

## Sample Question Paper

Time: 1 ½ hours Maximum Marks: 20

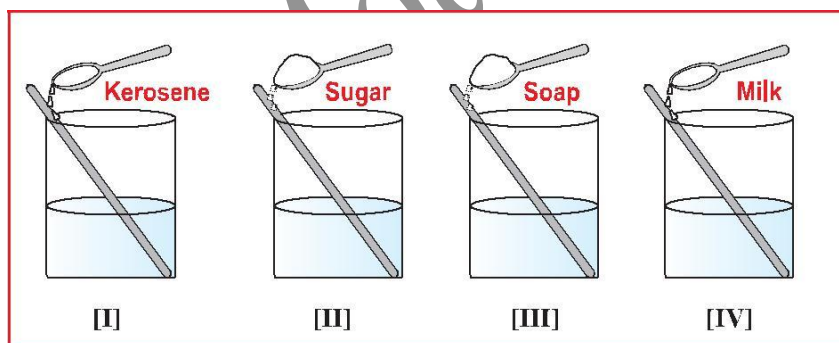
### INSTRUCTIONS

1. Attempt all questions.
2. There are 30 multiple choice questions in total. Only one of the options in every question is correct.
3. The question paper consists of two parts – Section A and Section B. Each of the 20 questions in Section A carries 0.5 mark and each of the 10 questions in Section B carries 1.0 mark.

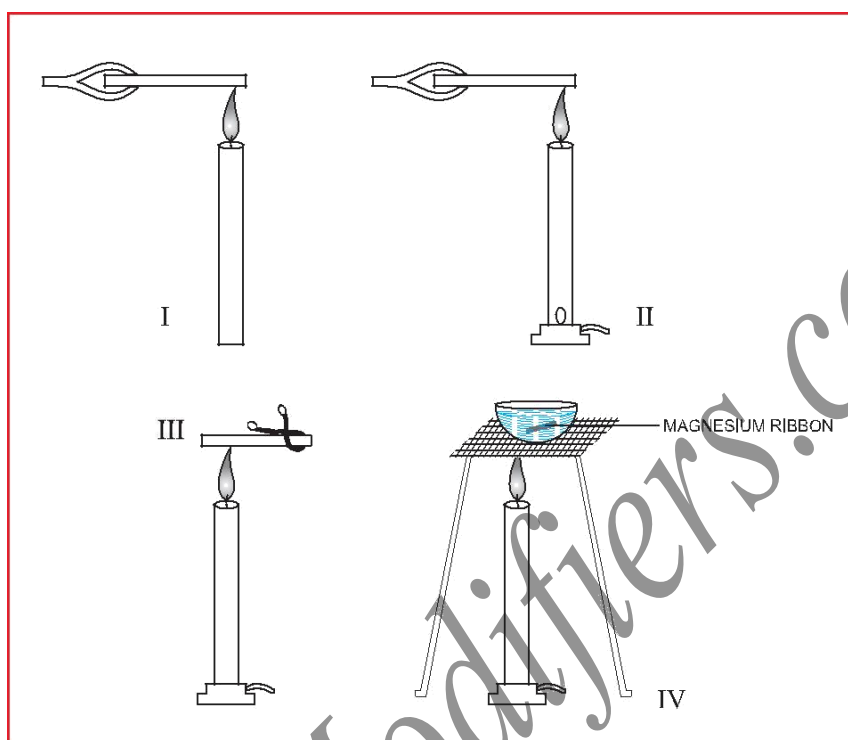
### SECTION - A

1. The following substances are added to water in a beaker as shown below. The mixture is stirred well. A true solution is found in the beaker

