CBSE SAMPLE PAPER – 01 (Solved)
SUMMATIVE ASSESSMENT – I
Class-IX (SCIENCE)

Time: 3 Hrs **MM: 90**

General Instructions

(i) The question paper comprises of two Sections, A and B. You are to attempt both the sections.
(ii) All questions are compulsory.
(iii) Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence.
(iv) Question numbers 4 to 6 in Sections-A are two marks questions. These are to be answered in about 30 words each.
(v) Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each.
(vi) Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
(vii) Question numbers 25 to 33 in Section-B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
(viii) Question numbers 34 to 36 in Section-B are two marks questions are to be answered in about 30 words each based on practical skills.

Section – A

1. Name the chemical substance which gets deposited in the walls of Sclerenchyma.
2. A bus covers equal distance in equal interval of time. What type of motion does the bus exhibit.
3. A farmer grows gram crop between two cereals. Which agricultural practice is being followed here?
4. State the difference between homogeneous & heterogeneous mixture. Give one example of each.
5. What is the relation between the mass and the weight of the body? What are the differences between the two?
6. State two differences between a mitochondria and plastid.
7. Give reasons:
   a) A sponge can be pressed easily; still it is called a solid.
   c) Naphthalene balls disappear with time without leaving any solid.
8. What is meant by concentration of a solution? Calculate the concentration of a solution which contains 12 g of urea in 160 g of solution.

9. Mention the significance of meristem in plants.

10. Which of the following has more inertia & Why?

11. a) A rubber ball and a stone of the same size.

    b) A bicycle and a train.

12. Two similar trucks are moving with a same velocity on a road. One of them is loaded while the other is empty. Which of the two will require a larger force to stop it?

13. Consider two bodies A and B. The body B is heavier than A. Which of the bodies is attracted with a greater force by earth? Which of the two will fall with greater acceleration? Explain.

14. State the ways in which phloem is functionally different from Xylem.

15. Draw a neat diagram of a section of Phloem and label four parts.

16. Which cell organelle would you associate with elimination of old and worn out cells & why?

17. Which two factors bring about loss of food grains during storage? Give one example each.
    State any two control measures to be taken before grains are stored.

18. State Newton's first law of motion. Why does dust come out of a carpet when it is beaten with a stick?

19. (a) What is meant by evaporation? What are the factors on which the rate of evaporation depends upon?

    b) How does evaporation cause cooling?

20. Identify whether it is balanced or unbalanced force that causes the following different types of movement.

    (i) A person resting in an armchair.

    (ii) A cyclist braking.

    (iii) A lorry traveling at a constant speed on a straight road.

    (iv) A car that has a deceleration of 10 m/s^2.

21. Explain how Newton's second law can be used to define the unit of force. Define the SI unit of force.

22. How crop variety improvement methods come to the rescue of farmers facing repeated crop failure? Describe three factors for which they could do crop improvement.
    Which is the most common method of obtaining improved variety of crops? Explain briefly.

23. (a) State the feature of cardiac muscles which make it unique?

(b) The tissue is under control of will? What is this type of tissue called? Name it.

(c) What are ligaments? What do you expect to feel if they are over-stretched?

24. (a) What happen to sugar when it is dissolved in water? Where does the sugar go? What information do you get about the nature of matter from the dissolution of sugar in water?

Section B

25. When a mixture of iron fillings and sulphur is heated, the colour of the mixture changes from:

a) Black to yellow b) Yellow to black

c) Greyish yellow to black d) Black to brown

26. The colour of hydrated copper sulphate is :

a) Blue b) Colourless

c) Brown d) Yellow

27. Recovery of salt from salt solution in water can be done by :

a) Evaporation b) Distillation

c) Filtration d) None of these

28. In circular motion the

a) Direction of motion is fixed b) direction of motion changes continuously

c) Acceleration is zero d) velocity is constant

29. The steps for conducting the starch test on the given sample of rice grains are

i) Crush the rice grains

ii) Add water to the test tube

iii) Add few drops of iodine

iv) Boil the contents and filter

The most appropriate order in which the steps should be followed is

a) ii, iii, I, iv b) ii, I, iii, iv

c) iii, iv, I, ii d) I, ii, iv, iii

30. Girt is formed in some fruits due to

a) Sclereids b) Parenchyma

c) Fibres d) Collenchyma.

