Summative Assessment I in **SCIENCE**

General Instructions :

1. The question paper comprises of four sections A, B, C and D. You are to attempt all the four sections.
2. All questions are compulsory.
3. There is no overall choice.
4. In Section D question numbers from 25 - 33 are the multiple choice questions. For each question four answers are provided. Write the correct answer in the box provided. Question numbers 34 - 36 should be answered in brief on the same sheet.
5. Marks for each question are mentioned against the question.

Section - A

1. An object experiences a net zero external unbalanced force. Is it possible for the object to be travelling with a non zero velocity? Justify your answer. (1)

2. a) Give two importance of the universal law of gravitation.
    b) Give its mathematical expression. Explain each term. (1+1)

3. a) Define inertia.
    b) Explain why some leaves may get detached from a tree when it's branch is vigorously shaken. (1+1)

4. a) List any two differences between mass and weight.
    b) Derive the relation between g and G. (1+2)

5. Give reasons for the following:
    a) It is difficult for a fireman to hold a hose which ejects large amount of water with high velocity.
    b) Karate player breaks a brick with a single blow.
    c) We fall forward when the brakes of the moving bus are suddenly applied. (3)

6. a) A constant force acts on an object of mass 5kg for a duration of 2s. It increases the object's velocity from 3m/s to 7m/s. Find the magnitude of the applied force. If the same force applied was for the duration of 5s, what would be the final velocity of the object?
    b) Define 1 newton. (2+1)

7. a) Differentiate between speed and velocity of a moving object.
    b) The brakes are applied to a car produce an acceleration of 6m/s^2 in the opposite direction to the motion. If the car takes 2s to stop after the application of brakes, calculate the distance it travels during this time. (1+2)

8. a) State the law of conservation of momentum.
    b) Derive the mathematical expression of law of conservation of momentum.
    c) A bullet of mass 20g is horizontally fired with a velocity 150m/s from a pistol of mass 2kg. What is the recoil velocity of the gun and in which direction?   (1+2+2)

9. a) Derive the third equation of motion graphically. Explain each term used in the expression.
    b) A stone is thrown vertically upwards with an initial velocity of 40m/s. Find the maximum height reached by the stone. What are the net displacement and the total distance covered by the stone?   (3+2)

Section - B

10. a) Identify the elements in the following: silica, silver, salt, tin.
    b) What is meant by Tyndall effect?   (1x2)

11. a) With the help of an activity show that particles of matter have spaces in between them.
    b) A rubber band can change its shape on stretching even though it is a solid. Why?
    c) Arrange the following substances in the increasing order of forces of attraction between the particles. ------ Water, salt and nitrogen.   (1x3)

12. a) Define concentration of a solution.
    b) To make a saturated solution, 36g of NaCl is dissolved in 100g of water at 293K. Find the concentration at this temperature.   (1+2)

13. Give reasons for the following:
    a) The fragrance of the incense stick spreads in the entire room as soon as it is lit up.
    b) Steam causes more severe burns as compared to boiling hot water.
    c) Clothes take longer time to dry on a rainy day.   (1x3)

14. a) Name the method that you will use to separate the following mixtures:
        i) oil and water   ii) pigments from the natural colours
    b) Draw a neat and well labelled diagram to show the separation of ammonium chloride and common salt.   (1+2)

15. a) Define: i) Evaporation   ii) latent heat of fusion
    b) Convert: i) 25^oC to Kelvin scale   ii) 373K to ^oC scale.
    c) Explain why do gases exert pressure on the walls of the containers.
    d) How does evaporation cause cooling?
    e) Name the process to convert: i) solid to liquid   ii) gas to liquid.   (1x5)

16. a) Which of the two is a physical change? Melting of butter and growth of a plant.
    b) Give one example of an emulsion.
    c) Explain the effect of temperature rise on the solubility of a solute.
    d) Which principle is used in the separation of butter from milk?

e)   Differentiate between:

  i)   Suspension and colloid
  ii)   Miscible and immiscible liquids   (½+½+1+1+2)

Section - C

17.   Name the following cell organelles:
  a)   suicidal bags   b)   powerhouse of the cell.   (1)

18.   What are rabi and kharif crop?   (1)

19.   Explain the types of muscle fibres (any two points each) with the help of
       well- labelled diagrams.   (3)

20.   Draw well- labelled diagrams showing: (3)
  a)   Location of meristematic tissues in the plant body.
  b)   Longest cell which transmits impulses in our body.

21.   State the function of each: (3)
  a)   Leucoplast   b)   chromoplast   c)   chloroplast
  d)   Nucleus   e)   Cytoplasm   f)   vacuole

22.   While walking through a garden, Anil removed the tips of some flowering plants.
       Gardener saw him and persuaded him not to do so
  a)   What happens to the plants if their tips are removed?
  b)   what are meristems?
  c)   what value was displayed by the gardener?   (3)

23.   a)   What are the components of phloem?

b)   differentiate between   (any 2 points):
       i)tendons and ligaments   ii)cartilage and bones   (1+2+2)

24.   Write a short note on:
  a)   mixed farming   b)   crop rotation   c)   inter cropping
  d)   vermicompost   e)   organic farming   (5)

-x-x-x-x-x-x-