- (a) I
- (b) II
- (c) III
- (d) IV



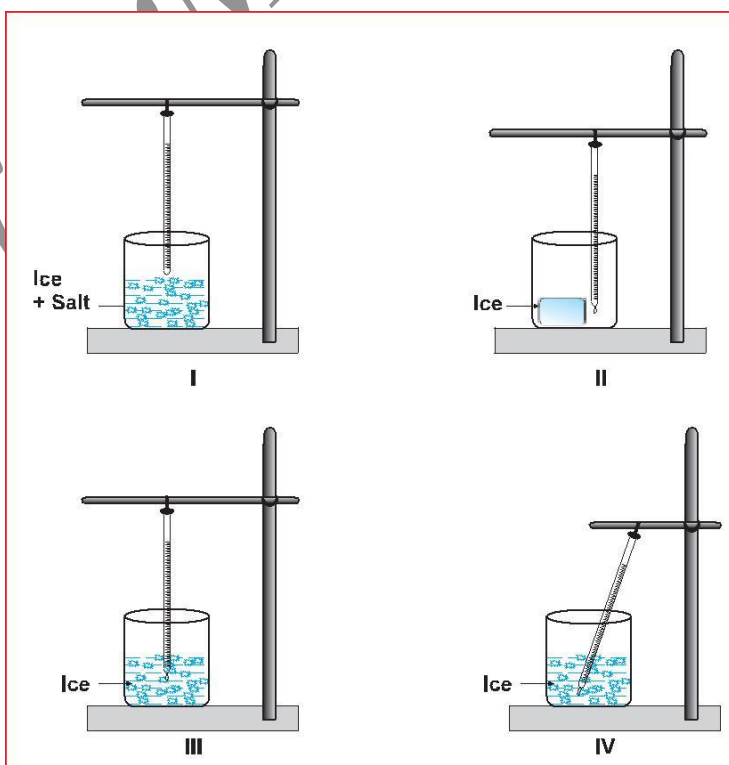
2. When we start heating a mixture of sulphur powder and iron filings, we would observe that
  - (a) sulphur starts melting.
  - (b) iron filings start melting.
  - (c) mixture becomes red hot.
  - (d) mixture evaporates
3. Four students used different ways of burning magnesium ribbon during an experiment as shown below. The correct way has been followed by student :



- (a) I
- (b) II
- (c) III
- (d) IV

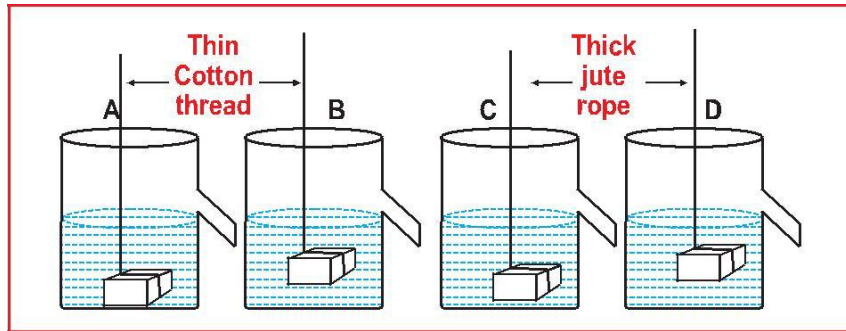
4. Which one of the following is the correct set up to determine the melting point of ice?

