980613 - B1

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. What is meant by a pure substance ? **1**

2. Write an example of uniform motion. **1**

3. Which one has greater inertia : a stone of mass 1kg or a stone of mass 5 kg ? **1**

4. Which nutrients are supplied by cereals and pulses ? **1**

5. Why does the smell of hot sizzling food reach you several metres away but to get the smell from cold food you have to go close ? **2**

6. Solubility of potassium nitrate at 313 K is 62 g. What mass of potassium nitrate would be needed to produce a saturated solution of KNO_3 in 52 g of water at 313 K ? What is the effect of change of temperature on the solubility of a salt ? **2**

7. A farmer moves along the boundary of a square field of side 10 m in 40s. What will be the magnitude of displacement of the farmer at the end of 2 min. 20s ? **2**

8. Explain why is it difficult for a fireman to hold a hose, which ejects large amounts of water at a high velocity. ? **2**

9. State Universal law of gravitation. What is S.I unit of G ? **2**

10. A ball is thrown vertically upwards with a velocity of 49 ms^{-1}. Calculate **2**

(a) the maximum height to which it rises .

(b) the total time it takes to return to the surface of the earth.

11. What will happen to a plant cell if it is kept in a (i) hypotonic solution (ii) hypertonic solution. **2**

12. How is green manuring done ? How is it useful for the soil ? **2**

13. What is epidermis ? What is its role ? **2**

14. Answer the following questions. **3**

(i) Arrange the following substances in increasing order of force of attraction between the particles.

(a) water (b) hydrogen (c) sand

(ii) Why does the temperature remain constant at the melting point ?

(iii) Which property of gases makes it possible to fill large volume of gases in small cylinders.

15. Define the following terms. **3**

(a) Latent heat of fusion.

(b) Melting point.

(c) Fusion.

16. Explain the ways in which the insect pests attack the plants. **3**

17. (a) What are substances that are transported by blood ? **3**

(b) Draw any two types of white blood corpuscle.

18. Explain two ways of improving the crops. **3**

19. An object experiences a net zero external unbalanced force. Is it possible for the object to be moving with a non - zero velocity ? If yes, state the conditions that must be placed on the magnitude and direction of the velocity. If no, provide a reason . **3**

20. Two objects of masses 100 g and 200 g 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. **3**

21. (a) Name the force that accelerated a body in free fall. **3**

(b) Does a stone falling towards earth also attract the earth towards it ? If yes, then why is the earth not seen moving towards the stone ?

22. (a) Differentiate between mass and weight [Two points] **3**

(b) A body weigh 30 kg on the surface of earth. How much would it weigh on the surface of a planet whose mass is $\left(\frac{1}{9}\right)$ the mass of earth and radius is half that of earth.

23. Describe the method with the help of a diagram to separate a mixture of two immiscible liquids - Kerosene oil and water **5**

OR

How can we obtain different gases from air ?

24. An object starts linear motion with a velocity 'u' and under uniform acceleration 'a' it acquires a velocity 'v' in time 't'. Draw velocity - time graph. From this graph obtain the following equations . **5**

(a) $v = u + at$

(b) $S = ut + \frac{1}{2}at^2$

OR

(a) What is a velocity - time graph ?

(b) Derive the third equation of motion $v^2 = u^2 + 2as$ graphically. (With the help of a velocity-time graph).

25. (a) Draw a neat and labelled diagram of a prokaryotic cell. **5**

(b) Differentiate between a prokaryotic and eukaryotic cell. (any 4 points of difference).

OR

(a) Draw a well labelled diagram of a plant cell and label any 4 parts .

(b) Differentiate between plant cell and animal cell.

SECTION - B

26. Which of the following cannot pass through filter paper ? **1**

(a) True solution.

(b) Colloidal solution.

(c) Suspension.

(d) None of these.

27. Which will not be observed when a magnet repeatedly passed through a mixture of iron filings and sulphur powder kept in a tray ? **1**

(a) Iron filings will stick to the magnet.

