Time: 2 Hours 45 Min.   Parts A and B   Maximum Marks : 50
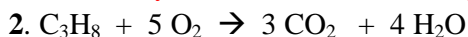
Class-10 -   KEY SHEET

Section - I

1. If we take some spirit in to our hand, we feel cool due to evaporation of the spirit.

Note : Any related answers should be given full marks .

2. $C_3H_8 + 5 O_2 \rightarrow 3 CO_2 + 4 H_2O$

3. If a convex lens is made up of two different materials as shown in figure. As the two materials have different refractive indices with different focal lengths, they form two images.

(Or)

If a convex lens is made up of two different materials as shown in figure. If the two materials have same refractive indices they form only one image.

(Or)

If a convex lens is made up of two different materials then we can't say about the image until the details of materials like refractive indices are given.
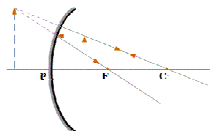
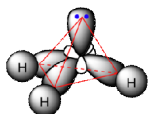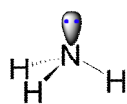Note : Any related answers should be given full marks .

4. $CH_2 = CH_2$
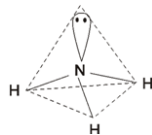
(Or)

C_2H_4
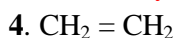
5. Ray diagram

6. Structure of Ammonia molecule.

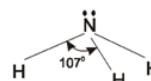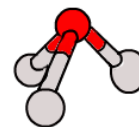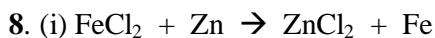Or   Or   Or   Or

Note : Any related answers should be given full marks .

7. Plants can survive in the narrow range of P^H values. So we made soil test to find P^H value.

Note : Any related answers should be given full marks .

Section - II

8. (i) $FeCl_2 + Zn \rightarrow ZnCl_2 + Fe$

   Zinc is more reactive than Iron, so it can displace Fe from $FeCl_2$.

(ii) $ZnCl_2 + Fe \rightarrow$ ….. This reaction does not possible.

   Iron is less reactive than Zinc, so it can't displace Zn from $ZnCl_2$.

9. Dobereiner, Newlands and Medeleev's classification of elements based on atomic masses. So They were not successful completely.

The properties of elements depends upon the configuration.

 And Modern periodic table is better than other. Because it was based on the atomic number or electronic configuration of elements.

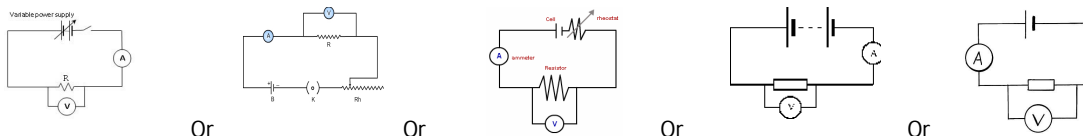Note : Any related answers should be given full marks .

10. In winter mornings, the temperature is lees in atmosphere. The water vapour present in air cools down and condenses. The condensed water vapour setteled as water droplets (Dew) on the flowers and leaves of plants and grass.

11. (a) The element is in 3rd period and in 1st Group (I_A Group)

(b) The element is in 3rd period and in 15th Group (V_A Group)

12. Experimental set up to verify $\frac{V}{I}$ is constant :

Or   Or   Or   Or

13. A Bi convex lens is useful for him to his surroundings clearly. (In general convex lens = Bi convex lens)
Because he is suffering from Hypermetropia.

Note : I have a doubt : Whether the question is right or wrong. Something confusion. I have no clarity about LDDV and NP.

Section - III

14A. Carbon has two types of allotropes

(i) Amorphous forms :

Ex: Coal, coke, wood charcoal, Lamp black, Gas carbon, Petroleum coke, Sugar charcoal

(ii) Crystalline forms :

Ex: Diamond, Graphite, Buckminster fullerene (C_{60}) or Bucky balls, Bucky tubes

14B. The characteristics of homologous series:

(i) They have one general formula.

(ii) Successive compounds in this series differ by $-CH_2$ unit.

(iii) They possess similar chemical properties due to the same functional group.

(iv) They show a regular gradation in their physical properties.

15A. Concave mirror :

Focal length (f) = - 20 cm

Object distance (u) = - 30 cm

Image distance (v) = ?

