

2025-26

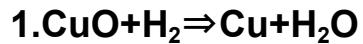
**DISTRICT COMMON EXAMINATION BOARD**

**DR. B. R. AMBEDKAR KONASEEMA DISTRICT, AMALAPURAM**

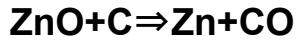
**SUB: PHYSICAL SCIENCE (EM)**

**Pre SA-1 KEY**

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Or

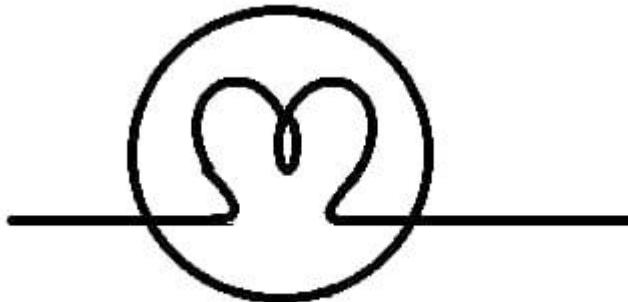


**Or any other related equation.**

2. Red colour

3. Reduction

4. A



5.

6. 1:2

7. C

8.  $9\Omega$

9. Alkanes:  $\text{C}_2\text{H}_6$ ,  $\text{CH}_4$ ,  $\text{C}_3\text{H}_8$

Alkenes:  $\text{C}_3\text{H}_6$

Alkynes:  $\text{C}_3\text{H}_4$ ,  $\text{C}_2\text{H}_2$

10. Power of lens,  $P = 100 / f$

$$f = 100 / (-2)$$

$$= -50 \text{ cm}$$

Negative sign indicates concave lens.

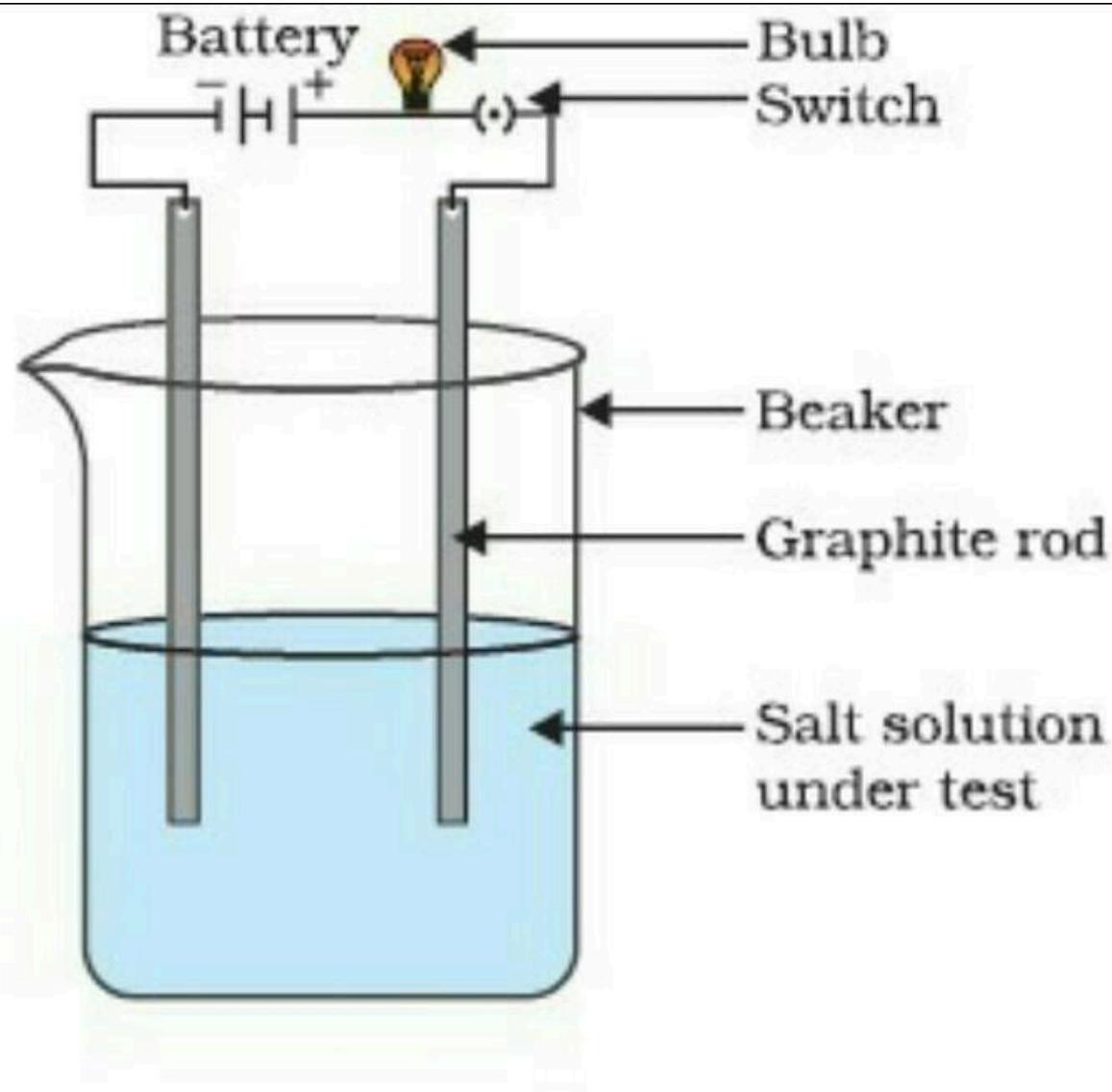
11. . We could not use fans, TVs, refrigerators, or computers etc