- (a) I
- (b) II
- (c) III
- (d) IV



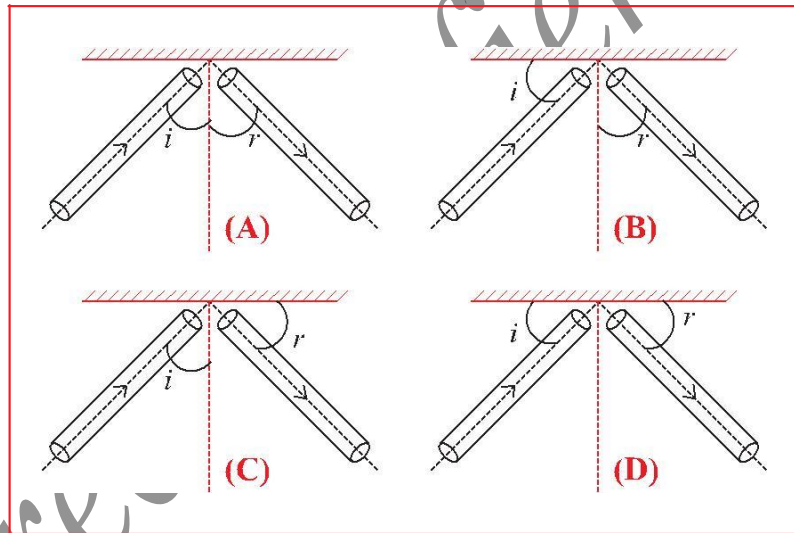
5. In the experiment to establish the relation between loss in weight of an immersed solid with the weight of water displaced by it, the correct setup is shown in figure

- (a) A
- (b) B
- (c) C
- (d) D



6. While doing experiment on verifying the law of reflection of sound, four students measured the angles  $\angle i$  and  $\angle r$  as shown in the diagram below. The correct measurement of the angles of incidence and angle of reflections, has been done by student.

- (a) A
- (b) B
- (c) C
- (d) D



7. The table below gives the observations reported by two students X and Y for an experiment on the study of temperature-time graph. The experiment is likely to have been performed correctly by

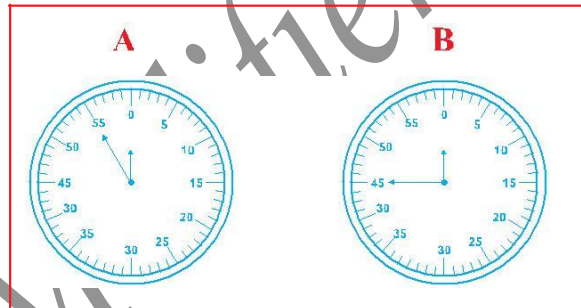
- (a) X.
- (b) Y.
- (c) both X and Y.
- (d) neither X nor Y.

Time (min)	Temp ( $^{\circ}\text{C}$ )	observed by
	Student X	Student Y
0	61.0	61.0
2	60.5	59.0

4	60.0	58.0
6	59.0	57.5
8	58.0	57.0
10	56.5	56.5
12	54.0	56.0

8. A strong transverse horizontal pulse, created at one end of a string, is observed to complete 5 single journeys (from one end to other end) along its length, before fading out. The initial and final readings, on a stop-clock used in the experiment, are as shown here. If the length of the string is L metre, the speed of the pulse, through the string, is

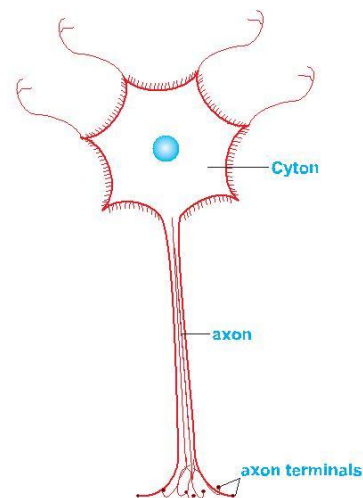
- (a)  $(L/9) \text{ ms}^{-1}$   
 (b)  $(L/10) \text{ ms}^{-1}$   
 (c)  $(L/45) \text{ ms}^{-1}$   
 (d)  $(L/50) \text{ ms}^{-1}$



9. Nikita observed a slide of cheek cells, first under low power and then under high power of a microscope. Under the low power she must have seen
- (a) fewer cells in a darker field of view.  
 (b) more cells in a brighter field of view.  
 (c) more cells in a darker field of view.  
 (d) fewer cells in a brighter field of view.
10. Raj observed nerve cells under the microscope and made the following sketch.

The mistake in his drawing is that cyton is shown to have

- (a) cilia  
 (b) dendrites  
 (c) nucleus  
 (d) cytoplasm.



