

Booklet Code



**Series HRL/1**

Test Booklet Number

**845213**

*This Booklet contains 24 pages*

## **PRACTICAL SKILLS IN SCIENCE**

Time allowed: 1 ½ hours

Maximum marks: 20

### **General Instructions:**

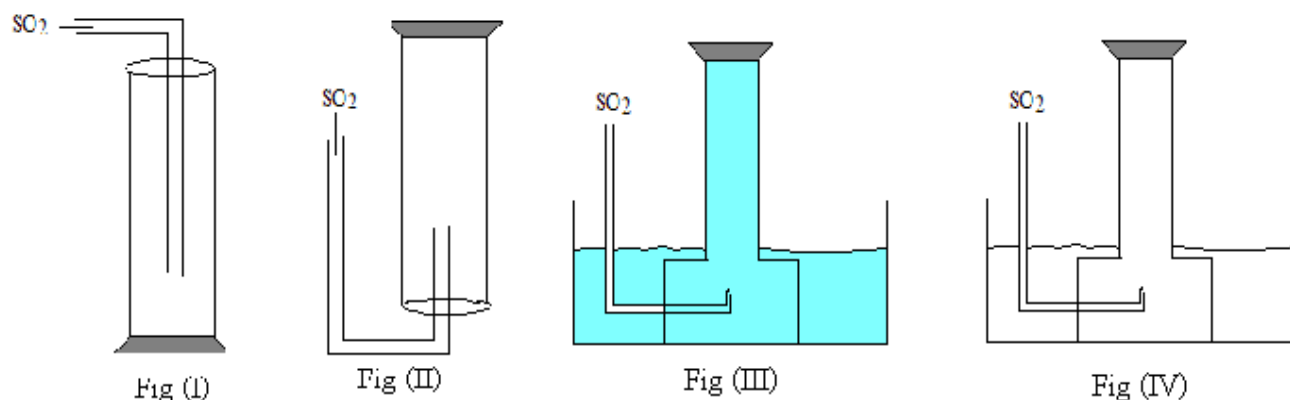
1. Attempt all questions.
2. There are 30 multiple choice questions in total. Only one of the options in every question is correct.
3. The question paper consists of two sections – Section A and Section B. Each of the 20 question in Section A and carries half mark and each of the 10 questions in Section 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 particular on **SIDE – 2** carefully with **blue/black** ball point pen only. **In no case, pencil is to be used.** Read “General Instructions for Candidates” and “Example, How to write and darken circle on **SIDE – 2**” given on **SIDE -1** carefully.
6. Use Blue/Black Ball Point Pen only for writing particulars on this page and writing particulars 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 candidate is allowed to take away this Test Booklet with him/her.
8. The CODE for this **Test Booklet** is C. make that the **CODE** printed on **SIDE – 2** of the Answer Sheet is the same as that on this booklet. Incase of discrepancy, the candidates should immediately report the matter to the Invigilator 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 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 figures -----  
in words -----

## SECTION – A

Q1. The 'set up', used in the laboratory, to collect Sulphur dioxide, is that shown in figure:

