980613 - C1

Class - IX

SCIENCE

Time : **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 questions is to be attempted.

4. All questions of 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. Name the technique to separate **1**

(a) Salt from sea - water

(b) butter from curd.

2. Define velocity. **1**

3. What do you mean by free fall ? **1**

4. [Two points] Mention any 2 advantages of using Italian bee variety in honey production. **1**

5. Why does a desert cooler cool better on a hot dry day ? **2**

6. A solution contains 40 g of common salt in 320 g of water. Calculate the concentration in terms of mass by mass percentage of the solution. **2**

7. A bullet of mass 50 g is horizontally fired with a velocity of 35 m/s from a pistol of mass 4 kg. Calculate the recoil velocity of the pistol. **2**

8. Give a simple experiment to illustrate the inertia of rest. **2**

9. State Universal law of gravitation. **2**

(ii) Express this law mathematically.

(iii) What is S.I. unit of G ?

10. An object is thrown vertically upwards and rises to a height of 20 m. Calculate **2**

(a) The velocity with which the object was thrown upwards.

(b) The time taken by the object to reach the highest point.

[$g = 10\ m/s^2$]

11. (a) State two important functions of areolar tissue. **2**

(b) Why are skeletal muscles known as striated muscles ?

12. How is a prokaryotic cell different from a eukaryotic cell ? **2**

13. What are Rabi and Kharif crops ? Give 2 examples each. **2**

14. (a) Define boiling point. **1+1+1**

(b) Express the boiling point of water in celsius as well as kelvin scale.

(c) A diver is able to cut through water in a swimming pool. Which property of matter does the observation show ?

15. Give reasons : **1+1+1**

(a) Steam produces more severe burns than boiling water.

(b) We are able to sip hot tea faster from a saucer rather than a cup.

(c) Water kept in an earthen pot becomes cool during summer.

16. Explain any 3 factors for which crop variety improvement is done. **3**

17. Name the fat storing tissue in our body. Describe its structure and function with the help of a diagram. **3**

18. (a) State 2 characteristics of a healthy animal. **1+2**

(b) State any four characteristics of storage structure for grains.

19. Joseph jogs from one end A to the other end B of a straight 300 m road in 2 minutes 50 seconds and then turns around and jogs 100 m back of point C in another 1 minute. What are Joseph's average speeds and velocities in jogging ? **3**

(a) from A to B and (b) from A to C ?

20. Rajeev went from Delhi to Chandigarh on his motorbike. The odometer of the bike read 4200 km at the start of trip and 4460 km at the end of his trip. If Rajeev took 4 h 20 minutes to complete his trip, find the average speed in Kmh^{-1} as well as ms^{-1}. **3**

21. A truck starts from rest and rolls down a hill with a constant acceleration. It travels a distance of 400 m in 20 seconds. Find the acceleration. Find the force acting on it if its mass is 7 metric tonne. [Hint 1 metric tonne = 1000 kg]. **3**

22. According to the third law of motion when we push on an object, the object pushes back on us with an equal and opposite force. If the object is a massive truck parked along the road side, it will probably not move. A student justifies this by answering that the two opposite and equal forces cancel each other. Comment on this logic and explain why the truck does not move. **3**

23. How will you separate a mixture containing kerosene and petrol (difference in their boiling point is more than 25°C), which are miscible with each other ? **5**

OR

(a) Identify solute and solvent in the following solutions : **3**

(i) aerated drinks

(ii) tincture of iodine

(iii) lemon water

(b) State the principle of each of the following methods of separation of mixtures. **2**

(i) centrifugation method.

(ii) separation using separating funnel.

24. (a) Differentiate between Mass and Weight [Four points]. **2**

(b) Show that weight of an object on moon is equal to $\frac{1}{6}$ of the Weight of the object on the earth. Given Mass of earth $= 65 \times 10^{24}$ kg Mass of moon $= 7 \times 10^{22}$kg Radius of earth $= 6.4 \times 10^{6}$m. **3**

OR

Will a sheet of paper fall slower than one that

(a) Is crumpled into a ball in Vacuum ? Write. **1**

(b) Show mathematically that accelecation experienced by an object is independent of its mass. **2**

(c) Show that Value of $g = 9.8 m/s^2$ **2**

Given $G = 6.7 \times 10^{-11}$ N m^2 / kg^2

$M = 6 \times 10^{24}$ kg

$R = 6.4 \times 10^{6}$ m

25. Describe an activity to demonstrate endosmosis and exosmosis. Draw a diagram also. **5**

OR

(a) Give the chemical composition and functions of plasma membrane and cell wall. Differentiate between the two. **3+2**

(b) What is meant by membrance biogenesis ?

Which cell organelle is concerned with membrance biogenesis ?