Height of the object (H_o) = 5 cm

Height of the image (H_i) = ?

Mirror formula :

$$\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$$

$$\frac{1}{-20} = \frac{1}{-30} + \frac{1}{v}$$

$$\frac{1}{v} = \frac{-1}{20} + \frac{1}{30}$$

$$\frac{1}{v} = \frac{-30+20}{20 \, X \, 30} = \frac{-10}{600} = \frac{-1}{60}$$

V = - 60 cm.

Magnification (m) $= \frac{H_i}{H_o} = \frac{-v}{u}$
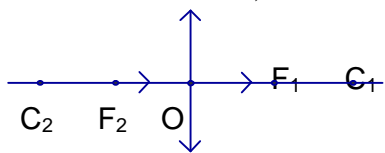
$$\frac{H_i}{5} = \frac{-(-60)}{-30}$$

H_i = 5 X (-2) = - 10 cm

NAGA MURTHY- 9441786635
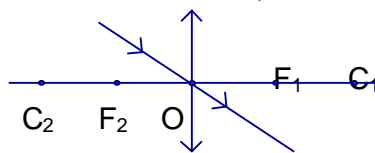Contact at : nagamurthysir@gmail.com
Visit at :   nagamurthy.weebly.com

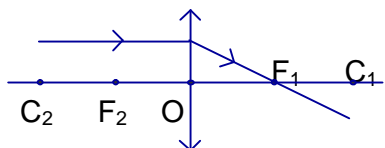**15B.** Behaviour of light rays while passing through convex lens:

- Any ray passing along the principal axis is un deviated, after refraction.

- Any ray passing through the optic centre is undeviated, after refraction.

C_2 F_2 O F_1 C_1

C_2 F_2 O F_1 C_1

- Any ray which is passing parallel to the axis will pass through the focus, after refraction.

- Any ray passing through the focus will move parallel to the axis, after refraction.
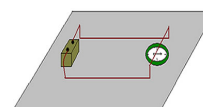
C_2 F_2 O F_1 C_1

C_2 F_2 O F_1 C_1
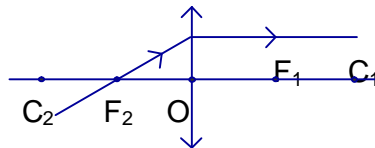
16A. Material required for Oersted's experiment : Battery, Copper wire, Compass

Procedure : Connect a copper wire to the battery and switch.
Place one compass below the wire. Switch on the circuit.
We observe the compass needle gets deflected.

Understanding : This indicates that the current carrying wire produces magnetic field.

Note : Any related answers should be given full marks. Diagram is not necessary.

16B. Material required for Electrolysis of water : Plastic mug, One holed rubber stoppers-2, Two carbon or Graphite electrodes, 9V battery, Water, Dil. Sulphuric acid, Two test tubes

Procedure : Drill two holes at the base of plastic mug. Fit two 'one holed rubber stoppers' in these holes. Insert two carbon electrodes in these rubber stoppers. Connect the electrodes to 9V battery. Fill the mug with water, so that the electrodes are immersed. Add few drops of dilute sulphuric acid to water. Take two test tubes filled with water and invert them over the two carbon electrodes. Switch on the current. Some liberation of gas bubbles at both the electrodes appeared.

In this experiment we get Hydrogen and Oxygen gases.

Note : Any related answers should be given full marks. Diagram is not necessary.

17A. (i) Acids are HCl and Lemon Juice   (Or)   HCl , Lemon juice

(ii) Basic nature or Base

(iii) Neutral solutions are Distilled water and NaCl

(iv) Strongest acid is HCl and Strongest base is NaOH (Or) HCl, NaOH

Note : Any related answers should be given full marks. Full sentences are not needed.

17B. (i) Ice converts to water at 0^oC   (Or) 0^oC

(ii) DE represents the phase change of water into water vapour

(or) DE represents the state of water at 100^oC

(iii) Range of temperature of liquid water is 0^oC to 100^oC. (Or) 0^oC to 100^oC.

(iv) BC represents the change of state from ice to water.   (Or) BC

Note : Any related answers should be given full marks. Full sentences are not needed.

Note : In Question paper , the given graph is not correct at DE and after E. So I think the students may confused. So I appeal to award one mark for Question 17B (b):