

Sample Question Paper

Time: 1 ½ hours

Maximum Marks: 20

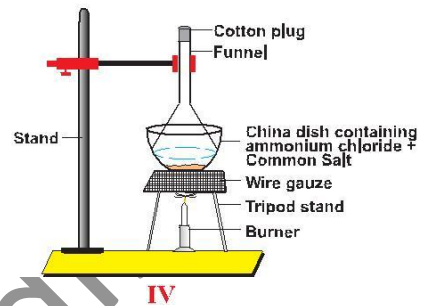
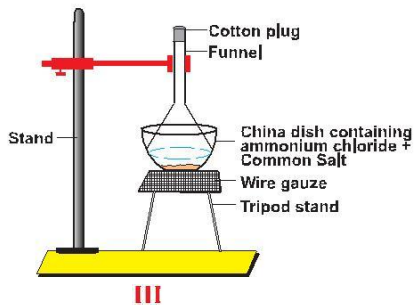
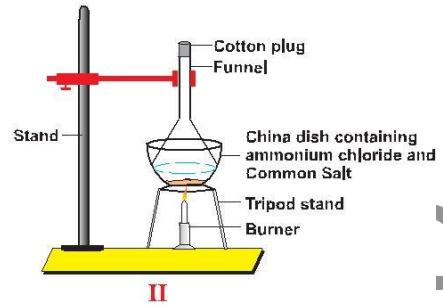
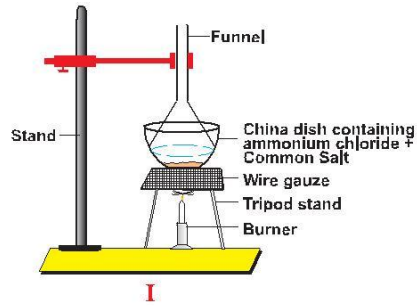
INSTRUCTIONS

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. A student was asked to mix the white of an egg with water and stir well. The student observed that
 - (a) 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.
2. A student by mistake mixed iron filings and sulphur powder. He wanted to separate them from each other. The method you would advise him to use is dissolve the mixture in
 - (a) boiling water.
 - (b) cold water.
 - (c) carbon disulphide.
 - (d) kerosene.
3. The colour of NO_2 and PbO formed when lead nitrate is heated are :
 - (a) brown and green
 - (b) brown and yellow
 - (c) brown and colourless
 - (d) colourless and yellow

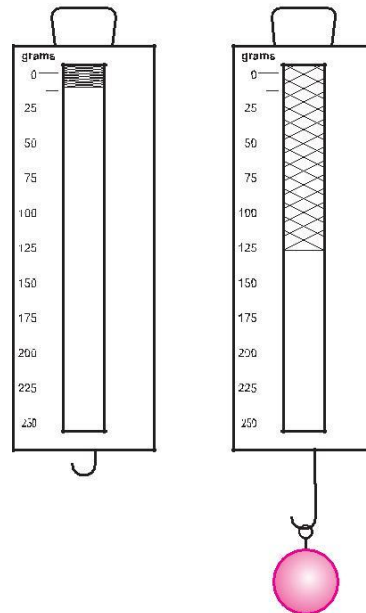
4. Which of the following is the correct arrangement for separation of mixture of common salt and ammonium chloride?



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

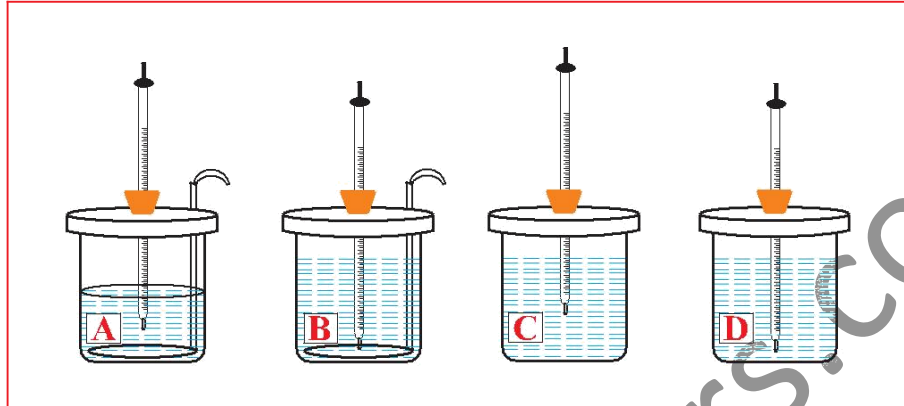
5. The spring balance shown here is used to measure the mass of given solid. The mass of the solid is

