CLASS IX: PHYSICAL SCIENCE SUBJECT ENRICHMENT ACTIVITY (2020-21)

PHYSICS

1. Determination of the density of solid (denser than water) by using a spring balance and a measuring cylinder.
2. Establishing the relation between the loss in weight of a solid when fully immersed in
    a. Tap water
    b. Strongly salty water with the weight of water displaced by it by taking at least two different solids.
3. Verification of the Laws of reflection of sound.
4. Determination of the speed of a pulse propagated through a stretched string/slinky (helical spring).

CHEMISTRY

1. Perform the following reactions and classify them as physical or chemical changes:
    a. Iron with copper sulphate solution in water
    b. Burning of magnesium ribbon in air
    c. Zinc with dilute sulphuric acid
    d. Heating of copper sulphate crystals
    e. Sodium sulphate with barium chloride in the form of their solutions in water
2. Preparation of:
    a. a true solution of common salt, sugar and alum
    b. a suspension of soil, chalk powder and fine sand in water
    c. a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of
        i. transparency
        ii. filtration criterion
        iii. stability
3. Preparation of
    a. A mixture
    b. A compound

    using iron filings and sulphur powder and distinguishing between these on the basis of:

c. appearance, i.e., homogeneity and heterogeneity

d. behaviour towards a magnet

e. behaviour towards carbon disulphide as a solvent

f. effect of heat

4. Separation of the components of a mixture of sand, common salt and ammonium chloride (or camphor).
5. Determination of the melting point of ice and the boiling point of water.
6. Verification of the law of conservation of mass in a chemical reaction.

Complete writing the above experiments, in the same order, according to the below mentioned instructions and referring to the lab manual, in the lab record.

Instructions:

- Heading
- Aim:
- Materials/Apparatus Required:
- Chemicals Required: *(only applicable for chemistry)*
- Observation table: *(on the blank paper on the left side of the lab record)*
    - Physics: Draw blank tables *(as applicable per the respective experiment so that the readings can be tabulated when the experiment is done)*
    - Chemistry: Copy the observation table *(*except the data in the inference column)* from the lab manual for the respective experiments as applicable
- Diagrams: All related diagrams and circuits *(on the blank paper on the left side of the lab record)*
- Procedure : Where ever applicable write the gist in own words after understanding the experiment
- Result/Inference: Leave the space empty to fill after the experiment is done.
- Precautions: Any five

- Read each experiment carefully to understand the principle working behind it
- Study the theory behind the experiment thoroughly
- Understand the basics of the experiment, to be able to answer during viva voice
- Learn the step-wise procedure to be able to conduct each experiment properly
- Learn the circuits and diagrams properly wherever required
- Learn to distinguish various compounds by their colour, smell or odour