Class IX Physics
Vacation Worksheet-2

1.Define acceleration and state its SI unit. For motion along a straight line, when do we consider the acceleration to be (i) positive (ii) negative? Give an example of a body in uniform acceleration.

2.   Find the total displacement of the body from the following graph:
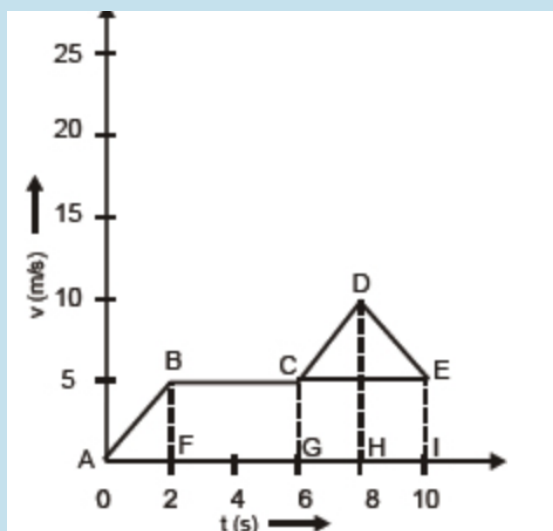
3.   A car travels at 54 km/h for first 20 s, 36 km/h for next 30 s and finally 18 km/h for next 10 s. Find its average speed.

4.   Define acceleration and give its SI unit. When is acceleration of a body negative? Give two examples of situations in which acceleration of the body is negative.

5.   Distinguish between uniform motion and non, uniform motion. Is uniformly accelerated motion uniform motion? Give one example each of uniform and non-uniform motion.

6.   The speedometer readings of a car are shown below. Find the acceleration of the car and its displacement.

Time   Speedometer
9:25 am 36 km/h
9:45 am 72 km/h

7.   Define uniform circular motion and give example of it. Why is it called accelerated motion?

8. The graph given alongside shows how the speed of a car changes with time.

   (i)   What is the initial speed of the car?

(ii) What is the maximum speed attained by the car?

(iii) Which part of the graph shows zero acceleration?

(iv) Which part of the graph shows varying retardation?

(v) Find the distance travelled in first 8 hours.
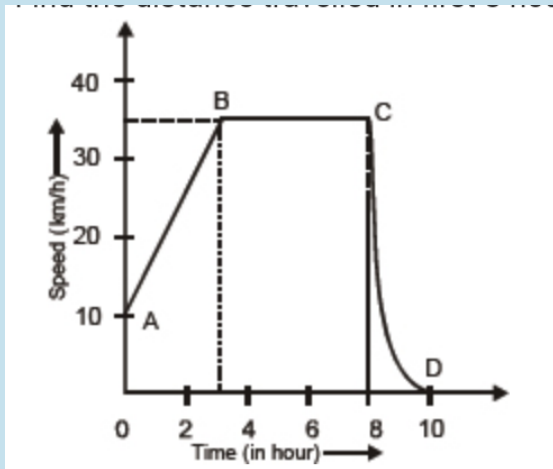
9. Study the velocity-time graph and calculate.

(a) The acceleration from A to B

(b) The acceleration from B to C

(c) The distance covered in the region ABE

(d) The average velocity from C to D

(e) The distance covered in the region BCFE
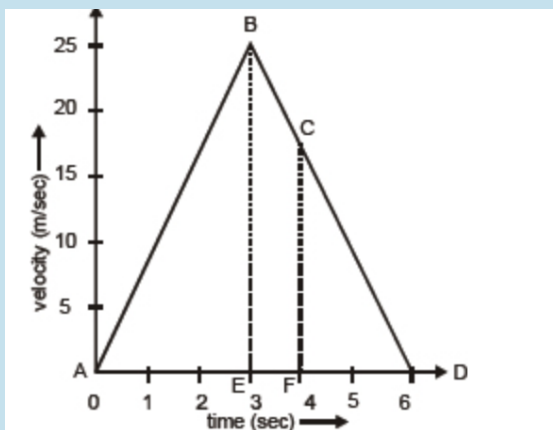
10. The following table gives the data about motion of a car.

Time (h)	11.00	11.30	12.00	12.30	1.00
Distance (km)	0	30	30	65	100

Plot the graph.

(i) Find the speed of the car between 12.00 hours and 12.30 hours.

(ii) What is the average speed of the car?

(iii) Is the car's motion an example of uniform motion? Justify.

11. (a) Derive the equation of motion v = u +at, using graphical method.

(b) A train starting from rest attains a velocity of 72 km/h in 5 minutes.

Assuming the acceleration is uniform, find

(i)   the acceleration.

(ii)   the distance travelled by the train for attaining this velocity.