- (a) 115 g
- (b) 118 g
- (c) 120 g
- (d) 125 g



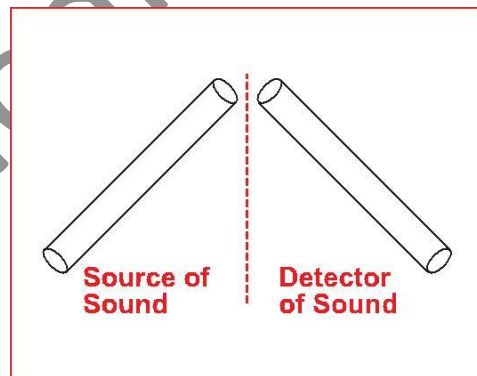
6. Of the four experimental set-ups shown here to study temperature-time graph, the best one is

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



7. For doing his experiment on verifying the laws of reflection of sound, a student sets up his apparatus as shown. The experiment is more likely to get performed successfully if the screen shown is a

- (a) plane wooden board.
(b) wooden board with many holes in it.
(c) a foam padded board.
(d) a sheet of pure white cloth.



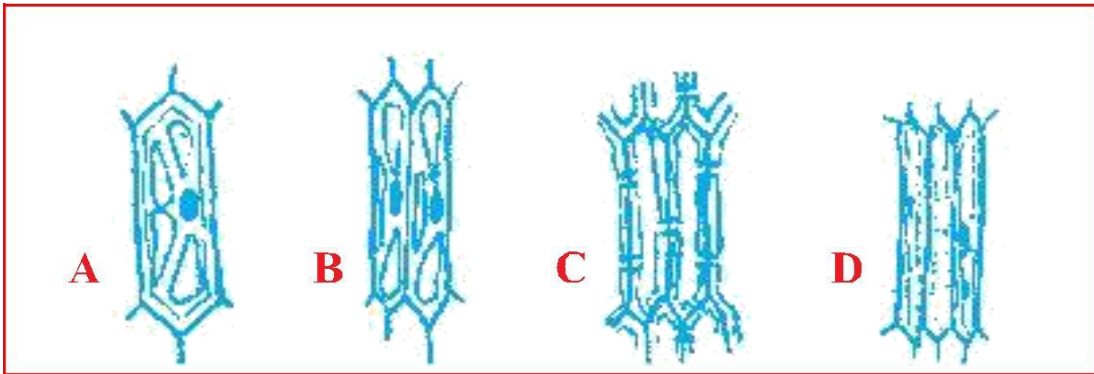
8. Four students did their experiment on measuring the speed of a pulse through a string as follows :
- Student A stretched his thick cotton string very taut and gave it a very mild transverse horizontal jerk
- Student B stretched his thin jute string just taut and gave it a mild transverse horizontal jerk
- Student C stretched his thick cotton string just taut and gave a strong transverse horizontal jerk
- Student D stretched his thin jute string very taut and gave it a strong transverse horizontal jerk.

