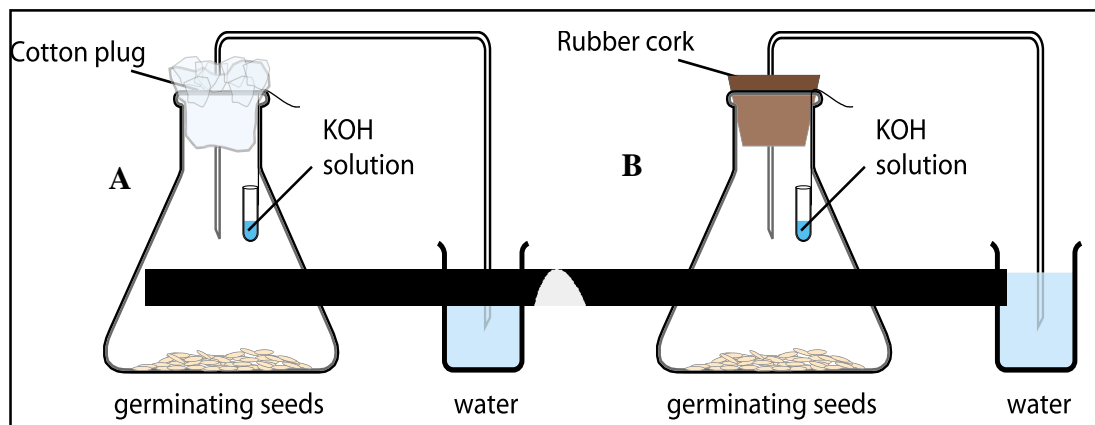


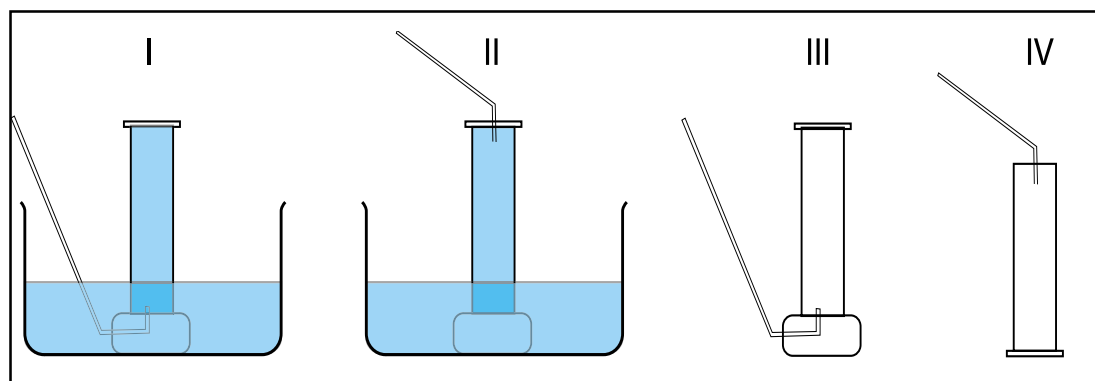
28. Using the same number of given germinating gram seeds, two students A and B set up the experiment separately. Student A used a cotton plug to hold the bent tube in the mouth of the flask. Student B used a rubber cork.



After 4 hours they noticed that

- water level increased in the bent tube only of A.
- water level increased in the bent tube only of B.
- the cotton plug was wet.
- the water in the beaker of B turned milky.

29. The proper experimental arrangement to collect sulphur dioxide is as shown in



- I.
- II.
- III.
- IV.

30. To show that zinc is more reactive than copper, the correct procedure is to

- prepare copper sulphate solution and dip zinc strip in it.
- prepare zinc sulphate solution and dip copper in it.
- heat zinc and copper strips.
- add dilute nitric acid on both the strips.

Question-wise Analysis and Scoring Key for Sample Paper III

Q.No	Correct choice	Explanation/ Remarks
1.	(c)	For testing pH, aqueous solutions are used.
2.	(d)	Since red litmus shows no colour change with acids, it is first to be changed to blue litmus
3.	(d)	Zinc reacts with sodium hydroxide on heating to produce hydrogen gas rapidly.
4.	(c)	The sharp inverted vertical image of the distant tree is formed by a concave mirror.
5.	(a)	All the three angles, shown, here have to be measured with respect to the normal drawn at the points of incidence/ emergence.
6.	(a)	The ammeter has to be put in series and the voltmeter in parallel, with the resistor, with both instruments connected with their polarities also correct.
7.	(a)	The screen is just a device to observe the (real) image formed by a convex lens. The image of a distant object continues to get formed at the focus of the convex lens even when no screen is being used to show its formation.
8.	(c)	We can connect only the voltmeter (a high resistance device) in parallel with the resistor R. An ammeter, (a very low resistance device) would reduce the overall resistance of the circuit to almost zero. This would damage not only the ammeter but also the battery eliminator.
9.	(b)	The voltmeter has to be put in parallel with the resistances being measured and not across the ammeter.
10.	(a)	We must keep the circuit closed for a relatively shorter time and open for a relatively longer time. This would ensure minimal changes in the values of resistances due to the heating effects of currents.
11.	(c)	Safranin is pinkish red in colour.
12.	(d)	The sequence illustrates binary fission in Amoeba.
13.	(d)	KOH absorbs CO ₂ released by the seeds.
14.	(b)	Sunlight is not available to the covered portion. Hence no starch. Remains white after starch test. The rest is stained.
15.	(b)	A is hypotonic to the sap of raisin. B is hypertonic. Hence endosmosis in A and exosmosis in B.
16.	(d)	Transverse fission in Paramecium.
17.	(b)	SO ₂ reduces acidified K ₂ Cr ₂ O ₇ and the most suitable acid used for acidification in dil H ₂ SO ₄
18.	(d)	SO ₂ is irritant/harmful
19.	(b)	Iron being more reactive displaces copper from copper sulphate.
20.	(b)	The gases should not be smelt directly or kept too close to nose.
21.	(a)	Ethanoic acid has the lowest pH and NaHCO ₃ has the highest pH whereas pH of water is in between the two

22.	(c)	The equivalent resistance of 3 and 6 , in parallel is 2 . The current in the circuit can, therefore, go only up to 3 A. We therefore choose instruments of correct range and a better least count.
23.	(a)	We must not only have the angle of emergence (nearly) equal to the angle of incidence but also have an idea of the magnitude of the angle of refraction (for a glass slab) for the three most often used values (30° , 45° , 60°) of the angle of incidence.
24.	(d)	Only circuit B, with a dot within the symbol of the plug key, is a closed circuit in which current is flowing and will show non-zero voltage. The voltmeter reading, for the set ups shown, would be(nearly) equal to the voltage of the battery.
25.	(c)	Yeast and Hydra reproduce by budding.
26.	(a)	Proper procedure to prepare a good stained temporary mount of leaf peel.
27.	(d)	Calculation using the formula.
28.	(b)	The conical flask should be closed with rubber cork to make it air tight. Otherwise partial vacuum will not be created.
29	(d)	SO ₂ is soluble in water and heavier than air.
30.	(a)	Zinc displaces copper from its salt solution.