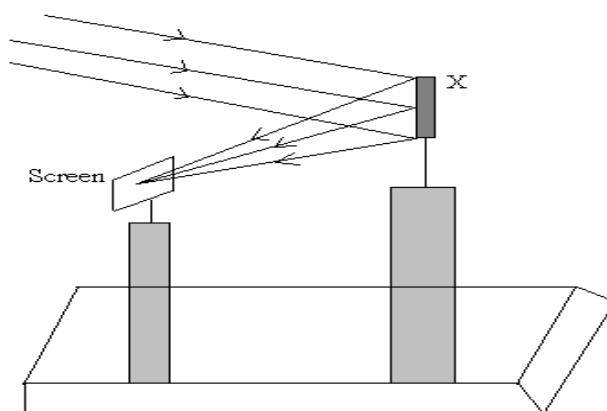


- (1) I
- (2) II
- (3) III
- (4) IV

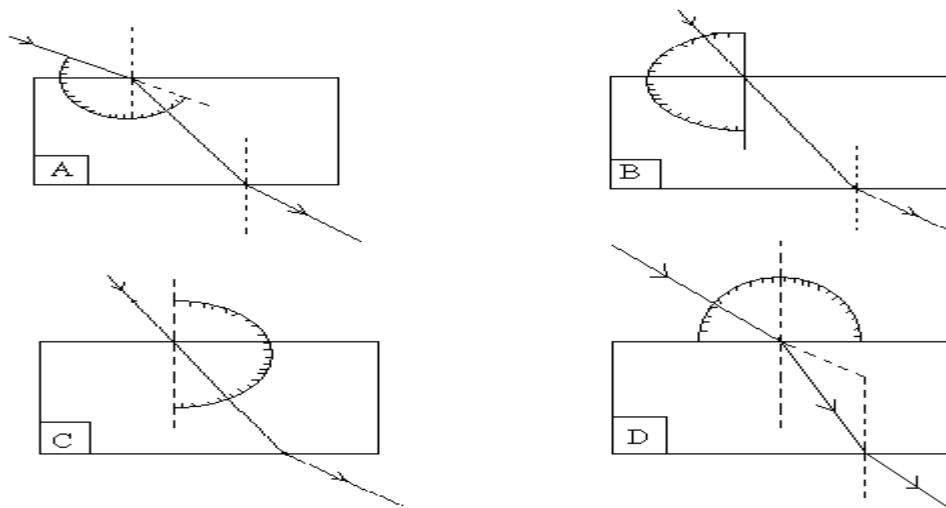
Q2. A student determines the focal length of a device X, by focusing the image of a far off object on the screen positioned as shown in the figure below.

The device X is a:

- (1) Convex lens
- (2) Concave lens
- (3) Convex mirror
- (4) Concave mirror



Q3. A student traces the path of a ray of light passing through a rectangular glass slab.



For measuring the angle of incidence, he must position the protractor in the manner shown in figure:

- (1) A
- (2) B
- (3) C
- (4) D

Q4. In an experiment on finding the equivalent resistance of resistors, connected in series, a student connects the terminals of the voltmeter, to:

- (1) One terminal of each of the two resistors and these terminals are not interconnected.
- (2) One terminal of each of the two resistors and these terminals are also interconnected.
- (3) Both the terminals of each of the two resistors.
- (4) Both the terminals of one resistor and one terminal of the resistor.

Q5. For plotting temperature – time graph for a hot body, as it cools to room temperature, a student is to choose one each from each of the following Parts.

A: Calorimeter (i) blackened from outside

(ii) Polished from outside

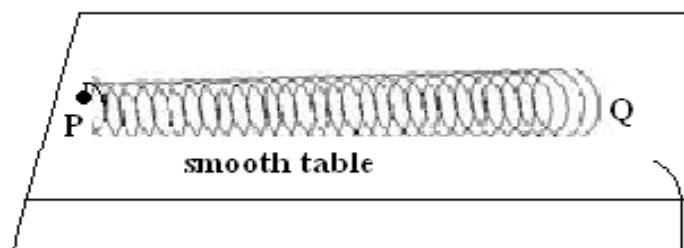
B: Base for keeping the calorimeter

- (i) insulated
- (ii) metallic

In order to get the correct graph he should prefer to choose:

- (1) A (i), B (ii)
- (2) A (ii), B (ii)
- (3) A (i), B (i)
- (4) A (ii), B (i)

Q6. A student sets up a slinky on a smooth table top in the manner shown here.



How can he produce transverse waves in the slinky by moving its free end Q?