The best choice is that of student

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

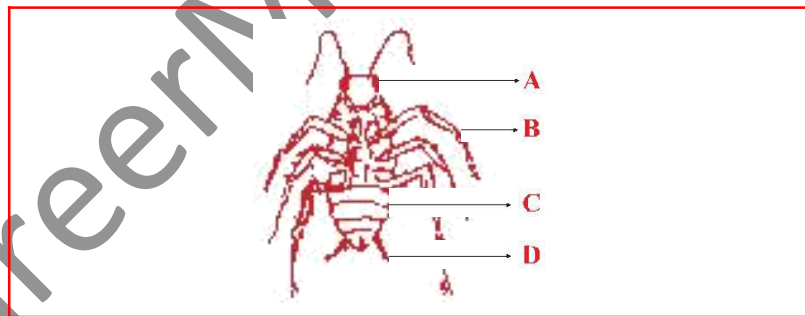
9. While observing a thin section of a plant stem, four students sketched sclerenchyma as given below. The correct diagram is

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



10. A student wants to observe a spiracle of a cockroach. She should observe the region on its body shown by the label

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



11. To observe starch granules in potato under a microscope, freshly cut surface of potato was pressed on a slide. The stain that will show starch granules clearly is

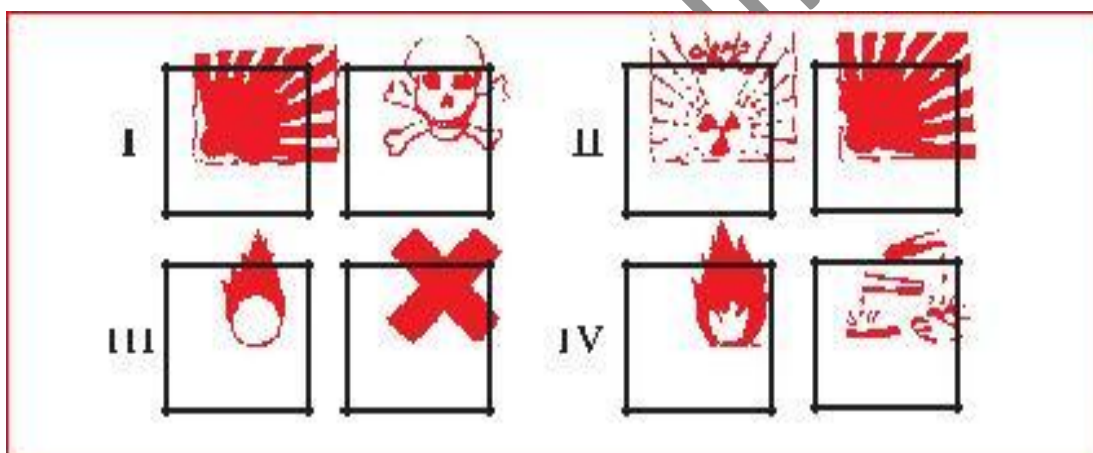
- (a) methylene blue
- (b) iodine
- (c) safranin
- (d) eosine

12. Bottle A contains oxalic acid and bottle B contains sodium carbonate solution. When pH paper is dipped in each of the solutions, the colour seen in A and B respectively be

- (a) orange, blue.
- (b) blue, orange.
- (c) green, blue.
- (d) orange, green.

13. The pair of safety symbols you notice on the bottles of commercial acetic acid available in the laboratory, is shown in