**Or**

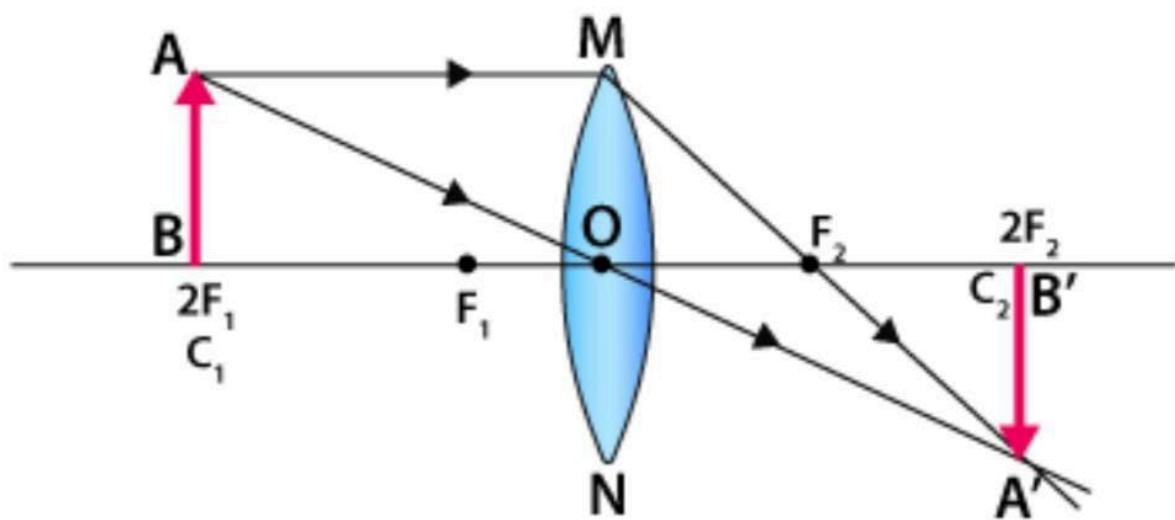
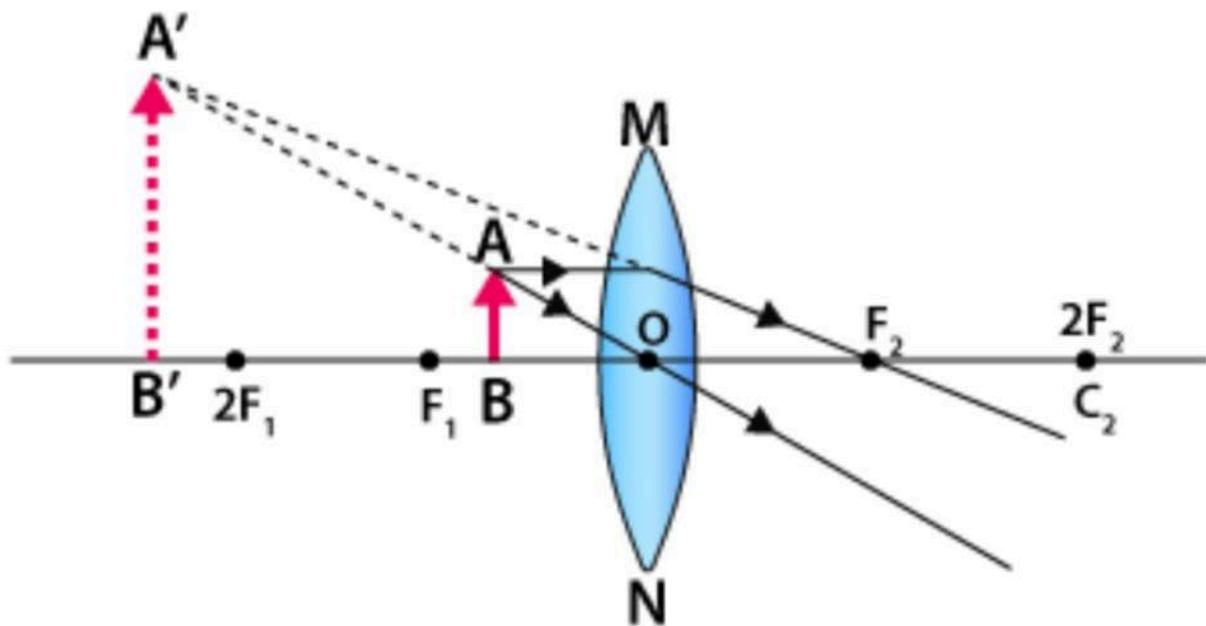
We have no TVs, No mobile phones, no computers, no refrigerators etc...