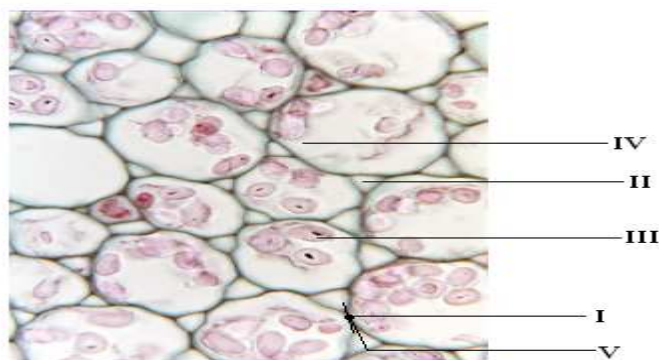
- (1) at an angle of  $45^\circ$  with the table top
- (2) backward and forward along the length of the slinky
- (3) up and down
- (4) left and right

Q7. A student carefully observes the parts labeled A and B in the given diagram and classifies the plant correctly as:

- (1) a bryophyte
- (2) a pteridophyte
- (3) a gymnosperm
- (4) an angiosperm



Q8. Four students (A – D), independently parenchyma under the microscope and labeled the parts, marked I, II, III, IV, V as per the record given below:



Student	I	II	III	IV	V
A	Cell membrane	Nucleus	Cell wall	Vacuole	Cytoplasm
B	Cytoplasm	Cell membrane	Vacuole	Cell wall	Nucleus
C	Vacuole	Cell wall	Nucleus	Cell membrane	Cytoplasm
D	Cell wall	Inter cellular space	Nucleus	cytoplasm	Vacuole

The labeling has been done correctly by student:

- (1) A
- (2) B
- (3) C
- (4) D

Q9. The correct procedure for preparing a colloidal solution of egg albumin in water is:

- (1) To break to egg shell, take only the white portion and to add it to water with constant stirring.
- (2) To break to egg shell, take only the yellow portion and to add it to boiling water with constant stirring.
- (3) To boll the egg first, to break to egg shell, to add the white portion to ice cold water and tow mix.
- (4) To boll the egg first, to break to egg shell, to add the yellow portion to water and tow mix.

Q10. Four students (A), (B), (C) and (D) independently observed the evaporation of water under different conditions, and recorded the temperature of water at regular intervals as shown below.

Student	Placing of experimental set up in/under	Temperature recoding for 15 minutes
(A)	Sun	Increased gradually
(B)	Open air	Decreased gradually
(C)	A fan	Initially increased, then became constant
(D)	A corner of the room	Initially increased, then gradually decreased

The correct recording of observations is that of the student:

- (1) A
- (2) B
- (3) C
- (4) D

Q11. A student takes a mixture of sand ammonium chloride in china dish and heats it under a funnel fitted with a plug over a plug over flame. He would observe that:

- (1) Solid sand gets deposited on the lower cooler parts of the funnel while solid ammonium chloride remains in the china dish.
- (2) Sand and ammonium chloride get deposited on hotter parts of the funnel.
- (3) Ammonium chloride gets deposited on the cooler parts of the funnel and sand remains in the china dish.
- (4) Sand collects on cooler parts of the funnel while ammonium chloride melts in the china dish.

Q12. In the experiment to show that CO<sub>2</sub> is given out during respiration, the student uses:

- (1) Lime water
- (2) Alcohol
- (3) KOH solution
- (4) Iodine solution

Q13. Raisins are soaked in water for determining the percentage of water absorbed by raisins. The formula, used by a student, for calculating the percentage of water absorbed, is:

(1)  $\frac{\text{Initialweight} - \text{Finalweight}}{\text{Initialweight}} \times 100$

(2)  $\frac{\text{Finalweight} - \text{Initialweight}}{\text{Initialweight}} \times 100$

(3)  $\frac{\text{Finalweight} - \text{Initialweight}}{\text{Finalweight}} \times$

(4)  $\frac{\text{Initialweight} - \text{Finalweight}}{\text{Finalweight}} \times 100$

Q14. The steps, necessary for setting up the experiment, “To demonstrate that light is necessary of photosynthesis” are not given here in proper sequence.

- I. Keep the potted plant in sunlight for 3 to 4 hours
- II. Keep the potted plant in darkness for about 48 hours.
- III. Cover a leaf of the plant with a strip of black paper.
- IV. Pluck the leaf and test it for starch.