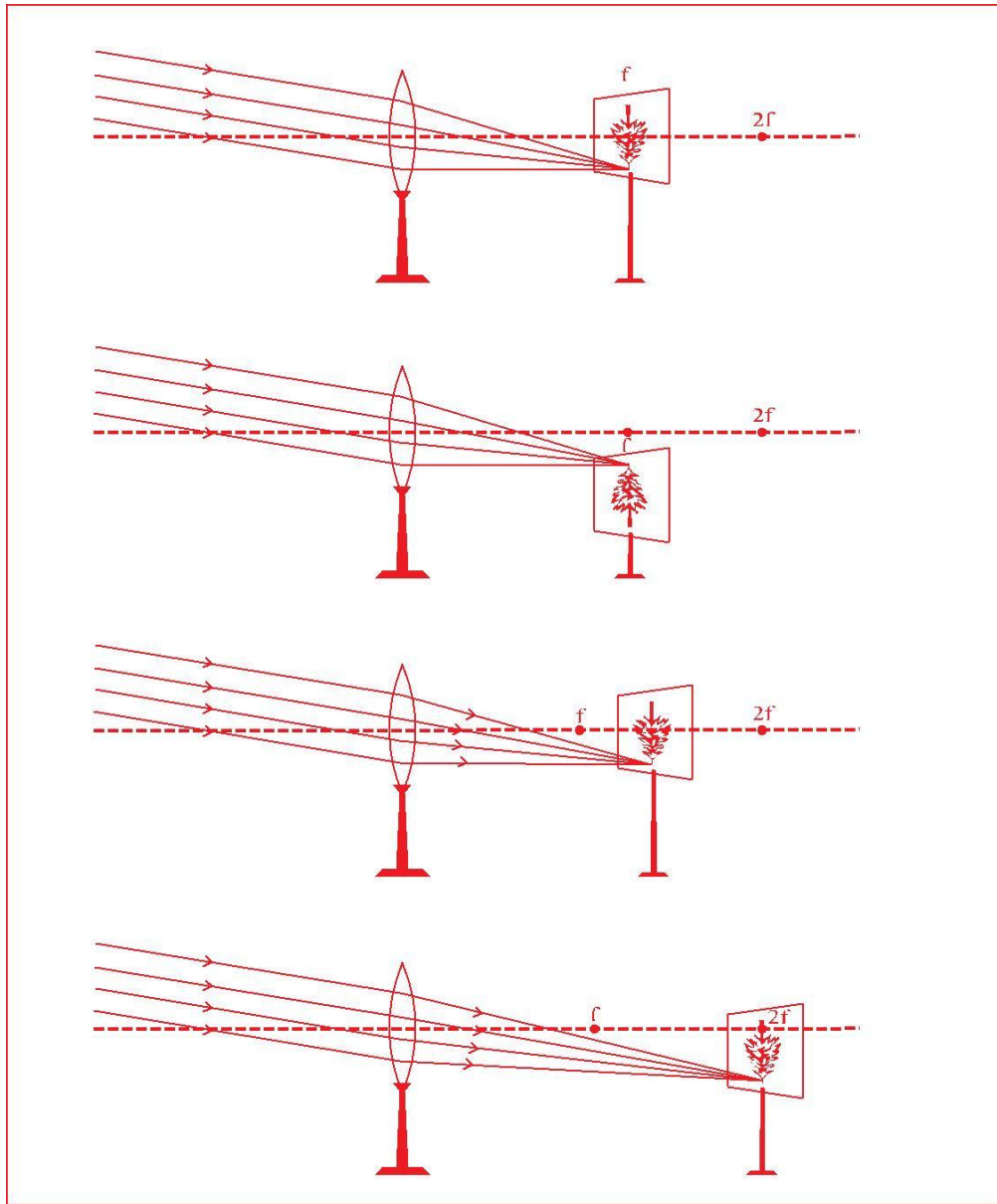
- (a) I.
- (b) II.
- (c) III.
- (d) IV



14. When you place iron nail in copper sulphate solution, the reddish brown coating formed on the nail is

- (a) soft and dull.
- (b) hard and flaky.
- (c) smooth and shining.
- (d) rough and granular.