(Any two)

12a)



12b)



### 13. pH Applications:-

1. Maintaining healthy soil for plants
2. Preventing Tooth decay
3. Ensuring proper digestion in humans.
4. Self defence mechanism of plants and animals.

14.

| Position of the object | Position of the image | Size of the image | Nature of the image |
|------------------------|-----------------------|-------------------|---------------------|
| Beyond C               | Between F and C       | Diminished        | Real and inverted   |
| At C                   | At C                  | Same size         | Real and inverted   |
| At F                   | At infinity           | Highly enlarged   | Real and inverted   |
| Between P and F        | Behind the mirror     | Enlarged          | Virtual and erect   |

15a)  $\Rightarrow$  Hypermetropia is also called for far-sightedness.

$\Rightarrow$  people cannot see nearby objects clearly.

$\Rightarrow$  They can see distant objects clearly.

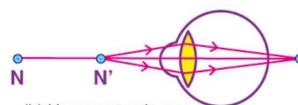
$\Rightarrow$  This defect is also called farsightedness.

$\Rightarrow$  Image will be formed beyond the retina.

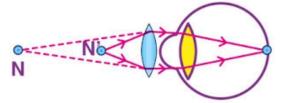
$\Rightarrow$  This defect may arise due to the focal length of the eye lens being too long or the eyeball becoming too small.

$\Rightarrow$  Convex lenses are used to correct hypermetropia.

$\Rightarrow$  The focal length of the lens used for correction is  $f = 25d / d-25$ .



(b) Hypermetropic eye



(b) Correction for Hypermetropic eye

15b

Ans: i) **Electric current**

The net charge flows across any cross-section of a conductor in unit time is called electric current.

$$I = Q/t$$

The SI unit of electric current is ampere.

ii) **Potential difference**

The amount of work done in moving a unit positive charge from one point to another point in the field.

$$V = W/Q$$

SI unit of potential difference is 'volt'.

iii) **Ohm's law**

The potential difference across the ends of a resistor is directly proportional to the current through it, provided its temperature remains the same.

$$V=IR$$

SI unit of resistance is 'ohm'.

iv) **Electric power**

The rate of doing electric work is called electric power .

$$P = VI$$

The SI unit of electric power is 'watt'.

