PM SHRI KENDRIYA VIDYALAYA MYSURU

CLASS-IX

Autumn Break Assignment

ASSIGNMENT:

Increasing the efficiency of both crop and livestock production through methods like crop variety improvement , better crop production practices and crop protection

ACTIVITY:

*****Take a 100 mL beaker.

*Fill half the beaker with water and mark the level of water.

*Dissolve some salt/ sugar with the help of a glass rod.

*Observe any change in water level.

*What do you think has happened to the salt?

*Where does it disappear?

*Does the level of water change?

*Write down the observations

•**Review topics:** Uniform and non-uniform motion, distance and displacement, speed and velocity, acceleration, and the three equations of motion ($v = u + at$, $s = ut + \frac{1}{2}at^2$, $v^2 = u^2 + 2as$)Newton's Laws of Motion and inertia, identifying examples of balanced and unbalanced forces, applying Newton's second law to calculate force, momentum, and acceleration in real-world scenarios like collisions and solve following questions.

Q1. A moving train is brought to rest within 20 seconds by applying brakes. Find the initial velocity, if The retardation due to brakes is 2m/s2.

Q2. A car accelerates uniformly from 18km/h to 36 km/h in 5 seconds. Calculate (i) acceleration and (ii) The distance covered by the car in that time.

Q3. A body starts to slide over a horizontal surface with an initial velocity of 0.5 m/s. Due to friction, its Velocity decreases at the rate of 0.05 m/s2. How much time will it take for the body to stop?

Q4. A train starting from the rest moves with a uniform acceleration of 0.2 m/s2 For 5 minutes. Calculate The speed acquired and the distance travelled in this time.

Q5. A bus was moving with a speed of 54 km/h. On applying brakes, it stopped in 8 seconds. Calculate The acceleration and the distance travelled before stopping

Q6Why does gun recoil when a bullet is fired? Derive an expression for recoiling velocity of Gun.

Q7. How much force is required to change velocity of a body of mass 10kg from 2m/s to 6m/s. Is this force balanced or unbalanced.

Q8 A cat of body mass 2.5 kg running with a speed of 2m/s jumps on a stationary skateboard Of mass 0.5 kg. Will the skateboard move.,