Test Booklet Number **Code No. 31P/1/2**

Test Booklet Code **This Booklet contains 24 pages.**

Series: RLH/1

PRACTICAL SKILLS IN SCINCE

A2

Time allowed: 1 ½ hours Maximum Marks: 20

General Instructions

1. Attempt **all** question

2. There are **30** multiple choice questions in total. Only one of the options in every question is correct.

3. The question pap0ter consists of two sections – Section A and Section B. Each of the **20** questions in Section A carries half mark and each of the **10** questions in Section B carries one mark

4. 15 minutes additional time will be given to you to read the questions.

5. **The Answer Sheet is inside this Test Booklet.** When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars on **SIDE – 2** carefully with **blue/black** ball point pen only. **In no case, pencil is to be used.** Read "General Instruction for Candidates" on **SIDE – 1** carefully.

6. Use **Blue/black Ball Point Pen only** for writing particulars on ht is page/writing particular and marking responses on SIDE – 2 of the Answer Sheet.

7. On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator in the Room/Hall. The candidates are allowed to take away this Test Booklet with them.

8. The CODE for this Test Booklet is **A2**. Make sure that the CODE printed on **SIDE – 2** of the Answer Sheet is the same as for replacement of both the Test Booklet and the Answer Sheet.

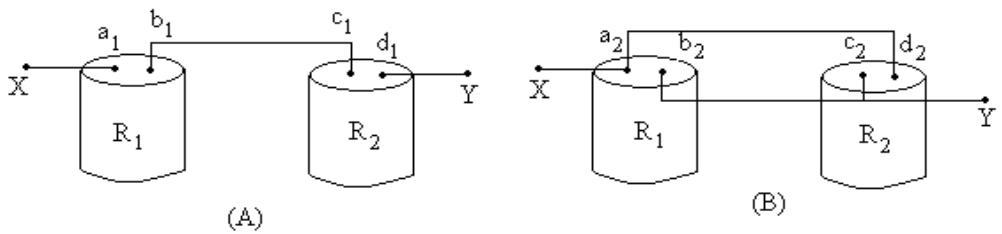
9. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your Roll Number anywhere else except in the specified in the specified space in the Test Booklet/Answer Sheet.

10. Use of white fluid for correction is ***not*** permissible on the Answer Sheet.

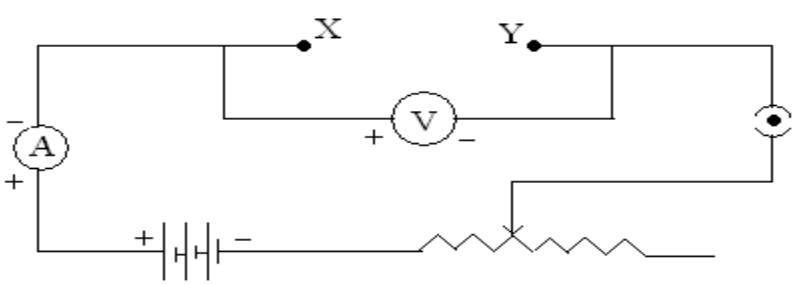
Name of the Candidate (in Capitals): _____
Roll Number: in figure _____
: in words _____

SECTION – A

Q1. Students A and B connect the two resistors R_1 and R_2 given to them in the manners shown below:



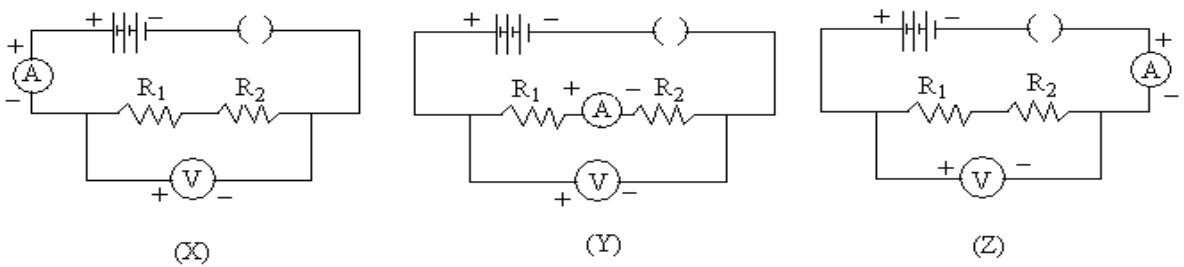
and then insert them at X and Y into the measuring circuit shown below:



We can then say that

1) Both the students will determine ht equivalent resistance of the series combination of R_1 and R_2
2) Both the students will determine the equivalent resistance of the parallel combination of R_1 and R_2
3) Student A will determine the equivalent resistance of the series combination while student B will determine the equivalent resistance of the parallel combination of R_1 and R_2
4) Student A will determine the equivalent resistance of the parallel combination while student B will determine the equivalent resistance of the series combination of R_1 and R_2

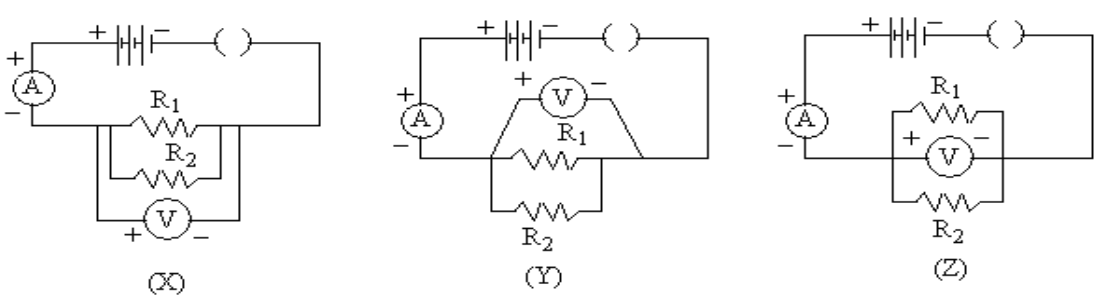
Q2. In the experiment on finding the equivalent resistance of two resistors connected in series, three students connected the ammeter in their circuits in the three ways X, Y and Z shown here.



Assuming their ammeter be ideal, the ammeter have been correctly connected in

1. cases X and Y only
2. cases Y and Z only
3. cases Z and X only
4. All the three cases

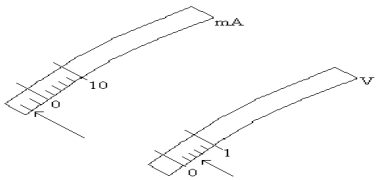
Q3. In the experiment on finding the equivalent resistance of two resistors, connected in parallel, three students connected the voltmeter in their circuits, in the three ways, X, Y and Z shown here.



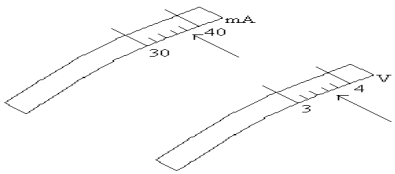
The voltmeter has been correctly connected in

1. cases X and Y only
2. cases Y and Z only
3. cases Z only X only
4. all the three cases

Q4. The rest positions of the needles in a millimeter and voltmeter not in use are as shown in Fig. A. When a student uses these in his experiment, the readings of the voltage in the experiment are



(A)



(B)

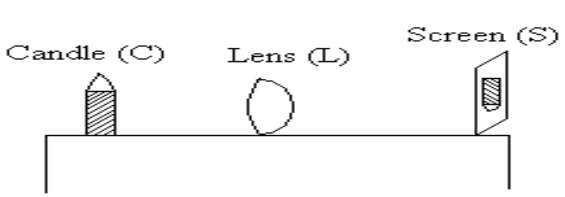
1. 42 mA and 3.2 V
2. 42 mA and 4.0 V
3. 34 mA and 3.2 V
4. 34 mA and 4.0 V

Q5. A student performs the experiment on tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. He measures the angle of incidence I, angle of refraction r and angle of emergence e for all his observations. He would find that in all cases

1. $\angle$i is more than $\angle$r but (nearly) equal to $\angle$e
2. $\angle$i is less than $\angle$r but (nearly) equal to $\angle$e
3. $\angle$i is more than $\angle$e but (nearly) equal to $\angle$r
4. $\angle$i is less than $\angle$e but (nearly) equal to $\angle$r
5.