11. 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 would then observe

- (a) a change of colour to blue black in test tube A but not in 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 test tubes A and B
- (d) no change of colour in any test tube.

12. A student observed that the colour of pH paper changed to green when she dipped it in water. She added a few drops of concentrated hydrochloric acid to the water. The colour of pH would turn to

- (a) light red.
- (b) apple green.
- (c) dark blue.
- (d) lemon yellow.

13. 10 mL of freshly prepared iron sulphate was taken in each of four test tubes. Strips of copper, iron, zinc and aluminium were introduced, each metal in a different test tube. A black residue was obtained in two of them. The right pair of metals forming the precipitates is

- (a) copper and zinc.
- (b) aluminium and copper.
- (c) iron and aluminium.
- (d) zinc and aluminium.

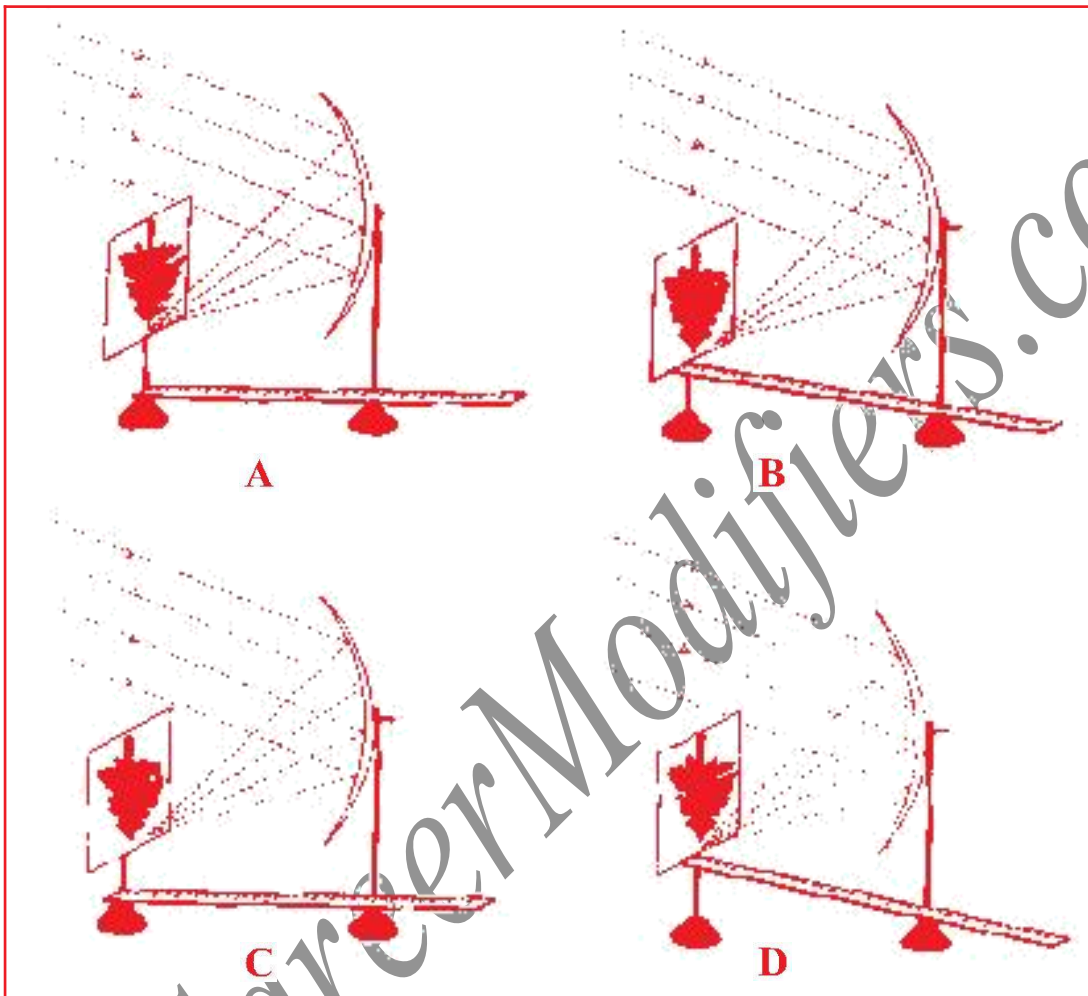
14. The following symbols are usually shown on the bottles of commercial acetic acid.