SECTION - B **16x1=16**

26. A student was asked to mix the white of an egg with water and stir well. The student observed that **1**

(a) transparent solution is formed

(b) a translucent mixture is formed

(c) egg white settles down at the bottom

(d) egg white floats on the surface of the water

27. A student by mistake mixed iron filings and sulphur powder. He wanted to separate them each other. The method you would advise him to use is to dissolve the mixture in **1**

(a) Boiling water

(b) Cold water

(c) Carbon disulphide

(d) Kerosene

28. Magnesium ribbon on burning produces an ash. The colour of the ash is **1**

(a) colourless (b) light pink (c) dark pink (d) white

29. A student took about 10 mL of dil. H_2SO_4 in a conical flask and added a few pieces of clean zinc metal. He observed small bubbles of a colourless and odourless gas coming out of the flask. On bringing a candle flame at he mouth of the flask, he observed that the candle flame goes off and the gas in the flask burns with a pop sound. This gas is : **1**

(a) O_2 (b) H_2S (c) SO_2 (d) H_2

30. Recovery of salt from salt solution can be quickly done by : **1**

(a) filtration
(b) evaporation
(c) distillation
(d) none of these

31. Sublimation can be used to separate : **1**

(a) volatile liquids from non - volatile liquids solids
(b) volatile solids from non - volatile
(c) volatile liquids from non - volatile solid.
(d) all of these

32. Melting temperature is the temperature at which the solid changes into liquid at **1**

(a) double the atmospheric pressure
(b) half the atmospheric pressure
(c) atmospheric pressure
(d) no particular pressure

33. The temperature at which ice and water exist together at atmospheric pressure is : **1**

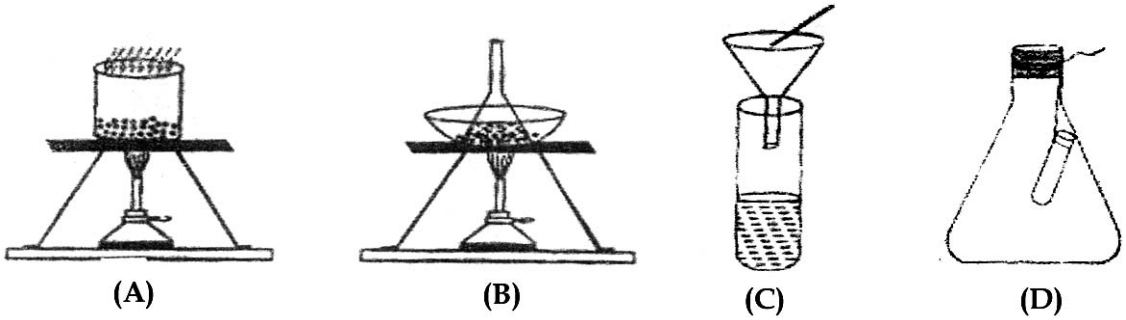
(a) $-1.5°C$ (b) $0°C$ (c) $-1°C$ (d) $4°C$

34. To prepare iron sulphide by heating a mixture of iron filings and sulphur powder, we should use a **1**

(a) Copper dish (b) Watch glass (c) China dish (d) Petri dish

35. Which one of the following figures describes the process ? **1**

$$\text{Solid} \xrightarrow{\text{heat}} \text{Vapours}$$



(A) (B) (C) (D)

36. Put the coverslip gently on the slide to : **1**

(a) avoid entry of air bubbles

(b) avoid crushing of peel

(c) avoid oozing of stain

(d) see the material clearly.

37. Which one of the following is the correct step, in the procedure for making a temporary slide of human cheek cells ? **1**

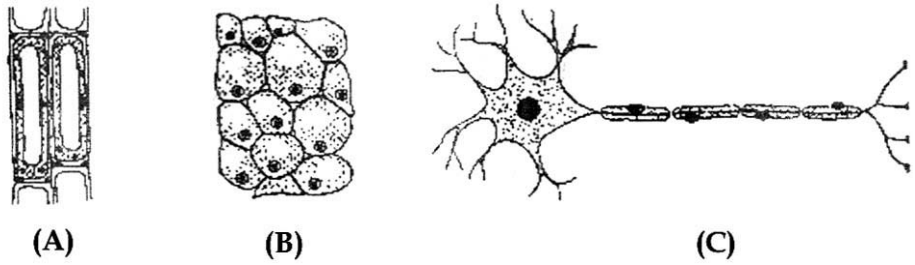
(a) Place the cheek cell scraping's in a watch glass containing water.

(b) Place cheek cell scrapings in the centre of a clean slide.

(c) Dip the tooth pick containing cheek cell scrapings in the stain and then transfer to a clean slide.

(d) Obtain cheek cells directly in the slide using its edge to scrap the inside of the cheek.

38. Identify the following slides in the correct order based on the facture : **1**



(A) **(B)** **(C)**

(a) Nerve cell, Parenchyma, Sclerenchyma

(b) Sclerenchyma, Nerve cell, Parenchyma

(c) Sclerenchyma, Parenchyma, Nerve cell

(d) Parenchyma, Sclerenchyma, Nerve cell

39. A student took 5 g of powdered Arhar dal in a test tube and added 5 ml water into it. She shook the test tube vigorously. After adding a few drops of HC*l*, she observed that the dal tested positive for adulteration with metanil yellow. The observation she noted was **1**

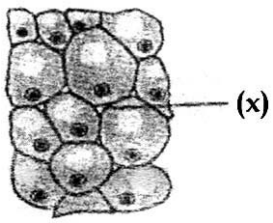
(a) The water turned brown

(b) There was no colour change in water

(c) The water turned pink

(d) The water turned blue black.

40. Identify the labelled part (x) of the given figure : **1**



(a) Air cavity
(b) Intercellular space
(c) Intracellular space
(d) Vacuole

41. A student on adding a solution X to rice extract, observed the conversion of colour of solution to bluish black. Identify the compound X. **1**

(a) Bromine solution
(b) Iodine solution
(c) Distilled water
(d) Salt solution

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