The correct sequence of steps is:

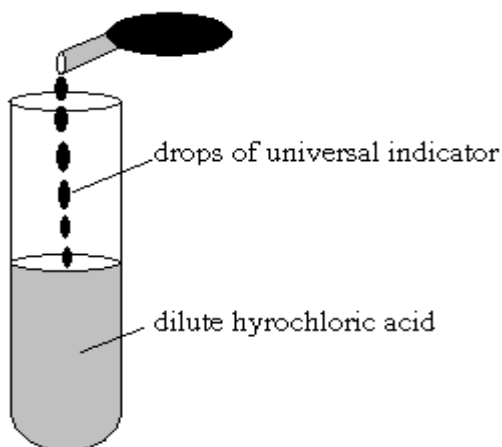
- (1) I, III, IV, II
- (2) I, IV, III, II
- (3) II, IV, III, I
- (4) II, III, I, IV

Q15. A specimen of a fish was given to students to identify externally visible chordate feature in it. The students would look for:

- (1) Operculum
- (2) Notochord
- (3) Dorsal tubular nerve cord
- (4) Post anal tail

Q16. A student adds a few drops of the universal indicator to a solution of dilute hydrochloric acid in the way shown her. He would observe that the colour of the solution changes from colorless to:

- (1) Red
- (2) Yellow
- (3) Violet
- (4) Green



Q17. A student takes some zinc granules in a test tube and adds dilute hydrochloric acid to it. He would observe that the colour of the zinc granules changes to:

- (1) White
- (2) Black
- (3) Brown
- (4) Yellow

Q18. A student takes some water in a beaker and heats it over a flame for determining its boiling point. He keeps on taking its temperature readings. How would he observe that the temperature of water:

- (1) Keeps on increasing regularly
- (2) Keeps on increasing irregularly
- (3) First increases slowly, then decreases rapidly and eventually becomes constant

(4) First increases gradually and then becomes constant

Q19. While performing an experiment of verifying the laws of reflection of sound, a student is to choose between

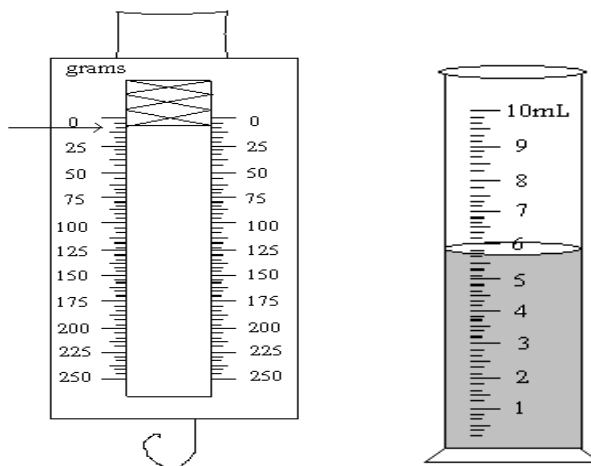
- (i) a narrow or a wide tube and
- (ii) a strong or a faint source of sound

The observed experimental difference, between the values of angle of incidence and angle of reflection, is likely to be minimum when he chooses a:

- (1) narrow tube and a faint source
- (2) wide tube and faint source
- (3) narrow tube and a strong source
- (4) wide tube and a strong source

Q20. The magnitude of zero error of the spring balance and least count of the measuring cylinder, shown here, are, respectively:

- (1) 2.5 g and 0.1 mL
- (2) 5.0 g and 0.1 mL
- (3) 2.5 g and 0.2 mL
- (4) 5.0 g and 0.2 mL



Q21. Four students observed the colour and odour of acetic acid and its reaction with sodium hydrogen carbonate. They tabulated their observations as given below.