16a) **Combination reaction:** A reaction in which a single product is formed from two or more reactants is known as a combination reaction.

Ex:  $\text{CaO} + \text{H}_2\text{O} \Rightarrow \text{Ca}(\text{OH})_2$

2. **Decomposition reaction:** A reaction in which a single substance decomposes to give two or more substances is known as decomposition reaction.

heat

Ex:  $\text{CaCO}_3 \xrightarrow{\text{heat}} \text{CaO} + \text{CO}_2$

3) **Displacement reaction:** The reaction in which an element has displaced or removed another element from the molecule is called displacement reaction.

Ex:  $\text{Fe} + \text{CuSO}_4 \Rightarrow \text{FeSO}_4 + \text{Cu}$

4) **Double displacement reaction:** The reaction in which there is an exchange of ions between the reactants are called double displacement reactions.

Ex:  $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$

16b)

|                              |                              |
|------------------------------|------------------------------|
| Ethanol                      | Ethanoic acid                |
| 1. It is a neutral compound. | 1. It is an acidic compound. |

|   |  |
|---|--|
| 2.It does not react with metal carbonates.      | 2.It reacts with metal carbonates.         |
| 3.It does not give brisk effervescence          | 3.It gives brisk effervescence             |
| 4.It is oxidised.                               | 4.It is not oxidised                       |
| 5.It has pleasant smell                         | 5.It has pungent smell                     |
| 6.Its melting point is lower than ethanoic acid | 6.Its melting point is higher than ethanol |
| 7.Its boiling point is lower than ethanoic acid | 7.Its boiling point is higher than ethanol |

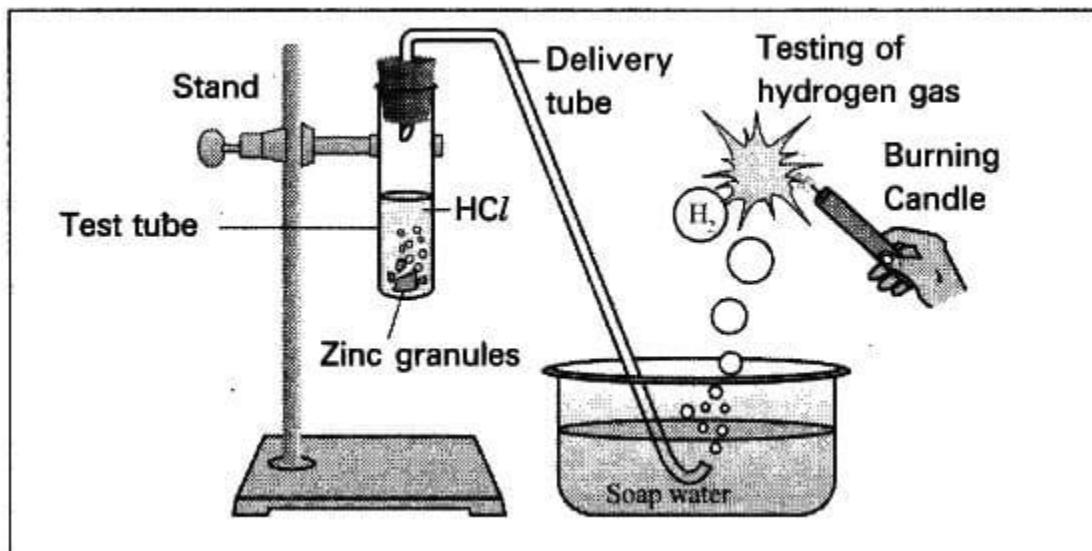
**17a) Aim: to show that acids produce hydrogen gas reacted with metals.**

**Required materials:** test tube, delivery tube glassstrough, candle, soap water, dilute  $\text{H}_2\text{SO}_4$ , zinc granules.

