980613 - A1

Class - IX

SCIENCE

Time allowed : **3 to 3½** hours | Maximum Marks : **80**

Total No. of Pages : **7**

General Instructions :

1. The question paper comprises of two sections, **A** and **B,** you are to attempt both the sections.

2. All questions are **compulsory**.

3. There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such question is to be attempted.

4. All questions to section **A** and all questions of section **B** are to be attempted separately.

5. Question numbers **1** to **4** in section **A** are one mark questions. These are to be answered in **one word** or **one sentence**.

6. Question numbers **5** to **13** are two mark questions, to be answered in about **30 words**.

7. Question numbers **14** to **22** are three mark questions, to be answered in about **50 words**.

8. Question numbers **23** to **25** are five mark questions, to be answered in about **70 words**.

9. Question numbers **26** to **41** in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to choose one most appropriate response out of the four provided to you.

10. An additional **15** minutes time has been allotted to read this question paper only.

SECTION - A

1. Identify solute and solvent in 80% solution of ethyl alcohol with water. **1**

2. Is it possible that the train in which you are sitting appears to move while it is at rest ? **1**

3. Why do passengers in a bus tend to fall backward when it starts suddenly. **1**

4. Name the two vitamins which is added in the poultry feed . **1**

5. Differentiate a true solution from a colloidal solution. **2**

6. Why should we wear cotton clothes during summer ? **2**

7. Examine the data given below for motion of two different objects A and B carefully and state whether the motion of the objects is uniform or non uniform. Give reasons. **2**

Time	Distance travelled by object A in m.	Distance travelled by object B in m.
9.30 a.m	10	12
9.45 a.m	20	19
10.00 a.m	30	23
10.15 a.m	40	35
10.30 a.m	50	37
10.45 a.m	60	41
11.00 a.m	70	44

8. A hammer of mass 500 g, moving at $50ms^{-1}$, strikes a nail. The nail stops the hammer in a very short time of 0.01 s. What is the force of the nail on the hammer ? **2**

9. What is the difference between 'G' and 'g'. **2**

10. Draw velocity time graph for : **2**

(a) An object moving with uniform velocity.

(b) An object moving with non uniform retardation.

11. (a) What would happen to the life of a cell if there was no golgi apparatus ? **2**
(b) Which cell organelle detoxifies poisons and drugs in liver of vertebrates ?

12. Name the tissue that smoothens bone surfaces at joints. Describe its structure with the help of a diagram. **2**

13. What is the major problem in fish farming ? How is this problem over come ? **2**

14. **Answer the following questions.** **3**
(a) Why is ice at 273 K more effective in cooling than water at the same temperature ?
(b) Name the two gases which are supplied in compressed form in homes and hospitals.
(c) What is dry ice ?

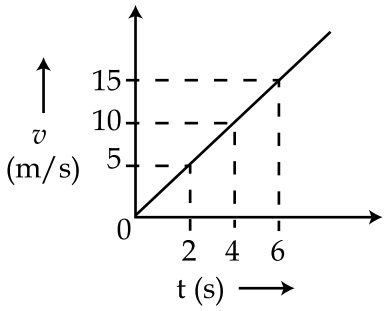
15. Describe an activity to show that matter is made up of small particles. **3**

16. Explain mixed cropping method with the help of an example. Give any one advantage of using such a method. **3**

17. How is meristematic tissue classified on the basis of its location ? Draw a well labelled diagram to show the location of meristematic tissue plant body. **3**

18. (a) What are pesticides ? **3**
(b) Why excessive use of pesticides not advisable ?
(c) Name two preventive measures against pests.

19. The motion of a body of mass 5 kg is shown in the *v*-*t* graph. **3**
Find from graph.
(a) its acceleration
(b) the force acting on the body
(c) the change in momentum of in 2 seconds after start



20. State three equations of motion. Which of them describes : **3**

(i) velocity - time relation

(ii) position -time relation ?

21. Show that weight of an object on the moon is $1/6^{th}$ of its weight on the earth. **3**

[Given : mass of earth $= 5.98 \times 10^{24}$ kg, mass of moon $= 7.36 \times 10^{22}$ kg,
Radius of earth $= 6.37 \times 10^{6}$ m, Radius of moon $= 1.74 \times 10^{6}$ m]

22. A stone is allowed to fall down from the top of a tower 100m high and at the same time another stone is projected vertically upwards from the ground with a velocity of 25 ms^{-1}. Calculate when and where the two stones will meet ? (Take g = 10ms^{-2}) **3**

23. How will you separate dyes in black ink using chromatography ? Explain it with the help of a diagram. **5**

OR

Define distillation. What type of mixture can be separated by distillation ? Draw a labelled diagram of the apparatus used for fractional distillation.

24. Mathematically show that during collision of two balls total momentum of the system remains unchanged. Hence state the law of conservation of momentum. **5**

OR

(a) Derive a relation between force and momentum.

(b) Two objects of masses 100 g and 200g are moving along the same line and direction with velocities of 2 ms^{-1} and 1 ms^{-1} respectively. They collide, and after the collision, the first object moves at a velocity of 1.67 ms^{-1}. Determine the velocity of the second object.

