B.C.M.SCHOOL BASANT AVENUE DUGRI LDH PB

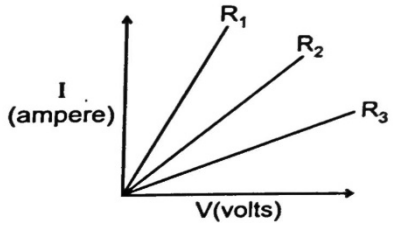
CLASS-X SUBJECT-SCIENCE

DATED: SEP.4,2025 **[ASSIGNMENT]**

SECTION-A

Select and write one most appropriate option out of the four options given for each of the questions Q. No.1-5. (1mark each)

Q1. A student carries out an experiment and plots the V-I graph of three samples of nichrome wire with resistances R_1 ,R_2 and R_3

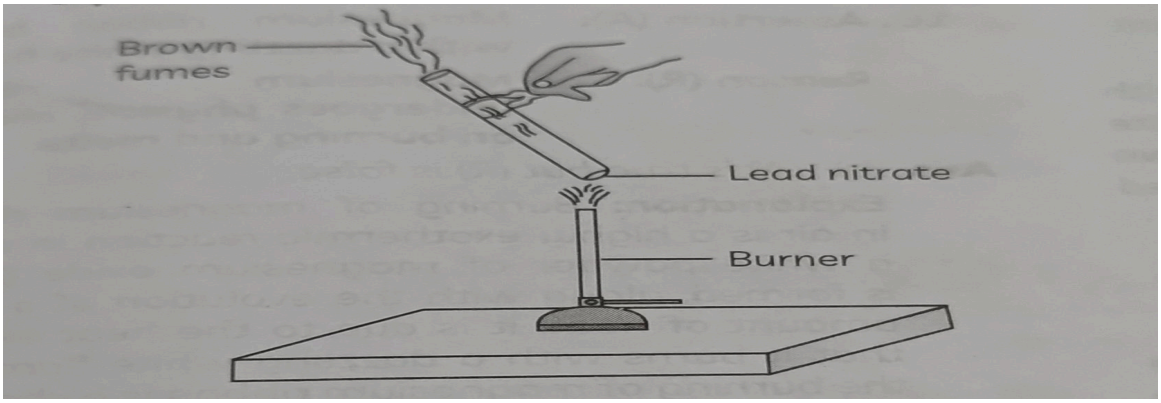


respectively. Which of the following is true?

(a) $R_1 = R_2 = R_3$ (b) $R_1 > R_2 > R_3$

(c) $R_3 > R_2 > R_1$ (d) $R_2 > R_3 > R_1$

Q2.The emission of brown fumes in the given experimental set-up is due to:



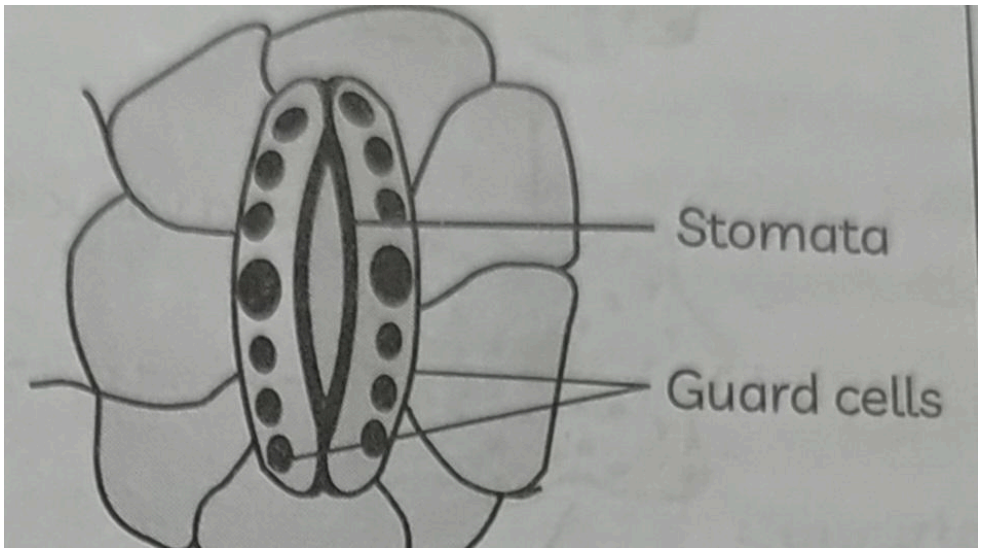
(a) thermal decomposition of lead nitrate which produces brown fumes of nitrogen dioxide.

