Motion in a Straight Line

Question 1.
A boy starts from a point A, travels to a point B at a distance of 3 km from A and returns to A. If he takes two hours to do so, his speed is
(a) 3 km/h
(b) zero
(c) 2 km/h
(d) 1.5 km/h

▼ Answer

Answer: (a) 3 km/h

Question 2.
A body starts from rest and travels with uniform acceleration a to make a displacement of 6 m. If its velocity after making the displacement is 6 m/s, then its uniform acceleration a is
(a) 6 m/s^2
(b) 2 m/s^2
(c) 3 m/s^2
(d) 4 m/s^2

▼ Answer

Answer: (c) 3 m/s^2

Question 3.
Which one of the following is the unit of acceleration?
(a) m/s
(b) m/s^2
(c) km/hr
(d) cm/s

▼ Answer

Answer: (b) m/s^2

Question 4.
The dimensional formula for speed is
(a) T^{-1}
(b) LT^{-1}
(c) $L^{-1}T^{-1}$
(d) $L^{-1}T$

▼ Answer

Answer: (b) LT^{-1}

Question 5.
A body starts from rest and travels for t second with uniform acceleration of 2 m/s^2. If the displacement made by it is 16 m, the time of travel t is
(a) 4 s
(b) 3 s

(c) 6 s
(d) 8 s

▼ Answer

Answer: (b) 3 s

Question 6.
The dimensional formula for acceleration is
(a) [LT2]
(b) [LT?2]
(c) [L2T]
(d) [L2T2]

▼ Answer

Answer: (b) [LT?2]

Question 7.
A body starts from rest and travels for five seconds to make a displacement of 25 m .if it has travelled the distance with uniform acceleration a then a is
(a) 3 m/s²
(b) 4 m/s²
(c) 2 m/s²
(d) 1 m/s²

▼ Answer

Answer: (c) 2 m/s²

Question 8.
A 180 metre long train is moving due north at a speed of 25 m/s. A small bird is flying due south, a little above the train, with a speed of 5 m/s. The time taken by the bird to cross the train is
(a) 10 s
(b) 12 s
(c) 9 s
(d) 6 s

▼ Answer

Answer: (d) 6 s

Question 9.
The dimensional formula for velocity is
(a) [LT]
(b) $[LT^{-1}]$
(c) [L2T]
(d) $[L^{-1}T]$

▼ Answer

Answer: (b) $[LT^{-1}]$

Question 10.
A body starts from rest and travels with an acceleration of 2 m/s². After t seconds its velocity is 10 m/s. Then t is

(a) 10 s
(b) 5 s
(c) 20 s
(d) 6 s

▼ Answer

Answer: (b) 5 s

Question 11.
The dimensional formula for velocity is
(a) [LT]
(b) $[LT^{-1}]$
(c) [L2T]
(d) $[L^{-1}T]$

▼ Answer

Answer: (b) $[LT^{-1}]$

Question 12.
A body starts from rest and travels with uniform acceleration of 2 m/s^2. If its velocity is v after making a displacement of 9 m, then v is
(a) 8 m/s
(b) 6 m/s
(c) 10 m/s
(d) 4 m/s

▼ Answer

Answer: (b) 6 m/s

Question 13.
Which one of the following is the unit of velocity?
(a) kilogram
(b) metre
(c) m/s
(d) second

▼ Answer

Answer: (c) m/s

Question 14.
Which one of the following is the unit of acceleration?
(a) m/s
(b) m/s^2
(c) km/hr
(d) cm/s

▼ Answer

Answer: (b) m/s^2

Question 15.
The dimensional formula for acceleration is

(a) [LT2]
(b) [LT?2]
(c) [L2T]
(d) [L2T2]

▼ Answer

Answer: (b) [LT?2]

Question 16.
A boy moves on a circular distance of radius R. Starting from a point A he moves to a point B which is on the other end of the diameter AB. The ratio of the distance travelled to the displacement made by him is
(a) ∏/2
(b) ∏
(c) 2∏
(d) 4∏

▼ Answer

Answer: (a) ∏/2

Question 17.
A boy starts from a point A, travels to a point B at a distance of 3 km from A and returns to A. If he takes two hours to do so, his speed is
(a) 3 km/h
(b) zero
(c) 2 km/h
(d) 1.5 km/h

▼ Answer

Answer: (a) 3 km/h

Question 18.
A boy starts from a point A, travels to a point B at a distance of 1.5 km and returns to A If he takes one hour to do so, his average velocity is
(a) 3 km/h
(b) zero
(c) 1.5 km/h
(d) 2 km/h

▼ Answer

Answer: (a) 3 km/h

Question 19.
A body starts from rest and travels for t second with uniform acceleration of 2 m/s^2. If the displacement made by it is 16 m, the time of travel t is
(a) 4 s
(b) 3 s
(c) 6 s
(d) 8 s

▼ Answer

Answer: (a) 4 s

Question 20.
A body starts from rest and travels with uniform acceleration on a straight line . If its velocity after making a displacement of 32 m is 8 m/s , its acceleration is
(a) 1 m/s²
(b) 2 m/s²
(c) 3 m/s²
(d) 4 m/s²

▼ Answer

Answer: (a) 1 m/s²