The symbols indicate that acetic acid is

- (a) corrosive and flammable.
- (b) radioactive and flammable.
- (c) oxidizing and corrosive.
- (d) flammable and explosive.

15. Four student A, B, C and D carried out measurement of focal length of a concave mirror as shown in the four diagrams.



The best result will be obtained by student

- (a) A
- (b) B
- (c) C
- (d) D

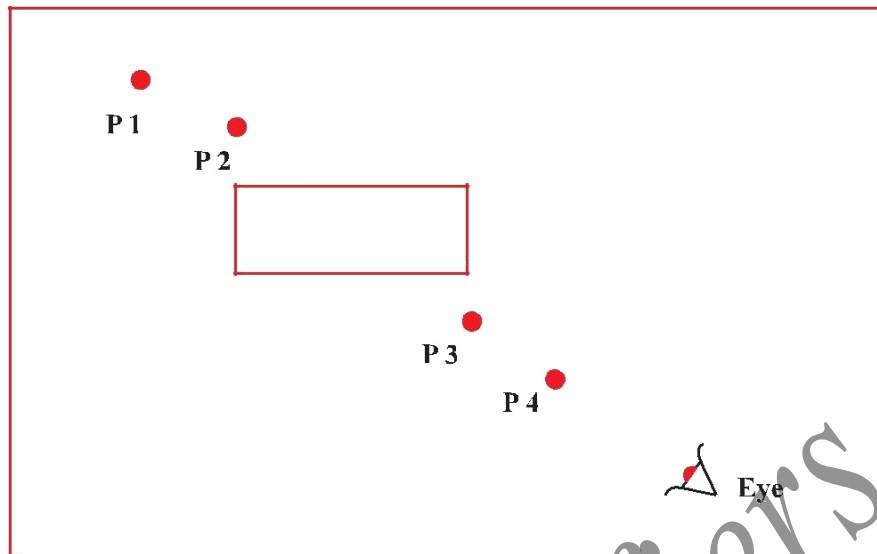
16. In the glass slab experiment shown below, four students A, B, C and D did the following:

A: kept the eyes far from the glass slab while placing both the pins  $P_3$  and  $P_4$

B: kept the eyes close to the glass slab while placing both the pins  $P_3$  and  $P_4$

C: kept the eyes close to the glass slab while placing pin  $P_3$  and far from the slab while placing pin  $P_4$

D: kept the eyes far from the glass slab while placing pin  $P_3$  and close to the slab while placing pin  $P_4$