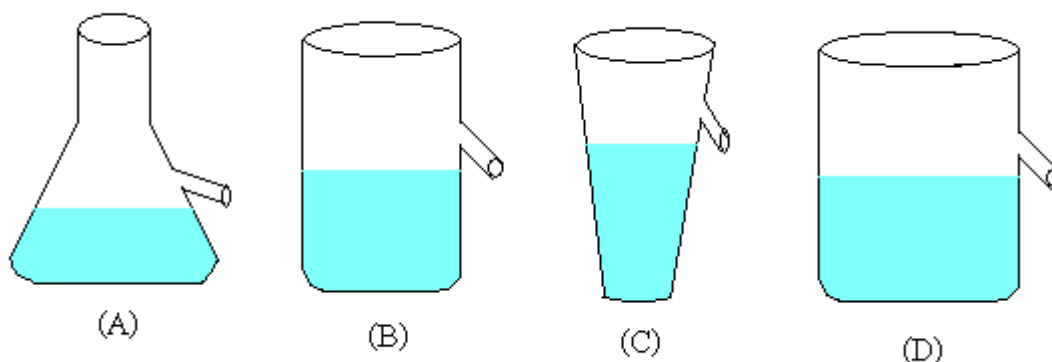
Student	Colour of acetic acid	Odour of acetic acid	Action with sodium hydrogen carbonate
A	Blue	Fruity	Gas evolves without bubble
B	Colourless	Smell of vinegar	Effervescence
C	Light green	Odourless	Gas evolves without bubbles
D	Light brown	Rotten egg	Effervescence



The correct set of observation is that of student:

- (1) A
- (2) B
- (3) C
- (4) D

Q22. for student A, B, C and D while performing an experiment on establishing the relation between the loss of weight of a small solid when fully immersed in tap water, and the weight of water displaced by it, used four different shapes of overflow cans containing water as shown.



The arrangement, that would give correct results, is that of student.

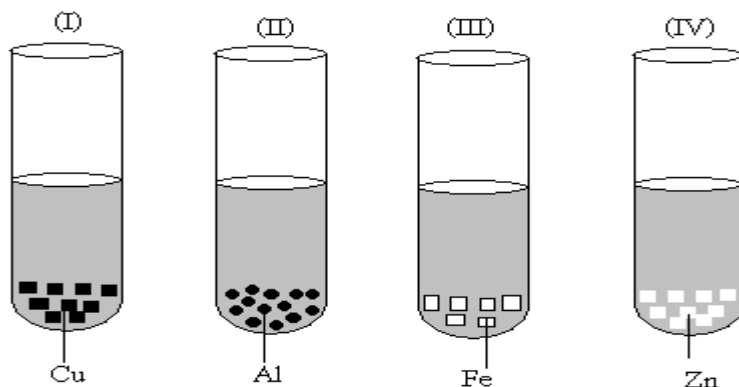
- (1) (A)
- (2) (B)
- (3) (C)
- (4) (D)

Q23. Four stages of binary fission in amoeba are shown below. The stage at which nuclear fission and cytokinesis are observed is, stage



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

Q24. a student takes Cu, Al, Fe and Zn strips, separately in four test tubes labeled as I, II, III and IV respectively. He adds 10 mL of freshly prepared ferrous sulphate solution to each test tube and observes the colour of the metal residue in each case.



He would observe a black residue in the test tubes:

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

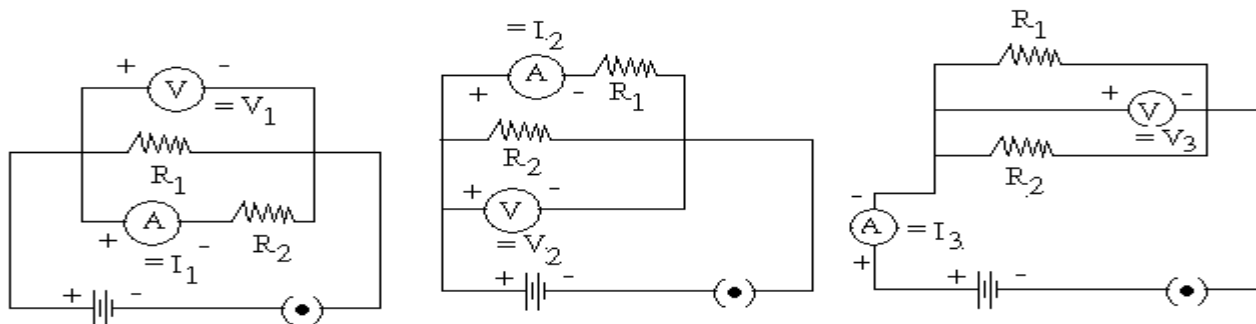
Q25. Four students, (A), (B), (C) and (D) observed the colour and solubility of iron, Sulphur and iron sulphide in carbon disulphide. The Yes mark (Yes) represents 'soluble', and No cross mark (No) represent 'insoluble', in carbon disulphide. Their observations are tabulated below.