15. Parallel rays from a distant tree incident on a convex lens form an image on the screen.

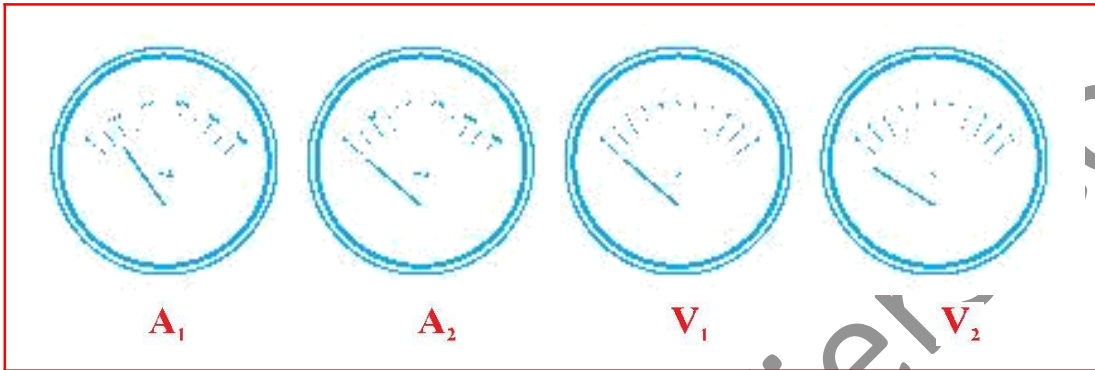


The diagram correctly showing the image of the tree on the screen is

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

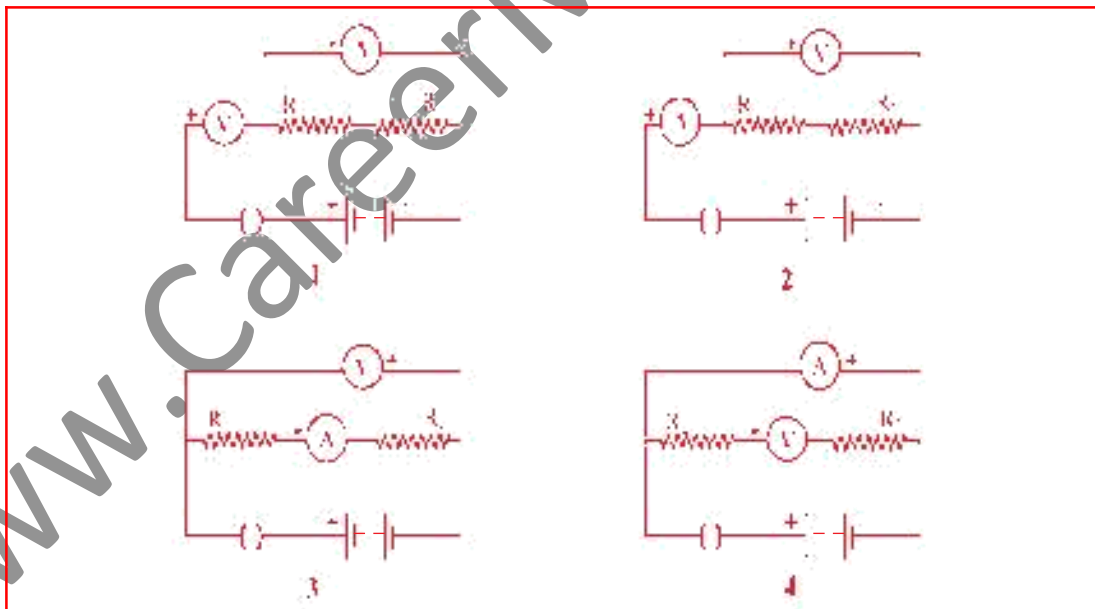
16. The positions of the pointers of the two ammeters A_1 and A_2 , and two voltmeters V_1 and V_2 available in the laboratory are shown in the given figure. For an experiment to study the dependence of the current on the potential difference across a resistor, the student would prefer

- (a) ammeter A_1 and voltmeter V_1 .
- (b) ammeter A_2 and voltmeter V_1 .
- (c) ammeter A_1 and voltmeter V_2 .
- (d) ammeter A_2 and voltmeter V_2 .



17. The correct way of connecting the ammeter and voltmeter with a series combination of two resistors in a circuit for finding their equivalent resistance, is shown in diagram

- (a) 1.
- (b) 2.
- (c) 3.
- (d) 4.



18. While preparing a temporary mount of stomata, four students used different stains given below

| STUDENT | STAIN |
|---------|----------------|
| A | Acetocarmine |
| B | Methylene Blue |
| C | Safranin |
| D | Iodine |