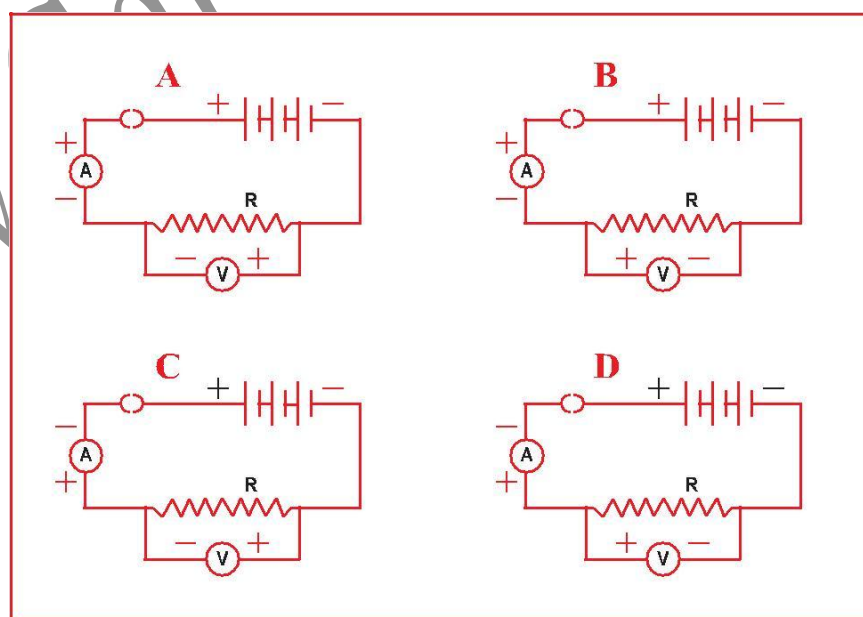


The correct procedure is that of student

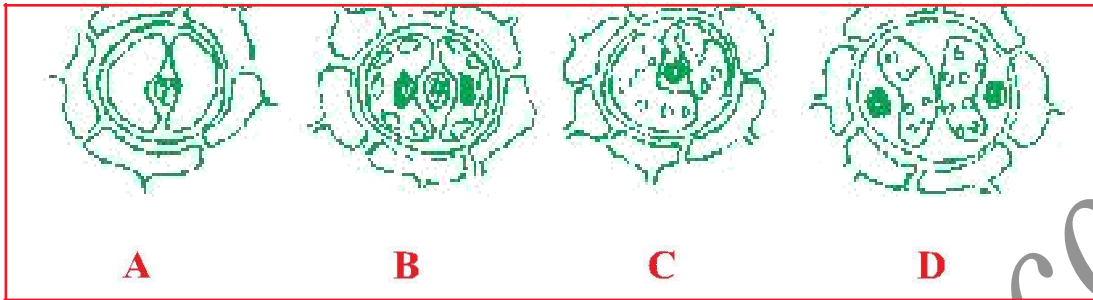
- (a) A.
- (b) B.
- (c) C.
- (d) D.

17. Out of the four circuits shown for studying the dependence of the current on the potential difference across a resistor, the correct circuit is

- (a) A
- (b) B
- (c) D
- (d) E



18. Students observed the epidermal peel of a leaf under the high power of a microscope. The following are the sketches made by them.



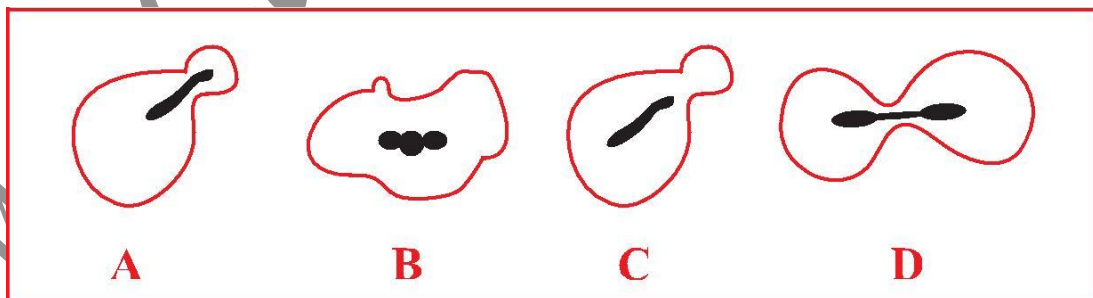
The correct sketch is

- (a) A
- (b) B
- (c) C
- (d) D

19. Student A, B and C were given five raisins each of equal weight. The raisins were soaked in distilled water at room temperature. A removed the raisins after 30 minutes, B after two hours and C after one hour. If  $P_A$ ,  $P_B$  and  $P_C$  denote percentage absorption of water obtained by students A, B and C respectively, then

