

**BCM SCHOOL, BASANT AVENUE DUGRI ,LUDHIANA**

**Subject - Science**

**Assignment**

**Date: July 31, 2024**

**Class IX**

## **PHYSICS**

### **Numericals:**

**Q1:** What would be the force required to stop a car of mass 1000 Kg and a loaded truck of mass 10000 Kg in 2 seconds, if they are moving with same velocity of 5m/s.

**Q2:** A constant force of friction of 50N is acting on a body of mass 200kg moving initially with a speed of 15m/s. How long does the body take to stop? What distance will it cover before coming to rest?

### **Q3: Case Study Based Question**

When unbalanced force acts on a body, the body will be accelerated. Balanced force is a set of forces acting on a body produce no acceleration in it, but they can deform it. When a number of forces acting on a body change velocity of body, they produce a non-zero acceleration, the forces are unbalanced. When external forces are unbalanced, they cause a change in state of motion or shape. External balanced force cause no such change. E.g., Book kept on a table. Weight of book is balanced by normal upward force. Both are external forces, but balance each other. Action and reaction forces are equal in magnitudes.

a) An unbalanced force acts on a body. What is the position of the body ?

b) What can a balanced force do ?

c) A number of forces acting on a body changes velocity of the body. What can you say about the forces?

## **CHEMISTRY**

### **Competency based questions**

Q1. You are provided with soda water, milk and muddy water. How can you differentiate between them in terms of (i) Homogeneity (ii) Filtration (iii) Tyndall effect?

Q2. Iron filings and sulphur were mixed together and divided into two parts, 'A' and 'B'. Part 'A' was heated strongly while Part 'B' was not heated. Dilute hydrochloric acid was added to both the Parts and evolution of gas was seen in both the cases. How will you identify the gases evolved?

### **Case study based Question**

Q3. A group of students took an old shoe box and covered it with a black paper from all sides. They fixed a source of light (a torch) at one end of the box by making a hole in it and made another hole on the other side to view the light. They placed a milk sample contained in a tumbler in the box as shown in the figure below. They were amazed to see that milk taken in the tumbler was illuminated. They tried the same activity by taking a salt solution but found that light simply passed through it.

Read the given passage carefully and give the answer of the following questions:

- I. Explain why the milk sample was illuminated? Name the phenomenon involved.
- II. Same results were not observed with a salt solution. Explain.
- III. Can you suggest two more solutions which would show the same effect as shown by the milk solution?
- IV. Give one example of above phenomenon observed in our surroundings.