SAINIK SCHOOL AMARAVATHINAGAR

HOLIDAY HOME WORK 2019-2020

CLASS : IX   **SUBJECT : PHYSICS**

S. NO	TOPIC	ACTIVITY	TIME PERIOD	LEARNING OUTCOMES	ANNEXTURE NO.
1	DISTANCE AND DISPLACEMENT	QUESTIONS AND ANSWERS	1 HR	UNDERSTANDING PROBLEM SOLVING SKILLS	A
2	SPEED AND VELOCITY	QUESTION AND ANSWERS	1 HR	PROBLEM SOLVING SKILLS	B
3	GRAPHICAL REPRESENTATION	QUESTION S AND ANSWERS	6 HRS	UDERSTANDING APPLICATIONS ANALYSIS	C
4	DISTANCE TIME GRAPH	PROJECT WORK	5 HRS	UNDERSTANDING APPLICATIONS ANALYSIS	D

ANNEXTURE:

A   SIMPLE CALCULATIONS - 2

B   NUMERICALS ON SPEED AND VELOCITY - 3

C   NUMERICALS ON GRAPHS - 4

D   PLOTING A GRAPH AND RELATIVE QUESTIONS - 3

TEACHER'S NAME   : Mr P G GNANADURAI   **TEACHER'S SIGNATURE**
             :

RECOMMENDED BY   **APPROVED BY**

VICE PRINCIPAL   **PRINCIPAL**

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ANNEXTURE: A

1   A particle moves three quarters of a circle of radius r. What is the magnitude of its displacement?

2   In a long distance race, the athletes were expected to take four rounds of the track such that the line of finish was same as the line of start. Suppose the length of the track was 200 m.

       (a) What is the total distance to be covered by the athletes?

       (b) What is the displacement of the athletes when they touch the finish line?

       (c) Is the motion of the athletes uniform or non-uniform? Justify

       (d) Is the displacement of an athlete and the distance moved by him at the end of the race is equal?

ANNEXTURE: B

3   A frog hops along a straight line path from point A to point B in 10 s and then turns and hops to point C in another 5 s. Calculate the average speed and average velocity of the frog for the motion between

       (a) A to B

       (b) A to C through C

4   On a 100 Km track. A train travels the first 30 Km at a uniform speed of 30 Km/h. How fast must the train travel the next 70 Km so as to average 40 Km/h for the entire trip?

5   A bus starting from rest moves with a uniform acceleration of 0.1 m/s^2 for two minutes. Find the velocity acquired and the distance travelled?

ANNEXTURE: C

6 Draw vt graph for a body moving with uniform velocity. Hence show that the area under the vt graph gives the distance travelled by the body in a given time interval.

7 Velocity time graph for the motion of an object in a straight path is a straight line parallel to the time axis.

  (a) Identify the nature of motion of the body.

  (b) Find the acceleration of the body.

  (c) Draw the shape of distance time graph for this type of motion.

8 An object starts linear motion with a velocity u and under uniform acceleration a it acquire a velocity v in time t. Draw its velocity- time graph and obtain three equations of motion graphically.

9 A motorcyclist riding motorcycle A who is travelling at 36 Km/h and applies brakes and stops the motorcycle in 10 s. Another motorcyclist of motorcycle B who is travelling at 18 Km/h applies the brakes and stops the motorcycle in 20 s. Plot velocity- time graph for the two motorcycles. Which of the two motorcycles travelled farther before it came to stop?

ANNEXTURE : D

10 Plot a distance time graph for the bus/train/flight you travel from one place to the other place. Calculate the average speed between the stops and the average speed of the bus/train/flight in your journey.

11 In your everyday life you come across a range of motions in which

  (a) acceleration is in the direction of motion

  (b) acceleration is against the direction of motion

  (c) acceleration is uniform

  (d) acceleration is non uniform

 Can you identify one example each of the above type of motion?

12 Explain how man made satellite is revolving around the earth in an orbit with the help of related pictures. Does the satellite accelerates? Justify.