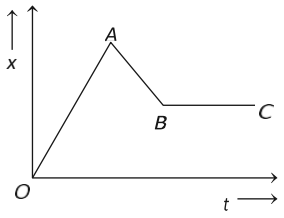
BEDELE IFA BORU SPECIAL BOARDING SECONDARY SCHOOL GRADE 9TH PHYSICS WORK SHEET IN 2018 FIRST SEMISTER.

Part I

Given x-t graph represents the motion of an object. Match the Column A (parts of graph) with Column B (representation) and select the correct option from the codes given below.



Column A	**Column B**
1. Part OA of graph	A. Positive velocity
2. Part AB of graph	B. Object at rest
3. Part BC of graph	C. Negative velocity
4. Point A in the graph	D. Change in direction of motion

Part II. Choose the best letter from the given alternative

5. The unit of acceleration can be expressed as:

   A. m^2/s B. m/s^2 C. m/s D. $kg.m/s^2$

6. Which of the following lists represents a set of vector quantities?
   A. Distance, time, energy, power, density, current.
   B. Work, area, volume, temperature, mass, speed.
   C. Length, Weight, force, velocity, displacement, acceleration.
   D. Weight, force, velocity, displacement, acceleration.
7. Which of the following is not a proper laboratory safety practice?
   A. Wearing goggles.
   B. Avoiding food and drinks in the lab.
   C. Reporting accidents immediately
   D. Eating and drinking in the laboratory.
8. Which of the following best defines motion?
   A. The change in an object's position with time relative to a reference point.
   B. The movement of an object in a circular path.
   C. The force acting on an object due to gravity.
   D. The distance travelled by an object per unit time.
9. Which of the following is scalar quantity?
   A. Displacement. B. Distance. C. Velocity. D. Acceleration.
10. Displacement is :
   A. The total distance travelled.
   B. The shortest distance between the initial and final positions.
   C. Always greater than or equal to the distance travelled.
   D. A scalar quantity.

11. Which of the following is an example of one-dimensional motion?

(a) Landing of an aircraft (b) Earth revolving around the sun

(c) Motion of wheels of moving train (d) Train running on a straight track

12. The displacement of a car is given as - 240 m, here negative sign indicates

A. Direction of displacement B. negative path length

C. Position of car at that point D. no significance of negative sign

13. Chala starts from his home and walks 50 m towards north, then he turns towards east and walks 40 m and then reaches his school after moving 20 m towards south. Then, his displacement from his home to school is

(a) 50 m (b) 110 m (c) 80 m (d) 40 m

14. The sign (+ ve or - ve) of the average velocity depends only upon

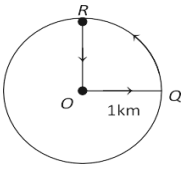
A. the sign of displacement B. the initial position of the object

C. the final position of the object D. None of the above

15. Find the average velocity, when a particle completes the circle of radius 1m in 10 s.

(a) 2m/s (b) 3.14 m/s (c) 6.28 m/s (d) zero

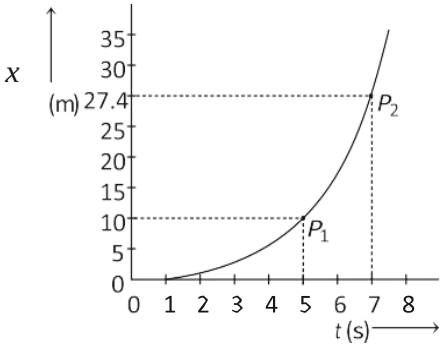
16. A runner starts from O and comes back to O following path OQRO in 1h. What is his net displacement and average speed?