The correct stain was used by the student

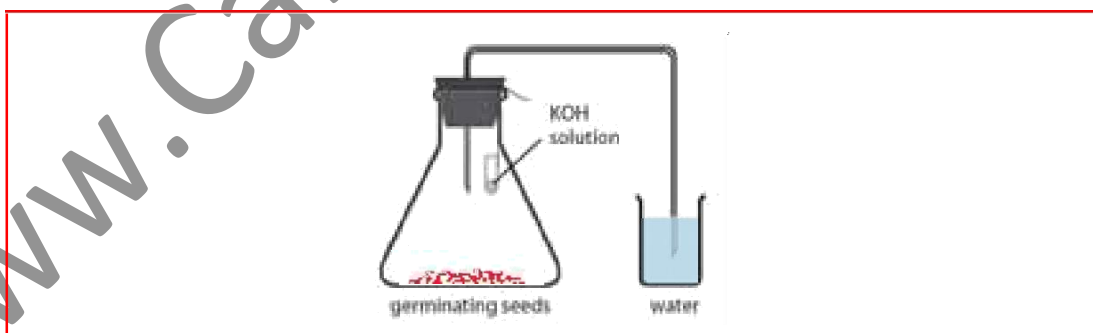
- (a) A
- (b) B
- (c) C
- (d) D

19. A part of de-starched leaf of a potted plant was covered with black paper strips on both sides and the plant was kept in sunlight for 8 hours. The leaf was then tested with iodine after boiling it in alcohol. Only the uncovered part of the leaf turned blue black. The inference is that

- (a) CO₂ is necessary for photosynthesis.
- (b) light is necessary for photosynthesis.
- (c) chlorophyll is necessary for photosynthesis.
- (d) water is necessary for photosynthesis.

20. In the experiment shown in the figure, water is found to rise in the bent tube.

The reason is that



- (a) CO₂ in the bent tube dissolves in water.
- (b) Partial vacuum is created in the flask.
- (c) Atmospheric pressure outside is reduced
- (d) Water in the bent tube rises due to capillary action.

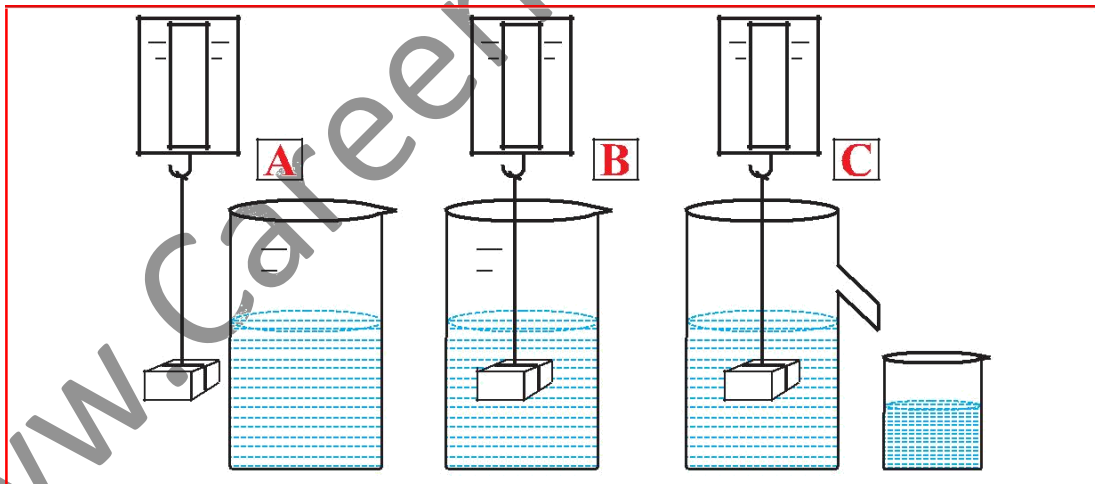
SECTION - B

21. Which of the following set of apparatus is required to determine the boiling point of water?

- (a) tripod stand, conical flask, thermometer, wire gauze, stand with clamp, pair of tongs
- (b) funnel, burner, 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 2 holes, glass tube

22. The readings of the spring balance will be

- (a) equal to each other in all cases A, B and C.
- (b) equal to each other in cases A and C only.
- (c) equal to each other in cases B and C only.
- (d) different in every case.