25. What is osmosis ? What happens to a cell when it is placed in hypotonic, isotonic and hypertonic solutions respectively. State two points of differences between osmosis and diffusion. What is plasmolysis ? **5**

OR

Draw a well labelled diagram of an animal cell and label the following organelles :

(a) The organelle that contains powerful digestive enzymes

(b) The organelle that has its own DNA

(c) The organelle that forms cytoplasmic framework

(d) The organelle that helps in expelling excess water in amoeba

SECTION - B

26. Which of the following is most stable ? **1**

(a) True solution

(b) Colloidal solution

(c) Suspension

(d) None of these

27. Which is not the property of a mixture ? **1**

(a) It is a heterogeneous system

(b) It is a system of constant composition

(c) It is a system of variable composition

(d) Its components can be separated by physical methods

28. Sodium sulphate and barium chloride solutions are mixed in a test tube. A white precipitate is formed. What type of change is this. **1**

(a) Physical change

(b) Physical and chemical change

(c) Chemical change

(d) None of the above

29. When dilute hydrochloric acid is added to granulated zinc placed in a test tube, the observation made is : **1**

(a) The surface of the metal turns shining.

(b) The reaction mixture turns milky.

(c) The odour of chlorine is observed.

(d) A colourless and odourless gas evolves with bubbles.

30. Mixture of sand and salt can be separated by : **1**

(a) dissolving mixture in water, filtration and then by distillation.

(b) dissolving mixture in water, then by filtration.

(c) dissolving mixture in water, filtration and then by evaporation.

(d) None of these.

31. When a mixture of common salt and ammonium chloride is heated, it is observed that : **1**

(a) solid common salt gets deposited on the cooler parts of the funnel while solid ammonium chloride remains in the china dish.

(b) Mixture of common salt and ammonium chloride turns into greenish crystals when allowed to cool.

(c) Ammonium chloride gets deposited on the cooler parts of the funnel and solid common salt remains in the china dish.

(d) Droplets containing both common salt and ammonium chloride appear on the upper part of the funnel while some molten mixture of common salt and ammonium chloride remains in the china dish.

32. At room temperature (30°C) a student sets up an apparatus to determine the melting point of ice. He takes a beaker half filled with ice and dips a mercury thermometer in it. The correct observation is: **1**

(a) Mercury in the thermometer keeps on falling till it reads -1°C, it remains constant thereafter.

(b) Temperature falls, reaches 0°C, then it remains constant even after the whole of the ice has melted.

(c) The temperature falls in the beginning but starts rising as soon as the ice starts melting.

(d) Temperature falls, reaches 0°C and remains constant only as long as both ice and water are present in it.

33. Which of the following apparatus is required to determine the boiling point of water ? **1**

(a) Tripod stand, conical flask, thermometer, wire gauze, stand with clamp, pair of tongs.

(b) Funnel, burner, clamp and stand, test tube, thermometer, wire gauze , stand with clamp.

(c) Boiling tube, beaker, thermometer, burner, cork with one hole, stand with clamp, wire gauze.

(d) Round bottom flask, burner, thermometer, wire gauze, stand with clamp, cork with two holes, glass tube.

34. While heating iron filings and sulphur, keep your eyes away from vapours because : **1**

(a) sulphur vapours may cause irritation in eyes.

(b) sulphur vapours are harmless.

(c) iron vapours may cause irritation in eyes.

(d) H_2S gas may cause irritation in eyes.

35. On burning magnesium ribbon, residue is obtained that resembles. **1**

(a) Paper ash (b) Chalk Powder

(c) Wood ash (d) None of the above

36. We use glycerine in temporary mount of the material because : **1**

(a) it avoids drying of the material.

(b) it provides the medium for floating the material.

(c) it increases the beauty.

(d) it increases the clarity of the material.

37. Given below are four steps for preparing a temporary mount of human cheek cells. **1**

(I) Rinsing the mouth with fresh water and disinfectant solution.

(II) Putting a drop of glycerine on the material.

(III) Adding two or three drops of methylene blue.

(IV) Take scraping from inner side of cheek and spreading it on a clean side.

Arrange them in correct sequence:

(a) IV, III, II, I

(b) IV, II, III, I

(c) I, IV, III, II

(d) I, IV, II, III

38. Which of the following tissue is cells that are irregularly thickened at the corners. **1**

(a) Parenchymatous tissue (b) Collenchymatous tissue

(c) Sclerenchymatous tissue (d) Meristematic tissue

39. A sample of milk was treated with a few drops of iodine solution. The milk sample developed blue colour. This shows the presence of which impurity ? **1**

(a) water (b) starch

(c) metanil yellow (d) none of above

40. Pick the odd one out of the following : **1**

(a) Cell body (b) Axon

(c) Light and Dark bands (d) Dendrites

41. A sample of adulterated dal was taken in a test tube, 2ml of water was added to it and it was treated by dil.HCl to detect the presence of which of the following substance. **1**

(a) Methyl orange (b) Congo red

(c) Metanil yellow (d) Chrome Yellow

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