**Procedure:**

- i) Set the apparatus as shown in figure.
- ii) Take about 5 mL of dilute sulphuric acid in a test tube and add a few pieces of zinc granules to it.
- iii) We observe a gas is evolved from the zinc granules
- iv) Pass the gas being evolved through the sap solution.
- v) We observe some bubbles formed in the soap solution.
- vi) Take a burning candle near the gas filled bubble.
- vii) The candle turns off with a pop sound.
- viii) The pop sound indicates that the gas evolved is  $\text{H}_2$ .

ix) Repeat this experiment with remaining acids



**Conclusion/Observation:** We conclude that hydrogen gas is produced when acid reacts with metals

17b)

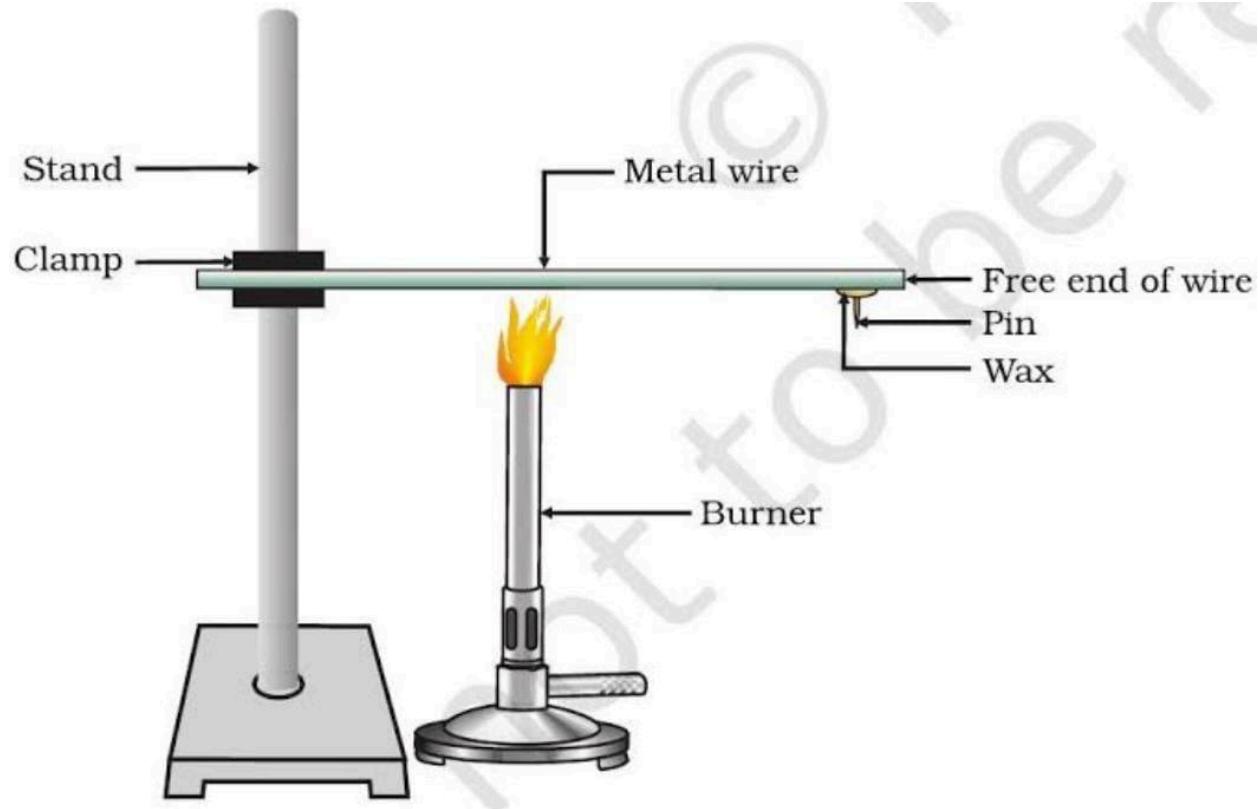
**Aim:** To show that metals are good conductors of heat.

**Required Materials:** Copper/Aluminium wire, Stand, Clamp, Burner

**Procedure:** i) Take an aluminium or copper wire.

ii) Clamp this wire on a stand, as shown in Fig. iii) Fix a pin to the free end of the wire using wax

iv) Heat the wire with a spirit lamp, candle or a burner near the place where it is clamped.



**Observations:**

**When aluminium or copper wire is heated at one end, heat reaches the other end, melting the wax and the pin gets detached.**

**ii) metals are good conductors of heat.**