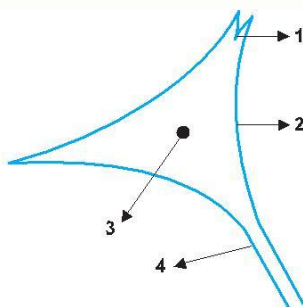


23. You are viewing a prepared slide of striped muscle fibers from cockroach leg. When you focus the microscope, the striations appear pale and indistinct. To make the striations clearly visible, you would

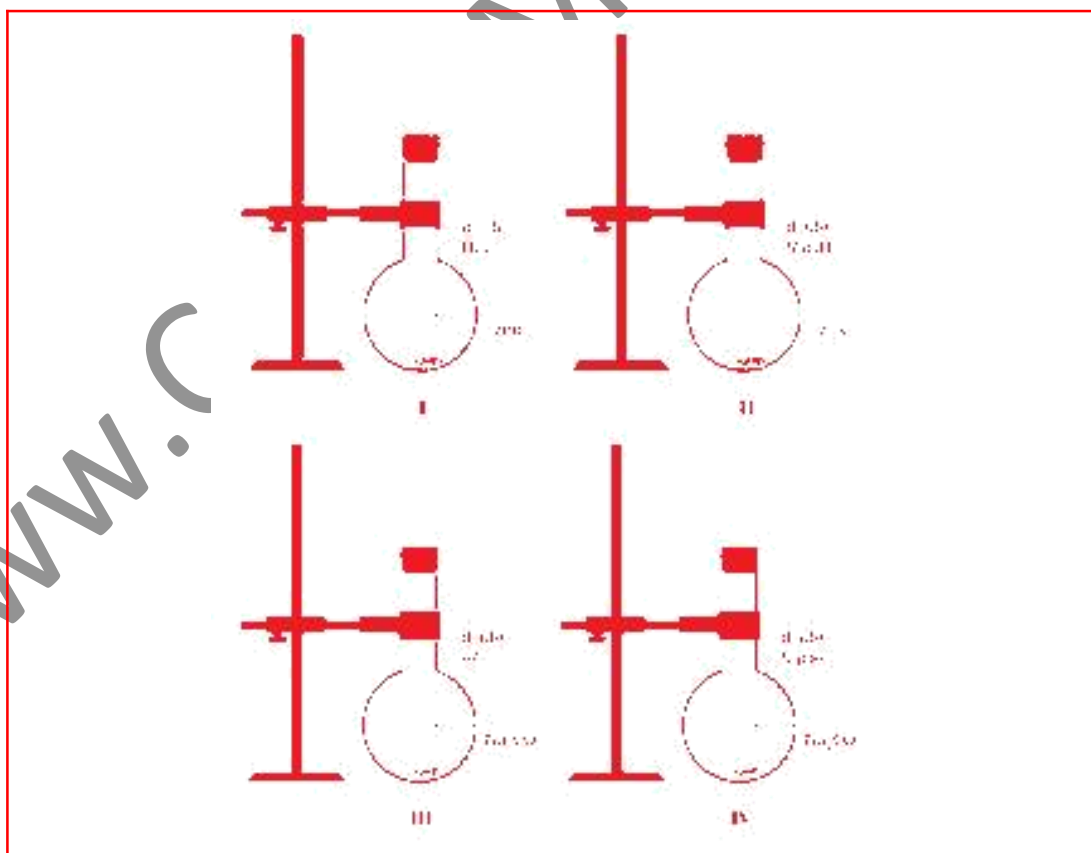
- (a) slowly close the diaphragm to reduce the light.
- (b) remove the mirror to cut out light.
- (c) change the eye piece to increase magnification.
- (d) replace the objective to decrease magnification.

24. A figure depicting parts of a neuron is given below. The correct identification of the labels 1, 2, 3, 4 respectively is

- (a) dendrite, cytoplasm, Nissl granules, nerve fibre.
- (b) cilia, endoplasmic reticulum, nucleoli, nerve fibre.
- (c) dendrons, cell body, Nissl granules, axon.
- (d) dendrites, cyton, nucleus, axon.