A. 0,3.57 km/h B. 0,0 km/h

C. 0,2.57 km/h D. 0,1 km/h

17. In figure, displacement-time (x – t) graph given below, the average velocity between time t = 5s and t = 7s is



A. 8 ms^{-1}

B. 8.7 ms^{-1}

C. 7.8 ms^{-1}

D. 13.7 ms^{-1}

18. A particle moves in a straight line. It can be accelerated

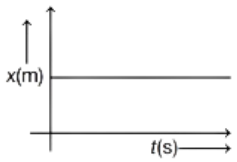
A. only, if its speed changes by keeping its direction same

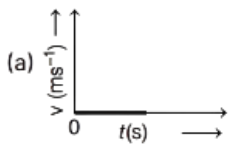
B. only, if its direction changes by keeping its speed same

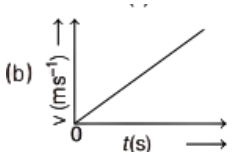
C. Either by changing its speed or direction

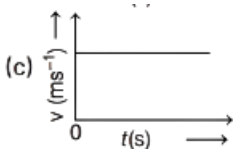
D. None of the above

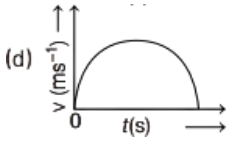
19. For the x-t graph given below, the v -t graph is shown correctly in



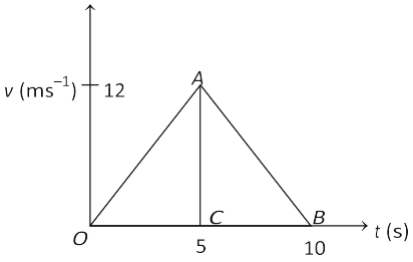








20. The speed-time graph of a particle moving along a fixed direction is as shown in the figure. The distance traversed by the particle between t = 0 s to t = 10 s is



A. 20 m B. 40 m C. 60 m D. 80 m

21. The slope of the straight line connecting the points corresponding to (v_2 , t_2) and (v_1 , t_1) on a plot of velocity versus time gives

A. average velocity B. average acceleration

C. instantaneous velocity D. None of the above

22. A motion of a body is said to be ……, if it moves along a straight line in any direction.

A. one-dimensional B. two dimensional

C. three-dimensional D. All of the above

23. The numerical ratio of displacement to the distance covered by an object is always equal to or less than …… A. 1 B. Zero C. Both A and B D. infinity

24. The distance-time graph of …… is a straight line.

A. uniform motion B. non-uniform motion

B. uniform acceleration D. None of the above

25. Which of the following statement is correct?

A. The magnitude of average velocity is the average speed.

B. Average velocity is the displacement divided by time interval.

C. When Speed of particle is constant, and then motion is called as uniformly accelerated motion. D. When a particle returns to its starting point, its displacement is non-zero.

26. Displacement of an object can be

A. Positive B. negative C. zero D. All of the above

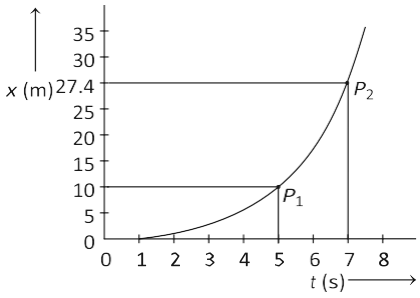
27. A 250 m long train is moving with a uniform velocity of 45 km/h The time taken by the train to cross a bridge of length 750 m is

(a) 56 s (b) 68 s (c) 80 s (d) 92 s

28. A truck requires 3 hr to complete a journey of 150 km. What is average speed?

(a) 50 km/h (b) 25 km/h (c) 15 km/h (d) 10 km/h

29. In the following graph, average velocity is geometrically represented by



A. length of the line P_1 P_2

B. slope of the straight line P_1 P_2

C. slope of the tangent to the curve at P_1

D. slope of the tangent to the curve at P_2

30. 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

Part III. Work out with necessary steps

31. A vehicle travels half the distance l with speed v_1 and the other half with speed v_2, then prove it's $v_{av} = \frac{2V_1V_{21}}{V_1+V_2}$