(b) thermal decomposition of lead nitrate which produces brown fumes of lead oxide.

(c) oxidation of lead nitrate forming lead oxide and nitrogen dioxide.

(d) oxidation of lead nitrate forming lead oxide and oxygen.

Q3.Which one of the following conditions is true for the state of stomata of a green leaf shown in the given diagram?



(a) Large amount of water flows into the guard cells.

(b) Gaseous exchange is occurring in large amount.

(c) Large amount of water flows out from the guard cells.

(d) Large amount of sugar collects in the guard cells.

Q. No.4 &5 are Assertion - Reasoning based questions. These consist of two statements - Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true and R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is False but R is true.

Q4.Assertion(A): A receptor is a specialized group of cells in a sense organ that perceive a particular type of stimulus.

Reason (R) : Different sense organs have different receptors for detecting stimuli.

Q5.Assertion (A) : HCl gas does not change the colour of dry blue litmus paper.

Reason (R) : HCl gas dissolves in the water present in wet litmus paper to form H+ ions.

SECTION-B

Q.No.6 From amongst the metal, sodium, calcium, aluminium, copper and magnesium, name the metal:

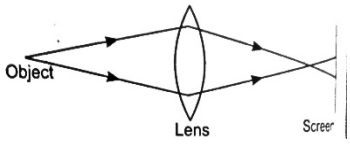
(A) which reacts with water only on boiling.

(B) which does not react even with steam.

SECTION-C

Q. No.7 is Short answer questions. (3 marks)

Q7. (a) A lens forms a blurred image of an object on the screen as



shown below:

What changes can you make to the following to form a sharp and in-focus image on the screen? (i) Object distance (ii) Focal length of the lens.

(b) Suita's ophthalmologist suggests her to use a lens of power -2 D to correct her vision. (i) What type of lens should she use? (ii) What should be the focal length of the lens? (iii) An object is kept at 10 cm in front of the lens of power -2 D. Find the distance where the image is produced.

SECTION-D

Q. No. 8 & 9 are Long answer questions. (5 marks)

Q8. (a)State Ohm's law. Write the necessary conditions for its validity. How is this law verified experimentally? What will be the nature of graph between potential difference and current for a conductor?

(b) The values of the current (I) flowing in a given resistor for the corresponding values of potential difference (V) across the resistor are given below:

I (Amperes)	0.5	1.0	2.0	3.0	4.0
V(volts)	1.6	3.4	6.7	10.2	13.2

Plot a graph between V and I and calculate the resistance of that resistor.

Q9. 7 (A) The process by which the body gets rid of all metabolic wastes is called process by which the body gets excretion. In humans, excretion occurs via several internal organs and body components in a sequence of procedures. Name the organs that form the excretory system in human beings.

(B) Describe in brief how urine is produced in human body.

SECTION-D

Q.No.10 is Case-based/Data-based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts. (4 marks)

Priya decided to bake a cake. She mixed all the ingredients, including baking soda ($NaHCO_3$). When she heated the batter, the cake became fluffy and light.

1. What is the role of baking soda in making the cake fluffy?

2. Write the chemical equation for the decomposition of baking soda upon heating.

3. What would happen if Priya used baking soda instead of baking powder?

4. How does the release of CO_2 gas during heating affect the texture of the cake?