31. Which of the following has the largest inertia?

a) A pin

b) An ink pot

c) Your physics text book

d) your body

32. Matanil yellow is

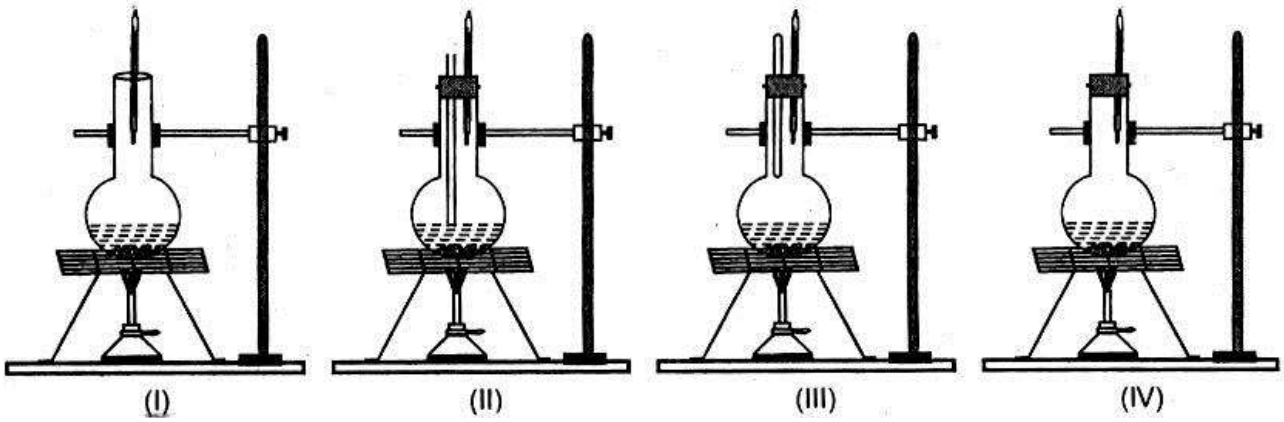
(a) a dye

(b) yellow grain similar to arhar dal

(c) a nutritional supplement

(d) another type of dal

33. Reema, Archna, Shakti and Illa made the arrangement I, II, III, IV for determination of boiling point of water. Which one of them has made the correct set up?



(a) I

(b) II

(c) III

(d) IV

34. Mention the type of thermometer that should be used to determine the melting point of ice in laboratory? What should be the position of bulb of thermometer?

35. After a solid starts melting, we observe that the temperature remains constant until the whole of the solid has melted. Where the energy does goes?

36. Sheema was asked to prepare four separate mixtures in four beakers A, B. C, D by mixing sugar, fine sand, thin paste of starch and chalk powder respectively in water and then categories each as stable or unstable. What will be the correct categorization?

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ANSWERS

Section A

1. Lignin.
2. Uniform motion.
3. Crop rotation.
4. The mixtures in which particles are uniformly distributed are called homogenous and one without uniform distribution of particles is called heterogeneous mixture.
5. Weight = mass x acceleration due to gravity.

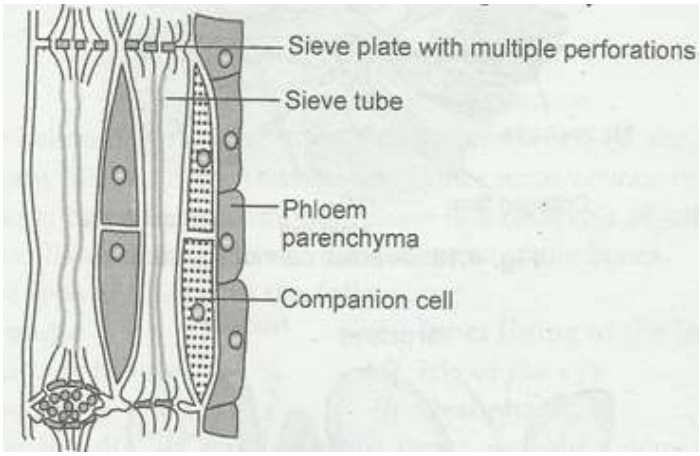
Mass	Weight
a. It is the measure of inertia of the body. b. Its SI unit is kg.	a. It is the force by which earth attract the body. b. Its SI unit is Newton.

6. Mitochondria is a double membrane structure that release energy in form of ATP. Plastid is semi- autonomous structure that provide colour to the plant parts.