Student	colour			Solubility in carbon disulphide		
	Fe	S	FeS	Fe	S	FeS
(A)	Yellow	Silvery	Greyish silver	(Yes)	(No)	(Yes)
(B)	Silvery	Orange	Reddish brown	(No)	(Yes)	(Yes)
(C)	Grey	Yellow	Greyish black	(No)	(Yes)	(No)
(D)	silvery	white	Silvery white	(Yes)	(No)	(No)

The student, who correctly reported the observation, is student:

- (1) (A)
- (2) (B)
- (3) (C)
- (4) (D)

Q26. For three circuits, shown here



The same two resistors  $R_1$  and  $R_2$  have been connected in parallel in all the circuits but the voltmeter and the ammeter have been connected in three different positions. The relation between the three voltmeter and ammeter readings would be:

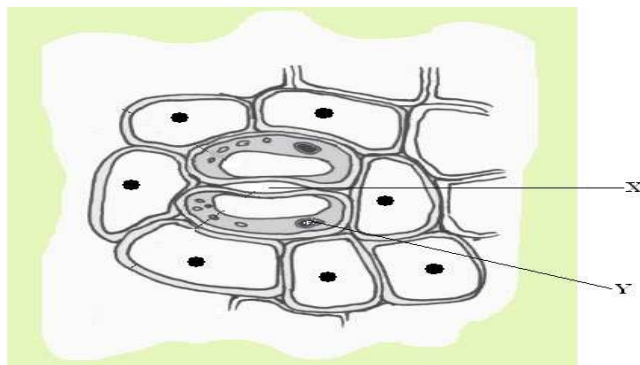
- (1)  $V_1 = V_2 = V_3$  and  $I_1 = I_2 = I_3$
- (2)  $V_1 \neq V_2 \neq V_3$  and  $I_1 = I_2 = I_3$
- (3)  $V_1 = V_2 = V_3$  and  $I_1 \neq I_2 \neq I_3$
- (4)  $V_1 \neq V_2 \neq V_3$  and  $I_1 \neq I_2 \neq I_3$

Q27. While observing the occurrence of plasmolysis on onion peel cells, four students (W – Z) respectively placed the peels in four different liquids (A – D): (A): Water, (B): sugar solution, (C): Alcohol and (D): Safranin

The correct choice of liquid is that of student:

- (1) W
- (2) X
- (3) Y
- (4) Z

Q28. Four students A, B, C and D, make the records given below, for the parts marked X and Y in this diagram.



Student	X	Y
A	Stoma	Guard cell
B	Guard cell	Stoma
C	Epidermal cell	Stoma
D	stoma	Epidermal cell

The correct record, out of these, is that of student:

- (1) A
- (2) B
- (3) C
- (4) D

Q29. The following 'precautions' were listed by a student in the experiment on study of 'Dependence of current on potential difference.'

- (A) Use copper wires as thin as possible for making connections.
- (B) All the connections should be kept right
- (C) The positive and negative terminals of the voltmeter and the ammeter should be correctly connected.
- (D) The 'zero error' in the ammeter and the voltmeter should be noted and taken into consideration while recording the measurements.
- (E) The 'key' in the circuit, once plugged in, should not be taken out till all the observations have been completed.

The 'precautions' that need to be corrected and revised are:

- (1) (A), (C) and (E)
- (2) (C) and (E)
- (3) (B) and (E)
- (4) (A) and (E)

Q30. Which one of the following is the correct step, in the procedure for making a temporary slide of human cheek cells?

- (1) Place the cheek cell scrapings in a watch glass containing water.
- (2) Place cheek cell scrapings in the centre of a clean slide.
- (3) Dip the toothpick, containing cheek cell scrapings, in the stain and then transfer to a clean slide.
- (4) Obtain cheek cells, directly on the slide, using its edge to scrape the inside of the cheek.