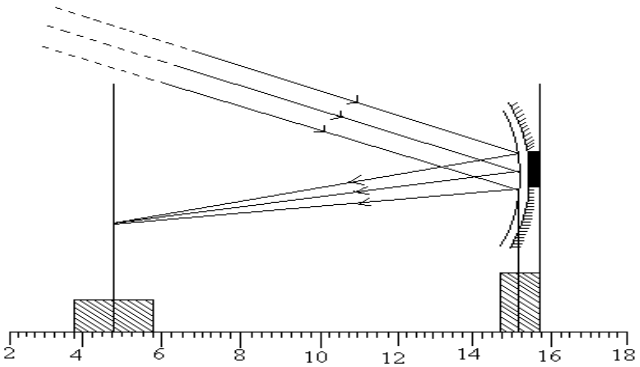
Q6. A student performs an experiment on finding the focal length of a convex lens by keeping a lighted candle on one end of laboratory table, a screen on its other end and the lens between them as shown in the figure. The positions of the three are adjusted to get a sharp image of the candle flame on the screen

1. the screen in the direction of the lens or the lens in the direction of the screen
2. the screen in the direction of the lens or the lens away from the screen
3. the screen away from the lens or the lens in the direction of the screen
4. neither the screen nor the lens



Q7. The focal length of the concave mirror in the experimental set up, shown below, equals

1. 10.3 cm
2. 11.0 cm
3. 11.7 cm
4. 12.2 cm



Q8. Ethanoic Acid was added to Sodium Bicarbonate solution and the gas evolved was tested with a burning splinter. The following four observations were reported:

(a) The gas burns with the pop sound and the flame gets extinguished.
(b) The gas does not burn but the splinter burns with a pop sound.
(c) The flame extinguishes and the gas does not burn.
(d) The gas burns with a blue flame and the splinter burns brightly.

The correct observation is reported in

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

Q9. A colourless liquid sample was tested with pH paper strip. The colour of the strip changed to reddish pink. The sample could be

(1) Tap water
(2) Sodium hydroxide solution
(3) Distilled water
(4) Ethanoic Acid solution

Q10. 2mL of acetic acid was added in drops to 5mL of water and it was noticed that

(1) the acid formed a separate layer on the top of water
(2) water formed a separate layer on the top of the acid
(3) a clear and homogeneous solution was formed
(4) a pink and clear solution was formed

Q11. The description which most approximately suits sulphur dioxide gas is that it is colourless and
(1) insoluble in water
(2) has pungent and suffocation odour
(3) lighter than air
(4) has smell of rotten eggs

Q12. When an aluminum strip is kept immersed in freshly prepared ferrous sulphate solution taken in a test tube, the change which is observed is
(1) the green solution slowly turns brown
(2) the lower end of the test tube becomes slightly warm
(3) a colourless gas with smell of burning sulphur is observed
(4) light green solution changes to blue

Q13. When dilute hydrochloric acid is added to granulated zinc placed in a test tube, the observation made is
(1) the surface of the metal turns shining
(2) the reaction mixture turns milky
(3) odour of chlorine is observed
(4) a colourless and odourless gas evolves with bubbles

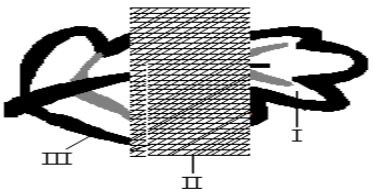
Q14. Solid sodium bicarbonate was placed on a strip of pH paper. The colour of the strip
(1) turned blue
(2) did not change
(3) turned green and suddenly yellow
(4) turned light ping

Q15. Before testing the leaf for starch at the end of experiment, “light is necessary for photosynthesis”, the experimental leaf should be boiled in
(1) water
(2) alcohol
(3) KOH solution
(4) Hydrochloric acid

Q16. A student focused the leaf epidermal peel under the low power of microscope but could not see all the parts. He should
(1) Use the coarse adjustment knob again to focus he slide.
(2) Use the fine adjustment knob to increase magnification.
(3) Focus under high power using coarse adjustment knob.
(4) Focus under high power using fine adjustment knob.

Q17. Given below is a sketch of a leaf partially covered with black paper and which is to be used in the experiment to show that light is compulsory for the process of photosynthesis. At ht end of the experiment, which one of the parts labeled I, II and III will become blue black when dipped in iodine solution?