25. Four experimental set ups are shown below to study the reaction of HCl and NaOH on zinc and sodium carbonate.



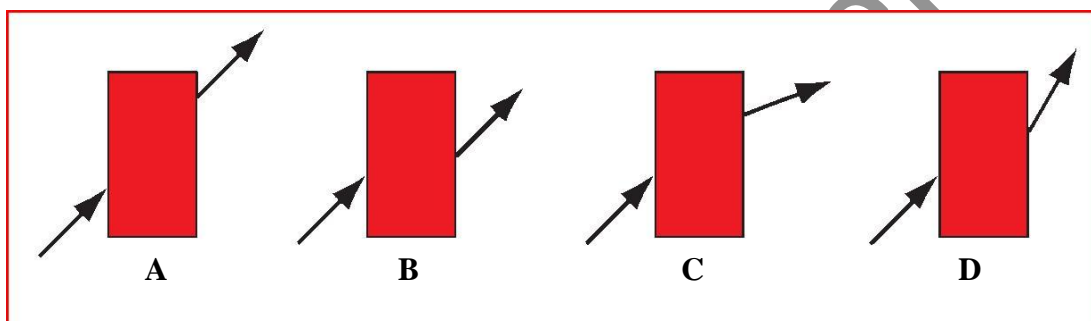
The set ups that would result in a rapid evolution of gas would be

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

26. Which of the following is a correct observation when water is added to lime?

- (a) No change and a hissing sound
- (b) Vigorous bubbling and a hissing sound
- (c) Slow bubbling with no sound
- (d) Vigorous bubbling with evolution of heat and a hissing sound

27. Four students showed the following traces of the path of a ray of light passing through a rectangular glass slab.



The trace most likely to be correct is that of student

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

28. The following apparatus is available in a laboratory.

Cell : adjustable from 0 to 1.5 volt

Resistor : $4\ \Omega$ and $12\ \Omega$

Ammeters : A_1 of Range 0 to 3 A : Least Count 0.1 A

A_2 of Range 0 to 1 A : Least Count 0.05 A

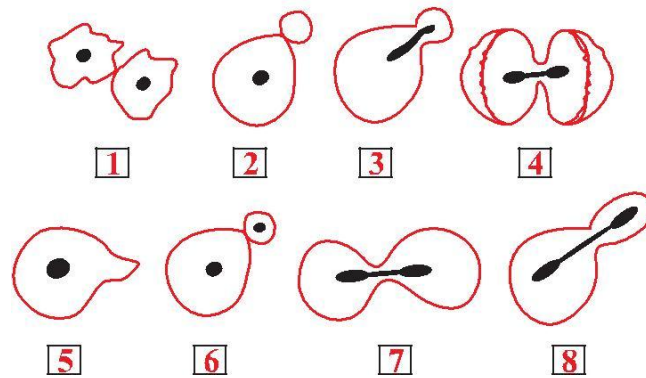
Voltmeters : V_1 of Range 0 to 10 V : Least Count 0.5 V

V_2 of Range 0 to 5 V : Least Count 0.1 V

The best combination of voltmeter and ammeter for finding the equivalent resistance of the resistors in parallel would be

- (a) ammeter A_1 and voltmeter V_1 .
- (b) ammeter A_1 and voltmeter V_2 .
- (c) ammeter A_2 and voltmeter V_1 .
- (d) ammeter A_2 and voltmeter V_2 .

29. From the following diagrams, select the correct ones showing stages of binary fission in amoeba and budding in yeast in their proper sequence



- (a) 5, 1, 4 and 2, 3, 6.
 (b) 3, 4, 7 and 2, 8, 6.
 (c) 7, 4, 1 and 3, 8, 6.
 (d) 8, 7, 4 and 3, 2, 6.

30. Student weighed 108 raisins and designated the weight as A. She then soaked them in 50 mL distilled water in a beaker. After 2 hours, she removed the raisins wiped them dry from outside and weighed again and called that weight as B. For determining the percentage of water absorbed by raisins, she should calculate as follows :

- (a) $\frac{B-A}{A} \times 100$
 (b) $\frac{B-A}{B} \times 100$
 (c) $\frac{B-A}{A} \times \frac{1}{100}$
 (d) $(B-A) \times 100$