ALLEN IntelliBrain®

Experiential Experimental Edutaining

PHYSICS

SAMPLE BOOK

GRADE 7

PHYSICS

I'm the

Intelli Kid

and

I'm becoming the

Best Version

of myself with

ALLEN Intelli Brain®

Experiential Experimental Edutaining

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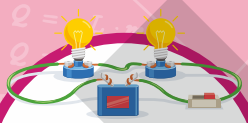

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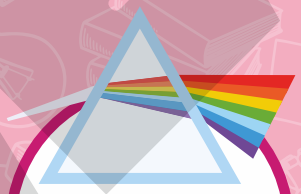

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I AM PROGRESSING

(Tick mark the columns after achieving the Learning Milestones)

TOPIC	1st Learning	Exercise Solving	1st Revision	2nd Revision
 Heat				
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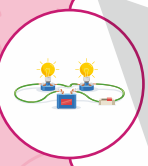 Electricity & its Effects				
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PHYSICS

SAMPLE THEORY

CHAPTER 3

MOTION & TIME

MOTION & REST

Motion

An object is said to be in motion when it **changes its position** with respect to **a stationary observer**.

A moving bus on a road.

Rest

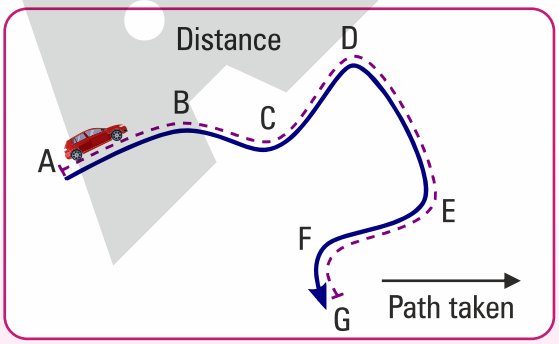
An object is said to be at rest if it **does not change its position** with respect to **a stationary observer**.

Trees are at rest.

DISTANCE & DISPLACEMENT

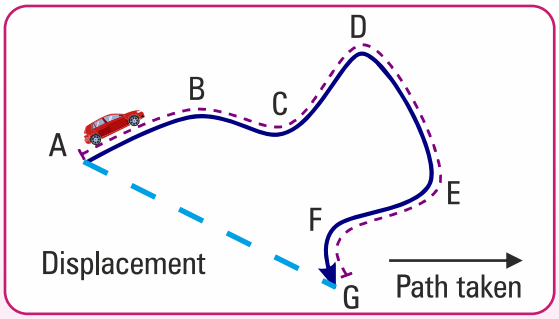
Distance

- The **total length** of **a path** which is covered by a moving body is called distance.
- It is a **scalar quantity** (only magnitude).
- The magnitude of the distance is always **positive**.
- The **S.I. unit** of distance is **metre (m)**.



Displacement

- Displacement is the **shortest distance** between the initial and final position of an object. The direction of displacement is always taken from the initial position to the final position of the object.
- It is a **vector quantity** (magnitude & direction).
- Displacement can be **positive**, **negative** or **zero**.
- The **S.I. unit** of displacement is **metre (m)**.



SPEED

- The speed of an object refers to an idea of **how fast** or **slow** that the **object** is **moving**.
- It is defined as the distance covered by an object per unit time.
- It is a **scalar quantity**.
- It can be only **positive** or **zero**.
- The **S.I. unit** of speed is **metre per second** (m/s).

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

A car is running at a speed of 75 m/s.

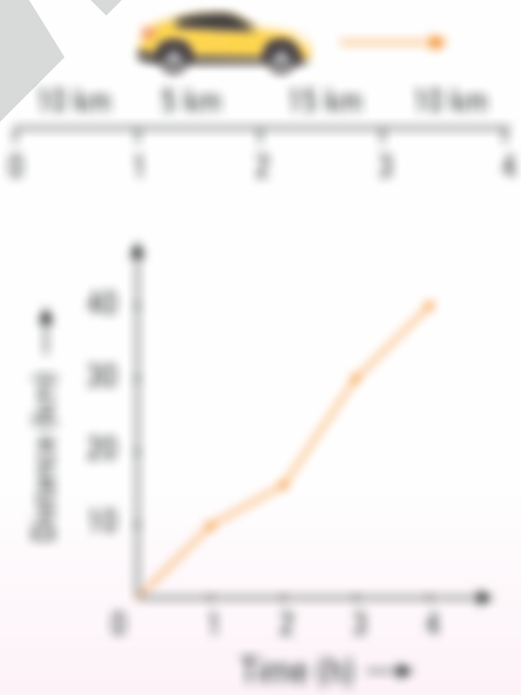
Uniform Speed

- An object is said to be in uniform speed when it covers **equal distances** in **equal time intervals**.

