



Provincial Department of Education-Sabaragamuwa-Week School

Week- 14th Week- 24th-30th Jan, 2021

Subject-science

Grade -10

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Motion in a straight line

01. Following table shows the motion of an object. Fill in the blanks.

Time (s)	0	1	2	3	4	5
Velocity (ms^{-1})	0	2	4	6	8	10
Increase of velocity during each 1s	.....	.....	.....	.....	.....	.....

- The increase of velocity during each 1s interval is the same. Therefore it is called

02. A car starting from rest acquires a velocity of 20ms^{-1} after moving 5s under a uniform acceleration. Calculate the acceleration of the car.

03. An object with 24ms^{-1} came rest. Following is the table which shows the velocity of an object.

Time (s)	0	1	2	3	4
Velocity (ms^{-1})	24	18	12	6	0
Decrease of velocity during each 1s	.....	.....	.....	.....	.....

- The decrease of velocity during each 1s interval is the same. Therefore, it is called

04. A train moved with 20ms^{-1} . It came rest within 5s. Calculate the deceleration of the train.

05. Draw a displacement-time graph using the following information.

Time (s)	0	1	2	3	4	5
Displacement (m)	0	10	20	30	40	50

- find the total displacement of the object using the graph.
- Calculate the velocity using the gradient of the graph.

06. Following is the information of the moving object. Draw a velocity-time graph using the following information.

Time (s)	0	1	2	3	4	5
Velocity (ms^{-1})	0	4	8	12	16	20

- Find the total distance of the object.
- Calculate the acceleration using the gradient of the graph.

07. Following is the information of the moving object.

Time (s)	0	1	2	3	4	5	6	7	8
Velocity (ms^{-1})	0	3	6	9	12	12	12	6	0

- Draw a velocity –time graph using the above information.
- Calculate the acceleration of the object within first 4s.
- Find the distance of object with uniform velocity.
- Calculate the deceleration of the object.
- Find the total distance of the object.

08. Give two examples for the motion under the gravitational acceleration.

09. A body falling vertically from the top of the building. After starting from rest it takes 5s to reach the ground. Gravitational acceleration is 10ms^{-2}

- Draw velocity –time graph related to the above information
- Find the height of the building using the above graph.
- Find the velocity of the object when reaching to the ground.