(b) A black mass of FeS will be produced.

(c) Sulphur powder will be left in the tray.

(d) Each one.

28. An iron nail was kept dipped in a solution of copper sulphate for some time. Colour change in the solution is : **1**

(a) from blue to light green.

(b) from light green to blue.

(c) from blue to red.

(d) from red to blue.

29. Some crystal of copper sulphate were dissolved in water. The colour of solution obtained would be : **1**

(a) green. (b) red. (c) blue. (d) brown.

30. What is the first step involved in the separation of mixture of sand, common salt and ammonium chloride ? **1**

(a) Magnetic separation.

(b) Chromatography.

(c) Sublimation.

(d) Sedimentation and decantation.

31. 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 evolved with bubbles.

32. The melting point of pure ice is **1**

(a) 0°C (b) 1°C (c) − 1°C (d) 4°C

33. 10 ml of a liquid was taken in a beaker. A thermometer was suspended into it. A burner was placed beneath the beaker. The rise of temperature of the liquid was noted. After the boiling temperature was reached, tell whether the temperature will : **1**

(a) remain constant.

(b) fall.

(c) rise.

(d) depends on the liquid till the whole of the liquid has converted into vapours.

34. In the laboratory, what precautions has to be taken with carbon disulphide ? **1**

(a) Keep away from flame.

(b) Keep away from carbon.

(c) Keep away from distilled water.

(d) Keep away from iron sulphide.

35. Which is not observed when carbon disulphide is added to a mixture of iron filings and sulphur powder taken in a boiling tube ? **1**

(a) Iron filings will remain unaffected.

(b) Sulphur powder will dissolve to give a yellow solution.

(c) Sulphur powder will remain unaffected.

(d) Iron sulphide (FeS) will not be formed.

36. The use of coverslip in temporary mount to cover material is : **1**

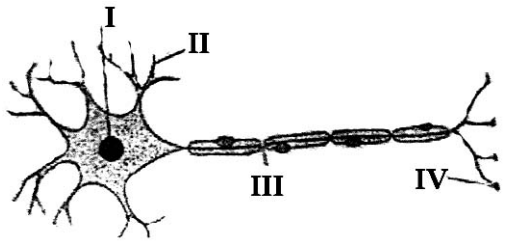
(a) to avoid drying of the material.

(b) to avoid entering of the air bubble.

(c) to avoid floating of the material.

(d) to increase the visibility.

37. Study the diagram given here and find out the correct labelling I, II, III and IV. **1**



(a) Nucleus, Axon, Nerve ending, Dendron.

(b) Nucleus, Dendron, Axon, Nerve ending.

(c) Nucleus, Axon, Dendron, Nerve ending.

(d) Nucleus, Dendron, Nerve ending, Axon.

38. A student added 2 drops of iodine solution into 4 ml. of starch solution in test tube A. Another student added 2 ml. of starch solution into 4 ml. of iodine solution in test tube B. They noticed. **1**

(a) a change of colour to blue black in test tube A but not test tube B.

(b) a change of colour to blue black in test tube B but not in test tube A.

(c) a change of colour to blue black in both the test tubes A and B.

(d) no chance of colour in any test tube.

39. On examining the onion peel which statement is not correct ? **1**

(a) Intercellular space is absent.

(b) Intercellular absent.

(c) Intracellular space is present.

(d) Nucleus is present.

40. A student observed the following points in a temporary mount slide. **1**

(i) Large irregular shaped flat cells.

(ii) Cytoplasm is dense.

(iii) Blue coloured dense nucleus placed centrally.

(iv) Each cell is bounded by a cell membrane.

Which type of cells he recognises out of the following :

(a) Onion peel cells.

(b) Parenchymatous cells.

(c) Nerve cell.

(d) Epithelial cells of human cheek.

41. Substance X was added to a test tube containing water and grounded arhar dal to test the presence of metanil yellow. The colour of the solution changed to pink. Identify X. **1**

(a) H_2O (b) NaOH (c) H_2CO_3 (d) HC*l*

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