A moving car has a uniform speed.

Non-uniform Speed

- A moving object which does **not cover equal distances** in **equal time intervals** exhibits a non-uniform motion.



A moving car does not have a uniform speed.

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PHYSICS

SAMPLE EXERCISE

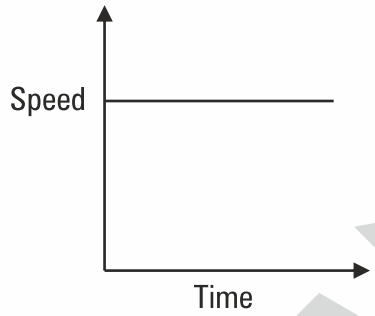
EXERCISE

GRADE - 7

Motion & Time

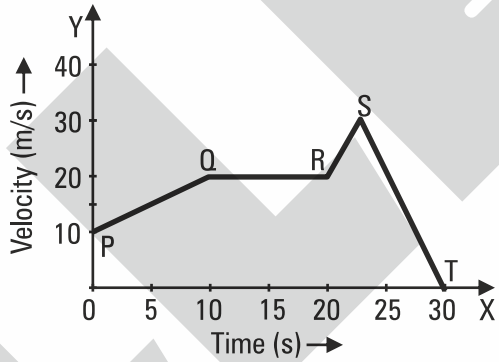
Directions: Solve each of the following multiple choice questions by choosing the most appropriate option.

1. Which option is correct regarding the motion of an object, as shown in the diagram ?



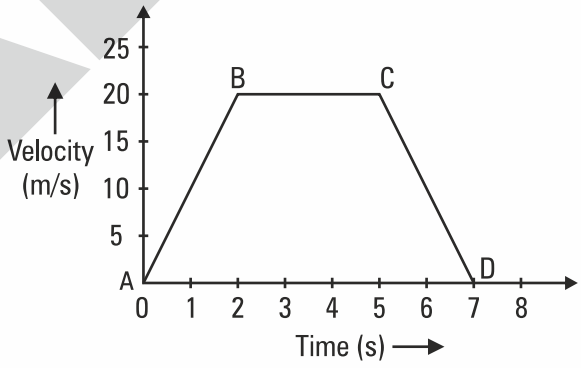
(1) Rest
(2) Increment in speed
(3) Uniform speed
(4) Non-uniform speed

2. As shown in the diagram, for which time interval an object has a uniform motion ?



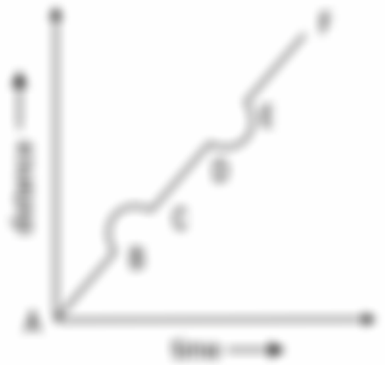
(1) 0 - 5 s
(2) 10 - 20 s
(3) 10 - 15 s
(4) 15 - 20 s

3. A car starts from rest and follows the path as given in the diagram ? What is the total distance travelled by the car ?



(1) 70 m
(2) 80 m
(3) 90 m
(4) 100 m

4. In the given diagram can you identify the points where a bus has non-uniform speed ?

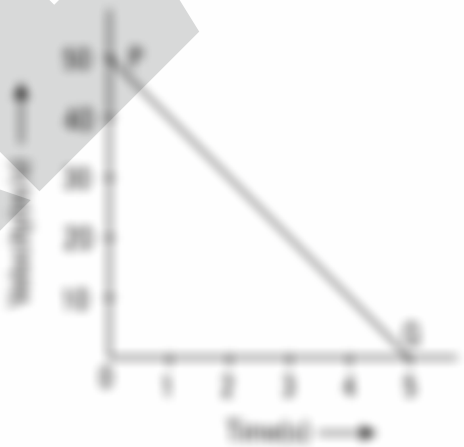


(1) B-C (2) C-D (3) A-B (4) D-F

5. What is the average speed of a bike if it takes 5 hours to complete the whole journey ?

(1) 28 km/h (2) 30 km/h (3) 48 km/h (4) 58 km/h

6. The velocity-time graph of an object is shown below. The object moves with an initial velocity of 50 m/sec and stops in 5 sec with uniform retardation. Which of the following is the total distance travelled by the object ?



(1) 125 m (2) 115 m (3) 135 m (4) 145 m