(1) I only
(2) II only
(3) I and III
(4) II and III



Q18. Each of the three beakers A, B and C contained 50mL of distilled water. A student placed five raisins in each beaker. The raisins for each beaker weighed the same. The beakers were kept at room temperature. The raisins were removed from beaker C after one hour. On calculating the percentage of water absorbed by raisins, it was found that

(1) maximum absorption of water by raisins was in beaker C
(2) maximum absorption of water by raisins was in beaker B
(3) minimum absorption of water was by raisins in beaker C
(4) absorption of water was equal in raisins of all the tree beakers

Q19. The given slides A and B were identified by four students I, II, III and IV as stated below:


A

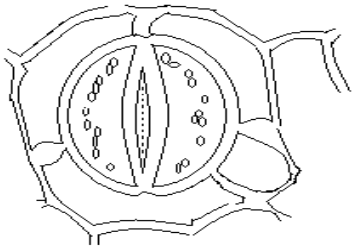

B

	Slide A	**Slide B**
I.	Binary fission in <u>Amoeba</u>	Daughter cells of <u>Amoeba</u>
II.	Budding in yeast	Buds of yeast
III.	Binary fission in <u>Amoeba</u>	buds of yeast
IV.	Budding in yeast	Daughter cells in <u>Amoeba</u>

Of the above mentioned identifications of slides A & B, which one is correct?

(1) I
(2) II
(3) III
(4) IV

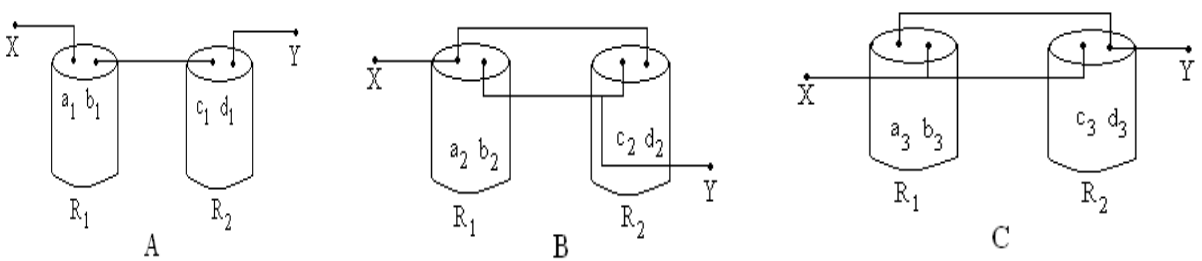
Q20. In the sketch of the stomatal apparatus given below:

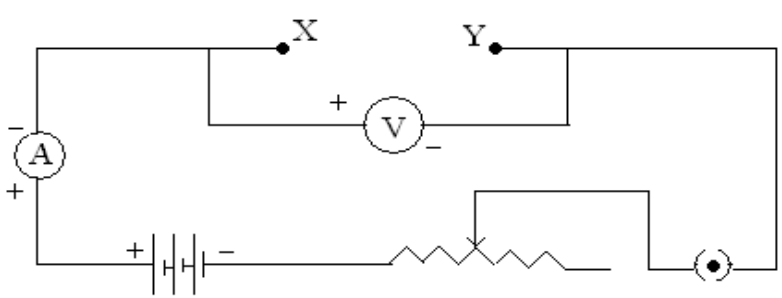


Which one of the following is missing?
(1) Cell membranes of the cells
(2) Cell walls of the cells
(3) Nuclei in the guard cells
(4) Chloroplasts in the guard cells

SECTION – B

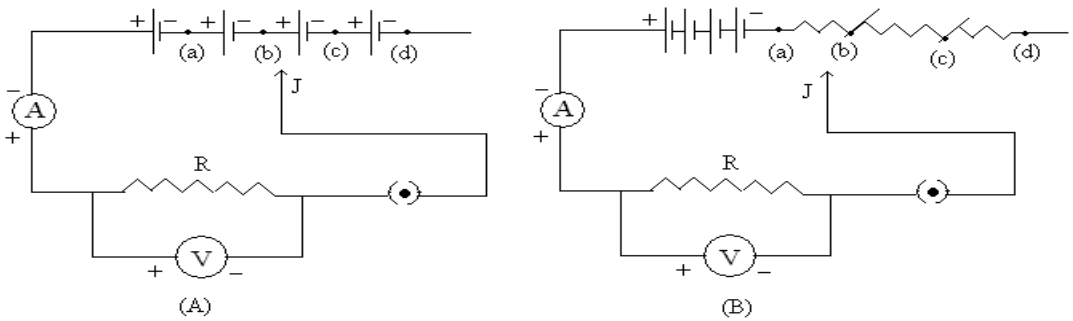
Q21. A student carries out the experiment for studying the dependence of current (I) flowing through a resistor system of R_1 and R_2 on the potential diffrence3 (V) applied to it by connection the resistor system to points X and Y of the measuring circuit as shown:





