Chapter-1

Worksheet-2

Section 1

Q1. Define the term "distance".

Q2. Under what condition is distance and the magnitude of the displacement equal?

Q3. What do you mean by uniform motion?

Q4. An object starts with initial velocity u and attains final velocity V. The velocity is changing at a uniform rate.
What is the formula for calculating average speed in this situation ?

Q5. A physical quantity measured is -10 m s^{-1}. Is it a speed or velocity?

Q6. Give an example of a motion in which the acceleration is against the direction of motion.

Q7. What will you say about the motion of a body if its distance-time graph is a straight line having a constant angle with time axis?

Q8. What can you say about the motion of a body if its velocity-time graph is a straight line parallel to time axis?

Q9. Define circular motion.

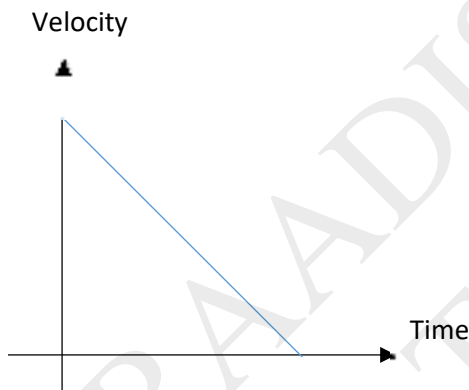Q10. Can a body exist in a state of absolute rest or of absolute motion? Explain with example.

Section 2

Q11. A boy goes from A to B with a velocity of 20 m/min and comes back from B to A with a velocity of 30 m/min. The average velocity of the boy during the whole journey is

a) 24 m/min
b) 25 m/min
c) Zero
d) 20 m/min
   Answer: c

Q12. Velocity-time graph of an object is given below. The object has

a) Uniform velocity
b) Uniform Acceleration
c) Variable Acceleration
d) Uniform Retardation
   Answer: d

Q13. A body is projected vertically upward from the ground. Taking vertical upward direction as positive and point of projection as origin, the sign of displacement of the body from the origin when it is at height h during upward and downward journey will be

a) +, +
b) +, -
c) -, +
d) -, -
   Answer: a

Q14. According to the given velocity-time graph, the object

Velocity

Time
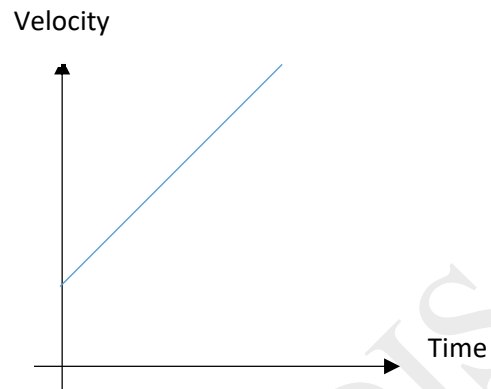
a) Is moving with uniform velocity
b) Has some initial velocity
c) Is moving uniformly with some initial velocity
d) Is at rest
   Answer: b

Q15. The ratio of speed to the magnitude of velocity when the body is moving in one direction is

a) Less than one
b) Greater than one
c) Equal to one
d) Greater than or equal to one
   Answer: a

Q16. Which of the following situations is possible?

a) An object can have acceleration, but constant velocity.
b) The velocity of an object may be zero but acceleration is not zero.

c) Distance and the magnitude of displacement are equal in circular motion.

d) Average speed and the magnitude of average velocity are always equal in circular motion.

Answer: b
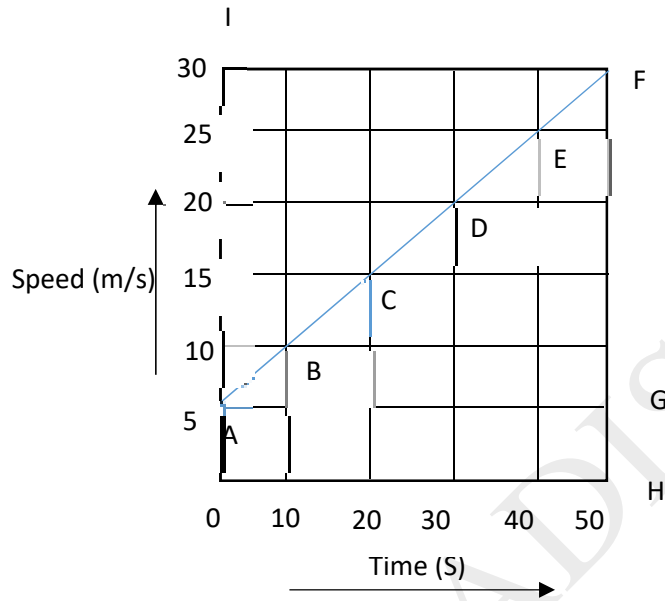
Q17. A particle is moving in a circular path of radius r.
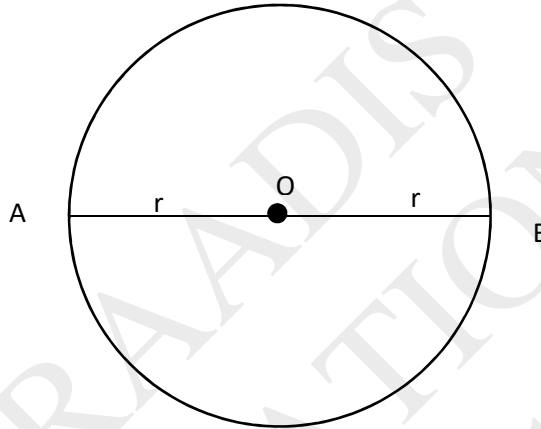
The displacement after half a circle would be

a) 0
b) πr
c) 2r
d) 2πr

Answer: c

Q18. The speed - time graph of a car is given here. Using the data in the graph calculate the total distance covered by the car.

a) 1250 m
b) 625 m
c) 875 m
d) 1500 m
Answer: c

Q19. A car of mass 1000 kg is moving with a velocity of 10 m/s. If the velocity-time graph for this car is a horizontal line parallel to the time axis, then the velocity of the car at the end of 25 s will be:

a) 40 m/s
b) 25 m/s
c) 10 m/s
d) 250 m/s
Answer: c

Q20. A car is travelling at a speed of 90 km/h. Brakes are applied so as to produce a uniform acceleration of -0.5 m/s^2. Find how far the car will go before it is brought to rest?

a) 8100 m
b) 900 m
c) 4050 m
d) 625 m

Answer: d