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Questions:

Problems

1. An object travels 16 m in 4 s and then another 16 m in 2 s. What is the average speed of the object?
2. A sound is heard 5 s later than the lightning is seen in the sky on a rainy day. Find the distance of location of lightning? Given the speed of sound = 346 ms^{-1}
3. The brakes applied to a car produce an acceleration of 6 ms^{-2} in the opposite direction to the motion. If the car takes 2 s to stop after the application of brakes, calculate the distance traveled during this time.
4. A 900 kg car moving at 10 ms^{-1} takes a turn around a circle with a radius of 25 m. Determine the acceleration and the net force acting upon the car.

IV. ANSWER THE FOLLOWING

5. Derive equations of motion by graphical method.
6. Explain different types of motion.

III. ANSWER THE FOLLOWING (ANY 3) COMPULSORY 16

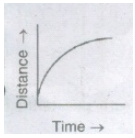
7. Define velocity?
8. Distinguish distance and displacement.
9. What do you mean by uniform motion?
10. Compare speed and velocity?
11. What do you understand about negative acceleration?
12. Is the uniform circular motion accelerated? Give reasons for your answer?
13. What is meant by uniform circular motion? Give two examples of uniform circular motion.

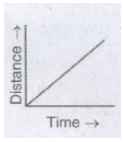
Fill in the blanks

14. Area under velocity – time graph shows _____

I. CHOOSE THE CORRECT ANSWER

15. Which of the following graph represents uniform motion of a moving particle?

(a) 

(b) 

(c) 

(d) 

16. The area under velocity – time graph represents the
    (a) velocity of the moving object (b) displacement covered by the moving object (c) speed of the moving object (d) acceleration of the moving object
17. Which one of the following is most likely not a case of uniform circular motion?
    (a) Motion of the Earth around the Sun (b) Motion of a toy train on a circular track (c) Motion of a racing car on a circular track.
    (d) Motion of hours' hand on the dial of the clock
18. The centrifugal force is
    (a) Real force (b) The force of reaction of centripetal force (c) Virtual force (d) Directed towards the centre of the circular path.