7. a) Sponge can be compressed easily although it is a solid because the air space present between the sponges comes out when compressed and return back as soon as the force is released.

   b) Naphthalene is a sublime substance that changes into vapour at normal room temperature. So, when kept in open it get disappeared.

8. Mass of solute = 12 g.
   Mass of solution = 160 g
   Concentration of solution = 12/160* 100%
9. Meristem tissue is responsible for growth and elongation of the plant root and shoots. They also increase the girth of stem and root by secondary growth. They are living cells and faster growing.

10. (a) Stone has more inertia.
    (b) Train has more inertia.
11. Inertia depends upon the force by which object is attracted towards it earth surface.
12. The loaded truck will need larger force to stop as the momentum of loaded truck is more than the momentum of empty truck. Momentum depends upon mass and velocity of the moving body.
13. Both the body A and B will be attracted by same force by the earth. As the acceleration due to gravity depends upon the mass and radius of the earth and not on the mass of the body itself.
14. Phloem tissue carries food prepare in leaves to all other parts of the plant. On the other hand xylem tissue transports water and mineral from root to leaves.
    Phloem transport is bidirectional but xylem transport unidirectional.
15. 

16. Old and worn out parts are removed by the lysosomes. It contain strong digestive enzyme that hydrolyses the old and worn out tissues. The number of lysosomes vary from cell to cell.
17. The two factors that are responsible for the food grain during storage are
    Biotic factors that include mites, rodents, bacteria, fungi etc.
    Abiotic factors that include sunlight, moisture, temperature, rain etc.
    During storage, fumigation and spraying with insecticides prevents the seed.
18. An object remains in state of rest or uniform motion on straight line until a force is applied over it.
    Dust comes out when carpet is beaten with stick because of inertia of rest. On beating carpet comes in motion but dust particles remain in state of rest and come out.

19. (a) Evaporation is the process of changing water into water vapour with attaining the boiling point. The factors that help in evaporation include:

    (i) Surface area

    (ii) Humidity

    (iii) Temperature

    (iv) Pressure

    (b) Evaporation causes cooling because the energy required for evaporation is taken from the surface from where evaporation is taking place.

20. (a) Balanced force

    (b) Unbalanced force

    (c) Unbalanced force

    (d) Balanced force.

21. Newton's second law of motion states that the force acting on body is directly proportional to the product of mass and acceleration.

    Force = mass x acceleration.

    F= m x a

    SI unit of force is Newton. One Newton is the force that displace a body of mass 1 kg to a distance of 1 meter.

22. Desirable traits used in varietals improvement in poultry farming are:

    a. Higher yield- to get more production by less investment.

    b. Improved nutritional quality – Food grain contain more protein and carbohydrates than the traditional one.

    c. Resistance to disease- The new variety should be resistance to various bacterial and fungal diseases.

    d. Wide range of adaptablity- The new crops must be grown in any kinds of soil combination and climatic conditions.

23. (i) Cardiac muscles are involuntary, striated and non-fatigue muscles which is located in the walls of heart to perform rhythmic contraction and relaxation throughout life. The cells are uninucleate, small and cylindrical with broad ends.

(ii) The tissue which is under the control of will and work as per the requirement of body is striated or skeletal muscular tissue. They are voluntary in nature.

(iii) Ligaments are cord likes dense yellow fibrous connective tissue of considerable strength and high elasticity. They bind a bone with another bone. Because of elasticity a ligament allows bending and rotation of over joint.

24. (a) When sugar is dissolved in water, its crystals breaks into tiny particles. The sugar particles go into the spaces between the particles of water and mix with them to form sugar solution. The sugar particle occupies the space between water particles.

From the dissolution of sugar in water, we infer that

(i) The matter consisting of sugar and water is made up of small particles.

(ii) The particles of matter have space between them.

Section B

25. (b)
26. (a)
27. (a)
28. (b)
29. (d)
30. (a)
31. (a)
32. (d)
33. (b)
34. Thermometer used for measuring the melting point of ice is laboratory thermometer. The two precaution includes

a. Thermometer knob should not touch the bottom.

b. Ice should be perfectly crushed.

35. After solid start melting the temperature remain constant until all the solid get melted because the energy is used to overcome the latent heat of fusion and in breaking the strong intermolecular force of attraction.
36. The mixture in beaker A and C will be stable.

The mixture in beaker B and D will be unstable.