

Time allowed: **3 hours**; Maximum marks: **90**

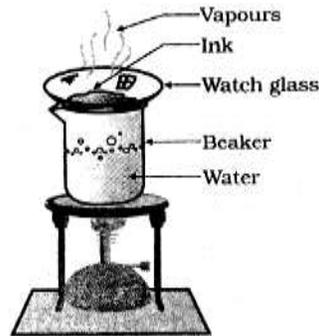
General Instructions:

- a) All Questions are compulsory
- b) The Question Paper consists of 42 Questions divided in to four sections A, B, C and D
- c) Section- A comprises –
 - 1 to 3 questions of one mark each
 - 4 to 6 questions of two marks each
 - 7 to 18 questions of three marks each
 - 19 to 24 questions of five marks each
- d) Section- B comprises
 - 25 to 33 questions of one mark each
 - 34 to 36 questions based on practical skills are two marks each

Section – A

1. Mention the change in human red blood cells when they are placed in hypotonic salt/ sugar solution.
2. Why is it difficult for a fireman to hold a hose, which ejects large amount of water at a high velocity?
3. Define photoperiod.
4. 2 mL of Dettol is added to a beaker containing 500 mL of water and stirred. State four observations that you make.
5. State the role of ligaments and tendons in our skeletal system.
6. Tabulate any two points of difference between 'g' and 'G'.
7. Carbon dioxide was taken in an enclosed cylinder and compressed by applying pressure
 - (a) Which state of matter will we obtain after completion of the process?
 - (b) Name and define this process.
 - (c) What is the common name of the product obtained in the above process?

8. Study the diagram shown below and answer the following questions:



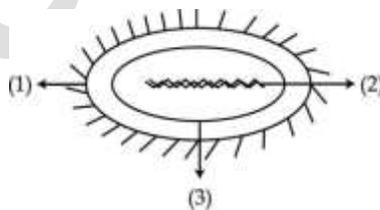
- (i) Name and define the process shown in the diagram?
- (ii) Which type of substance can be separated by these methods?
- (ii) What can we interpret about the nature of ink?

9.

- (a) Define solubility.
- (b) A solution contains 50 g of sugar in 350 g of water. Calculate the concentration of solution in terms of mass by mass percent of the solution.

10.

- (a) Label the parts marked 1, 2, and 3 in a prokaryotic cell.
- (b) Mention any three features of prokaryotic cells.



11.

- (a) State one point of difference between xylem and phloem.
- (b) Draw a neat diagram of xylem

12. Define distance and displacement. A body covers one complete revolution around a circular park of circumference 176 m in 4 minutes. Find the displacement of the body after 6 minutes.
13. Explain any three effects that can be produced by force with example.
14. Sohan is playing with a ball. If he throws the ball in vertically upward direction with a velocity of 10 m/s, find the maximum height reached by the ball and time taken by it to attain the maximum height.
- 15.
- (a) The moon is acted by the gravitational pull of earth; still it does not fall into earth. Explain why ?
- (b) Determine the ratio of weight of an object of mass 50 kg on earth and on moon (Given acceleration due to gravity on moon, $g_{\text{moon}} \square 1/6^{\text{th}}$ of g on the earth)
16. Mention any two uses of manure. What is vermi- compost?
17. Rohan is a student of class IX. Once he had a chance to go to a village with his friend Aman. One morning when both the friends were walking through the fields, Rohan found himself in the field of wheat. He was surprised to see many unwanted plants in the field. He discussed it with Aman who knew much about it. Rohan felt obliged to know so much about crop production from Aman.
- Now answer the following questions-
1. What are the unwanted plants grown in the cultivated field called? Write one example.
 2. How the presence of these plants affect the crop field. Write one method of controlling them.
 3. State what quality of Aman's character has been depicted?
18. State two advantages of composite fish culture. What is the application of hormonal stimulation in fish culture?
- 19.
- (a) Arrange the following in the increasing order of
- (i) Force of attraction

(ii) Intermolecular space

Iron nail, kerosene and oxygen gas.

(b) Define the following terms

(i) Rigidity (ii) Compressibility (iii) Diffusion

20.

(a) List any three characteristics of a colloid.

(b) Name the two components of a colloid.

(c) Identify a colloid from the following mixtures: Muddy water, sugar in water, ink, blood, soda water, foam

21. Draw a labelled diagram of a tissue that transmits stimulus in our body (label four parts). How does this tissue enable animals to move rapidly in response to stimuli?

22.

(a) Derive the second equation of motion, $S = ut + \frac{1}{2}at^2$ graphically where the symbols have their usual meanings.

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

23.

(a) State Newton's third law of motion. Illustrate it with one example.

