

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

CLASS-X SUBJECT-SCIENCE

DATED: SEP.9,2025

(ANSWERS KEY)

Q1. C

Q2. a

Q3. c

Q4. b

Q5. a

Q6(A) The metal which reacts with water only on boiling is magnesium as it does not react with cold water.

(B) The metal which does not react even with steam is copper.

Q7. (a) (i) decrease the object distance

(ii) increase the focal length

(b) (i) diverging lens/ concave lens

(ii) $f = 1/P = 1/(-2) = -0.5 \text{ m}$

(iii) Given: $u = -10\text{cm}$, $P = -2\text{D}$

$f = -0.5\text{m} = -50\text{cm}$

$v = -8.33\text{cm}$

$1/f = 1/v - 1/u$

$\Rightarrow 1/-50 = 1/v + 1/10$

$\Rightarrow 1/v = -1-5/50 = -6/50$

$\Rightarrow V=-50/6$

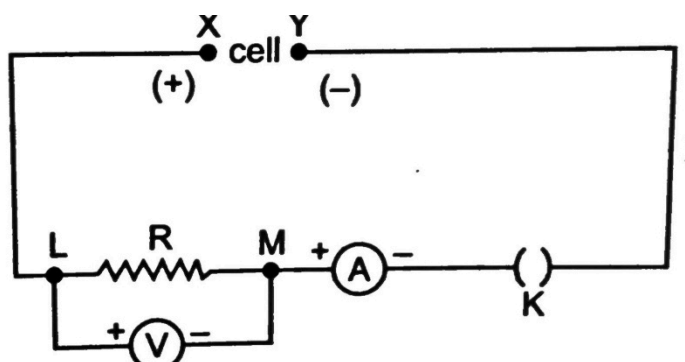
$\Rightarrow -8.33\text{cm}$

\Rightarrow Image is formed 8.33cm I front of the lens.

Q8. Ohm's law: When the physical conditions such as temperature, etc. remain same, the current flowing through the conductor is directly proportional to the potential difference applied across the ends.

Necessary condition for validity of Ohm's law is that physical condition such as temperature, nature of the conductor remains same.

Experimental verification:



Procedure: (i) Complete the circuit by connecting one cell in the gap XY. Plug the key.

(ii) Note the reading in the ammeter for the current I and in the voltmeter for the potential difference, (V) across the nichrome wire.

(iii) Repeat the above steps using two cells in series and then three cells in the series (in the gap XY separately).

(iv) Tabulate the readings in the table given:

S. No.	No.of cells in gap XY	Voltmeter reading $V(\text{volts})$	Ammeter reading $I(\text{Ampere})$	$V/I = R$
1	1			
2	2			
3	3			

(v) Find the ratio of V to I for each observation.

(vi) Plot a graph between V (y-axis) and I (x-axis).

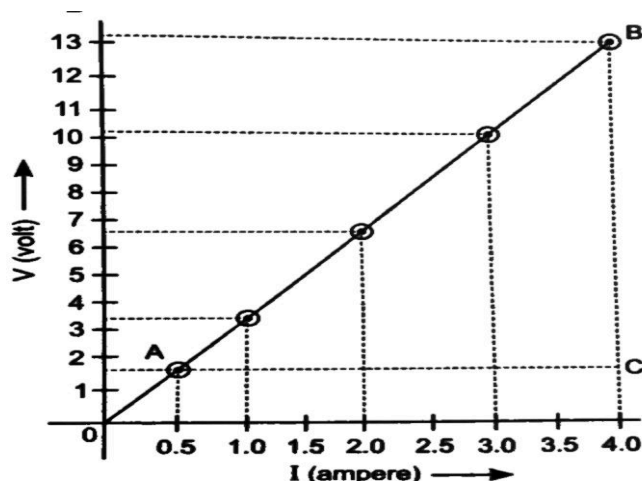
Observation:

1. Voltmeter and ammeter reading increases as the number of cells increase in series.

2. Same value of V/I is obtained in each case.

3. V-I graph is a straight line passing through the origin having constant slope with the X-axis .

(b)



Resistance is given by the slope of V-I graph as..

Slope of V-I graph $AB = BC/AC$

$$\Rightarrow (13 - 2)/(4 - 0.5)$$

$$\Rightarrow 11.6/3.5$$

$$= 3.31 \text{ Ohm}$$

Q10. 1. As it releases CO_2 which gets trapped in the batter, making the cake soft, fluffy and spongy.



3. The cake may taste bitter.

4. The CO_2 gas forms bubbles in the batter, causing it to rise and make it porous structure. This makes the cake light, soft and spongy.