The average value of the ratio V/I, of his observations, would then be, equal
(1) only in cases A and B
(2) only in cases B and C
(3) only in cases C and A
(4) all the three cases

Q22. To study the dependence of current (I) on the potential difference (V) across a resistor R, two students used the two set ups shown in Figure A and B respectively. They kept the contact point J in four different positions, marked (a), (b), (c) and (d) in the two figures.



For the two students, the ammeter and voltmeters readings will be maximum when the contact J is in the position

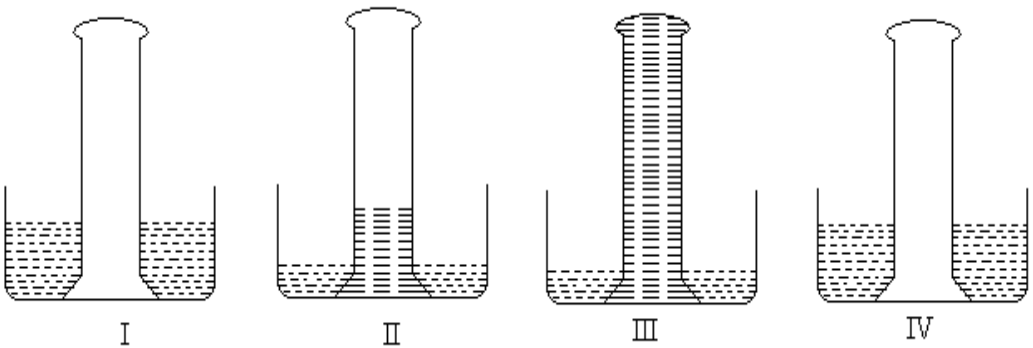
(1) (d) in both the set ups
(2) (a) in both the set ups
(3) (d) in set up A and (a) in set up B
(4) (a) in set up A and (d) in set up B

Q23. A student suggested the following 'guidelines' to his friend for doing the experiment on tracing the path of a ray of light passing through a rectangular glass slab for three different angles of incidence:

A. Draw the 'outline' of the glass slab at three positions on the drawing sheet.
B. Draw 'normals' on the top side of these 'outline' near their left end.
C. Draw the incident rays on the three 'outline' in directions making angles of 30^o, 45^o, 60^o with the normals drawn.
D. Fix two pins vertically on each of these incident rays at two points nearly 1cm apart.
E. Look for the images of the 'heads' of these pins while fixing two pins from the other side, to get the refracted rays.

Q24. Four gas jars filled with sulphur dioxide gas were inverted into troughs of water by four students and the following observations and inference were reported:

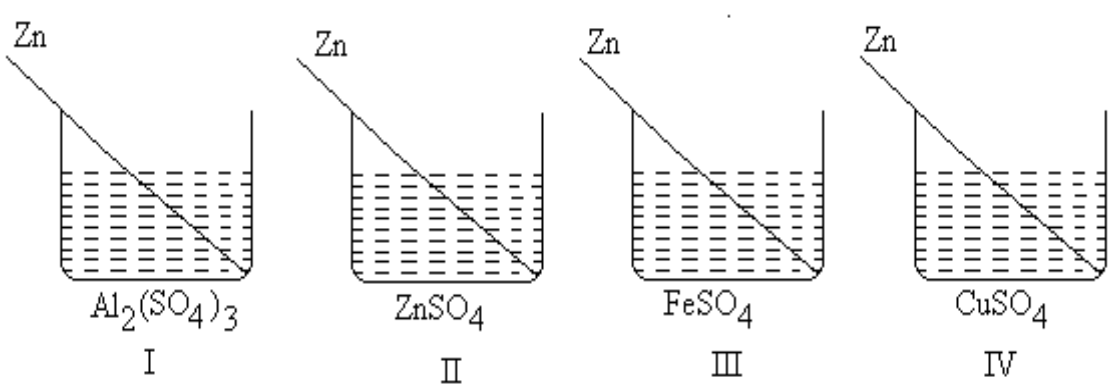
(a) Water did not enter the gas jar and sulphur dioxide were reported:
(b) A small amount of water entered the gas jar slowly and sulphur dioxide is sparingly soluble in water.
(c) Water rushed into the gas jar and sulphur dioxide is highly soluble in water.
(d) Water did not enter the gas jar and sulphur dioxide is soluble in water.



