THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

AIM HIGH, TOGETHER WE FLY

**CHAPTER 8**

**MOTION**

**One Mark questions**

1. Can displacement be zero even when distance is not zero?
2. Can the distance travelled by an object be smaller than magnitude of its displacement?
3. A particle is moving with uniform velocity. What is its acceleration?
4. How can you get speed of an object from its distance – time graph?
5. How can you get distance of an object from its speed – time graph?
6. A brick & an elephant are in free fall. What is common in their motion?
7. When an object is thrown vertically upwards. What is its velocity at the highest point?
8. Can velocity & acceleration point in opposite directions?
9. Define acceleration.
10. What is non uniform motion?

**Two Marks questions**

1. Differentiate scalars & vectors?
2. What is retardation? How does it affect the speed?
3. Can speed of a body vary with its velocity constant? Explain.
4. Why is circular motion with constant speed called accelerated motion?
5. State the difference between distance & displacement.
6. What is the difference between speed & velocity?
7. What does a speedometer & odometer indicate?

**Three Marks questions**

1. If an object is thrown vertically upwards with speed 49 $ms^{-1}$. How long does it take tocomplete upward journey? What maximum height does it achieve?

2. An object starting from rest covers 20 meters in first 2 seconds & 160 meters in next 4seconds. What is its velocity after 7 seconds from the start?

**Five Marks questions**

1. Derive all the three equations of motion for uniform acceleration using graphical method.
2. A car a moving at rate of 72km/h and applies brakes which provide a retardation of $5ms^{-2}$.
   (i) How much time does the car takes to stop.
   (ii) How much distance does the car cover before coming to rest?
   (iii) What would be the stopping distance needed if speed of the car is doubled?

# CHAPTER 9

## Force and laws of motion

One Mark questions

1. Define momentum.
2. State first law of motion.
3. What is inertia?
4. Can action and reaction balance each other?
5. How does one climb up a rope?
6. Why cannot we walk in space?
7. What does rate of change of momentum represent?
8. Why do we continuously paddle to keep the cycle moving?
9. Why does a scooter tend to skid while executing a sharp turn?
10. Which one would have more inertia : 10 kg mass & 5 kg mass?

**Two Marks questions**

1. Explain the functioning of shockers in cars.
2. How much force is needed to pull an object of mass 40 kg in vertically upward directionwith acceleration of 2.2 m / $s^2$.

3. Why does a fan keep moving for sometime when switched off?

4. What do you mean by conservation of momentum?

5. Inflated balloon lying on the surface of a floor moves forward when pricked with a pin.Why?

**Three Marks questions**

1. An iron sphere of mass 10 kg is dropped from a height of 80 cm, if 'g' = 10 m / $s^2$.Calculate the momentum transferred to the ground by the body.

2. What would be the force required to stop a car of mass 1000 kg and a loaded truck ofmass 10,000 kg in 2 seconds each moving with velocity 5 m / s.

3. Deduce law of conservation of momentum using third law of motion.

**Five Mark questions**

1. Name and define three different types of inertia & give an example of each.