- (a)  $P_A > P_B > P_C$
- (b)  $P_A < P_B < P_C$
- (c)  $P_A < P_B > P_C$
- (d)  $P_A = P_B = P_C$

20. Out of the following diagrams which one depicts a stage in binary fission of amoeba.



- (a) A
- (b) B
- (c) C
- (d) D



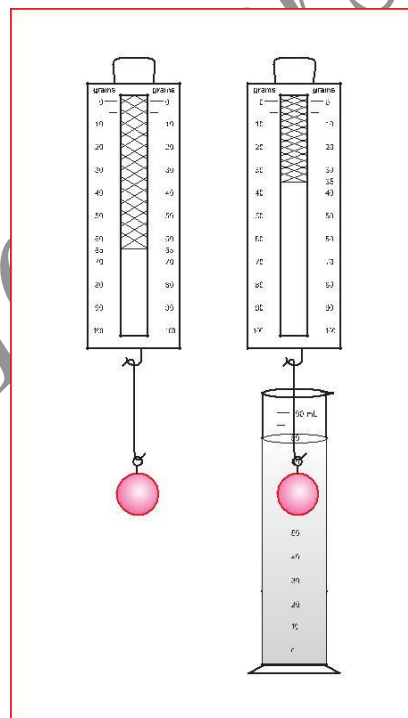
## SECTION - B

21. Which one of the following would be the correct set of apparatus required if you have to separate camphor and common salt?

- (a) Round bottom flask, funnel, burner, condensor, wire guage, stand with clamp
- (b) Conical flask, filter paper, funnel, beaker, stand with clamp, wire guage
- (c) Separating funnel, beaker, conical flask tripod stand, burner wire guaze
- (d) China dish, funnel, burner, cotton plug, tripod stand, stand with clamp, wire guaze.

22. A student notes down the observations in the two spring balances and the measuring cylinder shown in the figure. From the given observations, the volume of the solid is

- (a) 64 cc
- (b) 36 cc
- (c) 30 cc
- (d) 100 cc



23. Given below are pictures of two animals A and B belonging to two different phyla. Which characteristic features of their bodies are specific features of their respective phyla?



- (a) Antennae of A and segments of B
- (b) Three pairs of appendages of A and clitellum of B
- (c) Jointed appendages of A and segmented body without appendages
- (d) Wings of A and slender body of B

24. The teacher had shown the students two specimens A and B from the plant kingdom whose pictures are given below. Which was the correct identification and classification into its group?



- (a) Cone of gymnosperm and flower of angiosperm.
- (b) Cone of angiosperm and flower of gymnosperm.
- (c) Cone and flower of an angiosperm,
- (d) Cone and flower of a gymnosperm.

25. Student were asked to study the reaction between barium chloride and sodium sulphate. Four different reports of the experiment are given below. Choose the correct one.

Procedure	Observation
a Mixed powder of barium chloride and sodium sulphate.	The colour of the mixture changes to yellow.
b Mixed solution of barium chloride to sodium sulphate.	Thick white precipitate is formed.
c Added solution of barium chloride to sodium sulphate powder	Solution become turbid
d Added powder of barium chloride to sodium sulphate solution.	No change is observed.

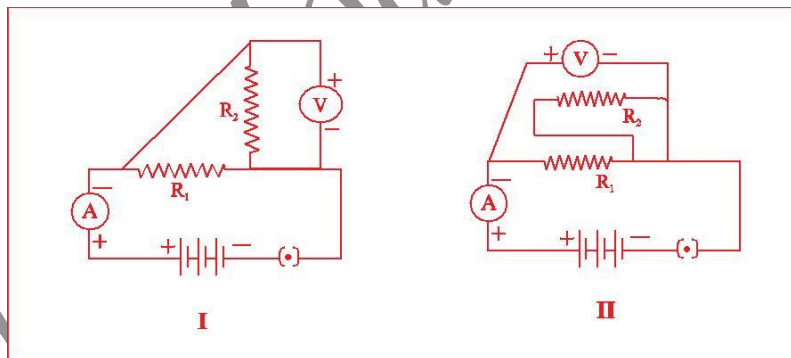
26. Four students studied reactions of zinc and sodium carbonate with dilute hydrochloric acid and dilute sodium hydroxide solutions and presented their results as follows. The '√' represents evolution of gas, whereas 'X' represents absence of any reaction.

