



Instructions

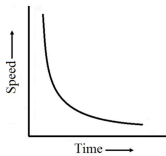
1. Draw images for reference ( or wherever needed)
2. Make sure to write in good handwriting
3. New section on new page
4. Honesty is the best policy.

SECTION-A

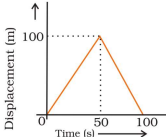
- Q1. Larger the slope of a displacement-time graph: **1 Mark**  
 A Lesser the velocity      B Higher the velocity  
 C Lesser the acceleration      D Higher the acceleration
- Q2. Which of the following vehicles is undergoing a deceleration? **1 Mark**  
 A A car driving straight to the east on a road at a constant speed      B A truck rounding a corner at a constant speed  
 C A van slowing down as it approaches a stop sign      D None of these
- Q3. Length of the straight line joining the initial to the final positions of a moving body is known as its: **1 Mark**  
 A Distance      B Displacement      C Position      D None of these
- Q4. The splash is heard 2.05s after the stone is dropped into a well of depth 19.6m. The velocity of sound is? **1 Mark**  
 A  $342\text{ms}^{-1}$       B  $372\text{ms}^{-1}$       C  $392\text{ms}^{-1}$       D  $352\text{ms}^{-1}$
- Q5. Which of the following situations is possible? **1 Mark**  
 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.
- Q6. The numerical ratio of displacement to distance for a moving object is: **1 Mark**  
 A Always less than 1.      B Always equal to 1.      C Always more than 1.      D Equal or less than 1.
- Q7. Assertion (A): The graph between two physical quantities P and Q is straight line, when P/Q is constant. **1 Mark**  
 Reason (R): The straight line graph means that P is proportional to Q or P is equal to constant multiplied by Q.  
 A Both assertion and reason are true and reason is the correct explanation of assertion.      B Both assertion and reason are true but reason is not the correct explanation of assertion.  
 C Assertion is true but reason is false.      D Both Assertion and Reason are false.
- Q8. Fill in the blanks with suitable words: **1 Mark**  
 Displacement is a \_\_\_\_\_ quantity whereas distance is a \_\_\_\_\_ quantity.
- Q9. Fill in the following blanks with suitable words: **1 Mark**  
 If a body moves with uniform velocity, its acceleration is \_\_\_\_\_.
- Q10. Fill in the blanks. **1 Mark**  
 A bus starting from rest attains a velocity of 54km/h in 60s, its acceleration is \_\_\_\_\_.
- Q11. We calculate average speed when the body is in non-uniform motion. [True/ False] **1 Mark**
- Q12. On a straight line path, speed of a body is equal to its velocity. [True/ False] **1 Mark**
- Q13. What is the SI unit of retardation? **1 Mark**
- Q14. State whether distance is a scalar or a vector quantity. **1 Mark**
- Q15. Name the physical quantity obtained by dividing 'Distance travelled' by 'Time taken' to travel that distance. **1 Mark**
- Q16. State whether displacement is a scalar or a vector quantity. **1 Mark**
- Q17. What does the odometer of an automobile measure? **1 Mark**
- Q18. Name the type of motion in which a body has a constant speed but not constant velocity. **1 Mark**

SECTION-B

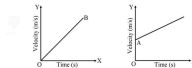
- Q19. What is meant by: **2 Marks**  
 1. Average speed  
 2. Uniform speed?
- Q20. Explain the meaning of the following equation of motion: **2 Marks**  
 $v = u + at$   
 where symbols have their usual meanings.
- Q21. Give one similarity and one dissimilarity between the two graphs. **2 Marks**



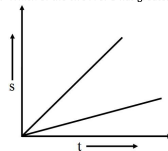
- Q28. A girl walks along a straight path to drop a letter in the letterbox and comes back to her initial position. Her displacement-time graph is shown in Fig. Plot a velocity-time graph for the same. **4 Marks**



- Q29. An object is dropped from rest at a height of 150m and simultaneously another object is dropped from rest at a height 100m. What is the difference in their heights after 2s if both the objects drop with same accelerations? How does the difference in heights vary with time? **5 Marks**



- Q22. Which of the two A or B has greater velocity in the following? Give reason for your reply. **2 Marks**

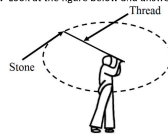


- Q23. Write the three equations of uniformly accelerated motion. Give the meaning of each symbol which occurs in them. **2 Marks**

- Q24. Derive the formula:  $s = ut + \frac{1}{2}at^2$ , where the symbols have usual meanings. **3 Marks**

- Q25. The displacement of a moving object in a given interval of time is zero. Would the distance travelled by the object also be zero? Justify your answer. **3 Marks**

- Q26. Look at the figure below and answer the following questions: **3 Marks**



1. Name the kind of motion of the stone.
2. Is this an example of accelerated motion? Why?
3. Name the force that keeps the stone in its path.
4. What is the direction of this force? Draw it in your answer sheet.

SECTION-C

- Q27. What type of motion is represented by each one of the following graphs? **4 Marks**

