Provincial Department Of Education-Sabaragamuwa-Week School

Week- January III

Subject- Science

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Grade - 10

Motion in a Straight Line

1) Fill in the blanks of the following statements regarding distance, displacement, speed, acceleration, velocity.
(i) The shortest length between initial point and final point along a certain direction when an object is moving is……
(ii) The length of the path of a certain object, when an object is moving is……
(iii) The distance moved by an object in unit time is ……
(iv) The rate of change of distance is …….
(v) The rate of change of velocity is …….

2) Following represents the data of the movement of an object in 4 seconds. Complete the following statements using this data.

Time (s)	0	1	2	3	4
Distance(m)	0	5	10	15	20

(i) The distance moved in 1st second = …….
(ii) The distance moved in 2nd second = …….
(iii) The distance moved in 3rd second = …….
(iv) The distance moved in 4th second = …….

- This expresses that the object travels same distance in every second. This is known as ……. Or ……

3) Following represents the data of the movement of a motor vehicle in 4 seconds. Complete the following statements using this data.

Time (s)	0	1	2	3	4
Distance(m)	0	4	5	8	12

(i) The distance moved in 1st second = …….
(ii) The distance moved in 2nd second = …….
(iii) The distance moved in 3rd second = …….
(iv) The distance moved in 4th second = …….

- This expresses that the object does not travel same distance in every second. Thus the object has travelled not in ……
- Here, the distance travelled is …….. m. Time spend for that is ……..
- The average speed is found in this situation.
- Find the speed of the above object.

4) Following represents the data of the movement of a push cycle. Complete the following statements using this data.

Time (s)	0	1	2	3	4
displacement (m)	0	10	20	30	40

(i) The displacement in 1st second = …….
(ii) The displacement in 2nd second = …….
(iii) The displacement in 3rd second = …….
(iv) The displacement in 4th second = …….

• The displacement of the object in every second has increased in amount. Therefore, it is said that the object has travelled in constant velocity or uniform velocity.
• The direction of velocity as well as the ……. of an object which moving in constant velocity …….

5) Following represents the data of the movement of a motor cycle. Complete the following statements using this data.

Time (s)	0	1	2	3	4	5
displacement (m)	0	7	9	15	25	50

(i) The displacement in 1st second = …….
(ii) The displacement in 2nd second = …….
(iii) The displacement in 3rd second = …….
(iv) The displacement in 4th second = …….

• The change of displacement in a second is not similar. Therefore, the motor cycle has not moved in …….
• The average velocity is found in this situation. Find the average velocity of motor cycle.