves with a constant velocity of 9.8 m/s, its acceleration in m s^{-2} is _____.

1. 9.8 m/s^2
2. zero
3. 0.98 m/s
4. 98 m/s^2

Answer: 2

Question 31: In 12 minutes a car whose speed is 35 km/h travels a distance of

1. 7 km
2. 3.5 km
3. 14 km
4. 28 km

Answer: 1

Question 32: A body moving along a straight line at 20 m/s undergoes an acceleration of 4 m/s^2 . After two seconds its speed will be _____.

1. 8 m/s
2. 12 m/s
3. 16 m/s
4. 28 m/s

Answer: 4

Question 33: A car increases its speed from 20 km/h to 50 km/h in 10 seconds. Its acceleration is _____.

1. 30 m/s^2
2. 3 m/s^2
3. 18 m/s^2
4. 0.83 m/s^2

Answer: 4

Question 34: When the distance covered by an object is directly proportional to time, it is said to travel with _____.

1. zero velocity
2. constant speed
3. constant acceleration
4. uniform acceleration

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Answer: 2

Question 35: Negative acceleration means an object is moving with _____.

1. increasing speed
2. decreasing speed
3. uniform speed
4. constant speed

Answer: 2

Question 36: Motion along a straight line is called _____ motion.

1. rectilinear motion
2. circular motion
3. oscillatory motion
4. parabolic

Answer: 1

Question 37: Distance-time graph is a straight line for _____ motion.

1. variable
2. non uniform
3. rectilinear
4. circular

Answer: 3

Question 38: A car is moving with a speed of 36 km/h. Its speed in m/s is _____.

1. 10
2. 100
3. 2
4. 1

Answer: 1

Question 39: A car starts from rest and covers a distance of 100 m in one second with uniform acceleration. Its acceleration is _____.

1. 100 m/s^2
2. 50 m/s^2
3. 200 m/s^2
4. 100 m/s

Answer: 1

Question 40: Which of the following is a vector quantity?

1. area
2. length
3. distance
4. displacement

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Answer: 4

Question 41: The slope of a v-t graph gives _____.

1. acceleration
2. velocity
3. speed
4. distance

Answer: 3

Question 42: The physical quantity describing motion and whose measure is the product of distance travelled and the time taken to travel that distance is _____.

1. speed
2. mass
3. weight
4. displacement

Answer: 1

Question 43: If you are travelling with a velocity of 25 m/s, how long will you take to travel 700 m?

1. 25 s
2. 28 s
3. 25 min
4. 2.8 s

Answer: 2

Question 44: Name the instrument used to measure instantaneous speed of a vehicle.

1. accelerator
2. speedometer
3. ammeter
4. multimeter

Answer: 2

Question 45: A body covers a distance S in time t. What is its speed?

1. S/t
2. t/S
3. $S \times t$
4. Zero

Answer: 1