HCl	Zn	Na <sub>2</sub> CO <sub>3</sub>	HCl	Zn	Na <sub>2</sub> CO <sub>3</sub>
✓	✓	✓	✓	✓	✗
NaOH	✓	✗	NaOH	✓	✓
		A			B
HCl	Zn	Na <sub>2</sub> CO <sub>3</sub>	HCl	Zn	Na <sub>2</sub> CO <sub>3</sub>
✗	✗	✗	✓	✓	✓
NaOH	✓	✓	NaOH	✗	✗
		C			D

The right set of observations is that of student

- (a) A
- (b) B
- (c) C
- (d) D

27. The resistors  $R_1$  and  $R_2$  are connected in



- (a) parallel in both circuits.
- (b) series in both circuits.
- (c) parallel in circuit I and in series in circuit II.
- (d) series in circuit I and in parallel in circuit II.

28. Circuit I : ammeter reads current  $i_1$ , and voltmeter reads  $V_1$   
 Circuit II : ammeter reads current  $i_2$  and voltmeter reads  $V_2$

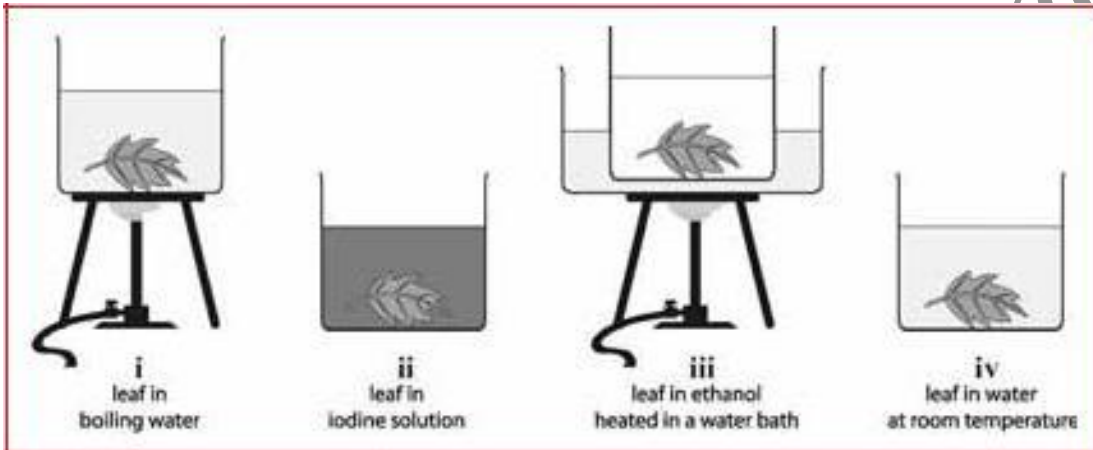
The relationship between the readings is



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- (a)  $i_1 > i_2$ , ;  $V_1 = V_2$
- (b)  $i_1 < i_2$ , ;  $V_1 = V_2$
- (c)  $i_1 > i_2$ , ;  $V_1 > V_2$
- (d)  $i_1 < i_2$ , ;  $V_1 < V_2$

29. A student performed the starch test on a leaf. Some steps involved are shown below :



The correct swquence of steps should be

- (a) iv; iii; ii; i
- (b) i; ii; iii; iv
- (c) ii; iii; iv; i
- (d) i; iii; iv; ii

30. After performing the experiment to show that germinating seeds give out carbon dioxide during respiration, students drew the following diagrams.

The correct labelled diagram is

- (a) A
- (b) B
- (c) C
- (d) D