The correct set of observations and inference drawn is reported in

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

Q25. Four students A, B, C and D noted the initial colour of the solutions in beaker I, II, III and IV. After inserting zinc rods in each solution and leaving it undisturbed for two hours, noted the colour of each solution again

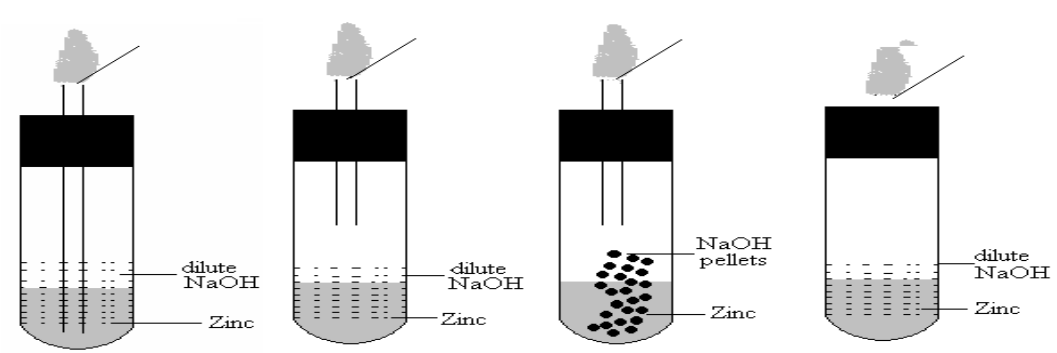


The recorded their observations in the form of table given below:

Student	Colour of the solution	I	II	III	IV
A	Initial	Colourless	Colourless	Light green	Blue
	Final	Colourless	Colourless	Colourless	Colourless
B	Initial	Colourless	Light yellow	Light green	Blue
	Final	Colourless	Colourless	Light green	Colourless
C	Initial	Colourless	Colourless	Light green	Blue
	Final	Light blue	Colourless	Colourless	Light blue
D	Initial	Light green	Colourless	Light green	Blue
	Final	Colourless	Colourless	Dark green	Colourless

Which student noted the colour change in all the four beakers correctly?
(1) A
(2) B
(3) C
(4) D

Q26. Which one of the following set ups is the most appropriate for the evolution of hydrogen gas and its identification?



(a) **(b)** **(c)** **(d)**

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

Q27. The temporary mount of the leaf epidermal peel which looked pinkish red under the microscope was

(1) stained in acetocarmine and mounted in glycerine
(2) stained in iodine and mounted in water
(3) stained in safranin and mounted in glycerine
(4) stained in methylene blue and mounted in water

Q28. Which one of the following is the correct set of three precautions for setting up the experiment to demonstrate that carbon-di-oxide is evolved during respiration?

(1) Air tight set up; delivery tube dips in water in beaker; flask has seeds which have just germinated.
(2) Thread holding KOH test tube; air tight flask; delivery tube above surface of water in the beaker.
(3) Germinated seeds under water in the flask; experimental set up not air tight; delivery tube above water level.
(4) Delivery tube touching bottom of water; KOH test tube held by a thick wire; seeds covered by water.

Q29. The following data was obtained on performing an experiment for determining the percentage of water absorbed by raisins:

Mass of water in the beaker	=50g
Mass of dry raisins	=20g
Mass of raisins after soaking in water	= 30g
Mass of water left in the beaker after the experiment	= 40g

The percentage of water absorbed by raisins will be

(1) 10%
(2) 25%
(3) 45%
(4) 50%

Q30. Why is some KOH placed in small test tube in the flask with germinating seeds in the experiment to demonstrated occurrence of respiration in germinating seeds?

(1) To provide oxygen required by the seeds for respiration.
(2) To absorb carbon dioxide and create partial vacuum in the flask.
(3) To absorb water from the seeds to make them dry.
(4) To make the air present in the flask alkaline.