(b) State the law of conservation of momentum. An object of mass 50 kg is accelerated uniformly from a velocity of 10 ms^{-1} to 20 ms^{-1} in 2 seconds. Calculate the initial and final momentum of the object.

24. Define animal husbandry. List any three basic aspects covered by animal husbandry.

Mention any two basic requirements of shelter facilities for animals so that their health is not affected?

Give two examples of exotic breeds of cows which are selected for long lactation period.

Section – B

25. The food sample ideal for starch test is :

- (a) Sugar (b) Rice (c) Mustard (d) Pulses

26. In a school laboratory most commonly used chemical to test the presence of metanil yellow in dal

- (a) Iodine solution (b) Conc. HCl
(c) Alcohol (d) Safranin

27. What is observed first when a mixture of iron filings and sulphur powder is heated in a china dish:

- (a) Mixture evaporates (b) Mixture becomes red hot
(c) Iron starts melting (d) Sulphur starts melting

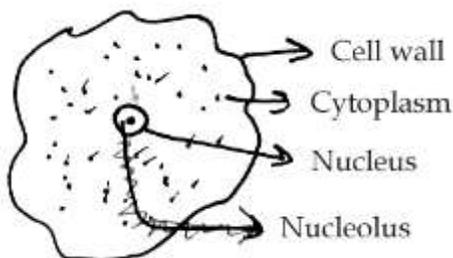
28. Which one will not be observed when a magnet is moved repeatedly through a mixture of iron filings and sulphur powder kept in a tray :

- (a) Iron filings will cling to the magnet
(b) A black mass of FeS will be produced
(c) Sulphur powder will be left in the tray
(d) Sulphur powder will dissolve in CS₂

29. When copper sulphate crystals are heated in a china dish, the copper sulphate:

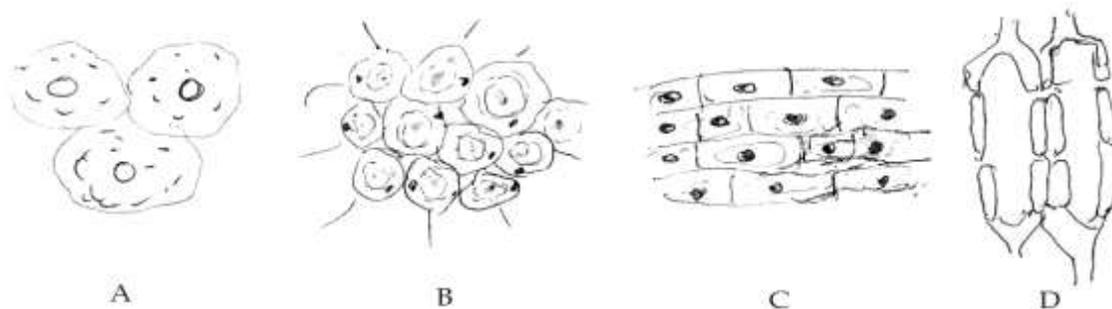
- (a) Turns white (b) turns yellow
(c) Turns green (d) remains white

30. Identify the wrong labelling in the following diagram of human cheek cell.



- (a) Cell wall (b) Nucleus (c) Nucleolus (d) Cytoplasm

31.



The above four slides were given for observation under microscope. The correct identification of the slides is:

	A	B	C	D
(a)	Cheek cells	Sclerenchyma	Onion peel	Parenchyma
(b)	Parenchyma	Cheek cells	Onion peel	Sclerenchyma
(c)	Cheek cells	Parenchyma	Onion peel	Sclerenchyma
(d)	Onion peel	Cheek cells	Parenchyma	Sclerenchyma

32. To separate a mixture of common salt and ammonium chloride by sublimation the following apparatus is provided to a student.

Iron stand, china dish, wire gauge, burner, glass rod, cotton.

The part of the apparatus missing is:

- (a) Filter paper
- (b) glass funnel
- (c) Thermometer
- (d) petri dish

33. In the experiment to establish relation between weight of a rectangular block and minimum force required, to just move it by spring balance a student measured the minimum force required as 90 gwt. for moving a wooden block of 100 gwt. Now he placed a weight of 50 gwt. on the wooden block. The minimum force required now would:

- (a) Increase
- (b) decrease
- (c) Remains same
- (d) either decrease or increase

34.

A student carefully observed the properties of colloid of starch in water. Write four correct properties of colloidal solution noted by him.

35.

Write the physical state of water at 25°C and 100°C . State these two temperatures respectively in Kelvin Scale.

36.

A student took x gram water in a beaker and dipped p gram of raisins in it. After keeping raisins in water for about 2 hours he measured the mass of soaked raisins as q grams. He also measured the mass of water left in the beaker which was y grams. On the basis of his observations write the correct formula to find the percentage of water absorbed by raisins.