VIDYA BHAVAN, BALIKA VIDYAPEETH

SHAKTI UTTHAN ASHRAM, LAKHISARAI, PIN:-811311

SUBJECT:- PHYSICS **CLASS:- IXTH** **DATE:-10/04/XXI**

SUBJECT TEACHER:- MR. NEEL NIRANJAN

CHAPTER 1. (MOTION)(BASED ON NCERT PATTERN)

Motion:- An object is said to be in motion when its position changes with time.

- We describe the location of an object by specifying a reference point. Motion is relative. The total path covered by an object is said to be the **distance travelled by it.**
- The shortest path/distance measured from the initial to the final position of an object is known as the **displacement**.
- **Uniform motion:** When an object covers equal distances in equal intervals of time, it is said to be in uniform motion.
- **Non-uniform motion:** Motions where objects cover unequal distances in equal intervals of time.
- **Speed:** The distance travelled by an object in unit time is referred to as speed. Its unit is m/s.
- **Average speed:** For non-uniform motion, the average speed of an object is obtained by dividing the total distance travelled by an object by the total time taken.

$$\text{Average speed } (v) = \frac{\text{Total distance travelled}(s)}{\text{Total time taken } (t)}$$

Velocity: Velocity is the speed of an object moving in definite direction. S.I. unit is m/s.

$$\text{Average velocity} = \frac{\text{initial velocity} + \text{final velocity}}{2}$$

$$\therefore V_{av} = \frac{u+v}{2}$$

u = initial velocity

v = final velocity

Acceleration: Change in the velocity of an object per unit time.

$$\text{Acceleration } a = \frac{v-u}{t} \text{ S.I. unit is m/s}^2$$