I MCQ.

1). a). Absorbs more heat

2). b) basic property increases and OH^- ion increases

3) b). primary shoot & primary root

4). d). At the centre of curvature & inverted.

5) b) hydro-electric power plant.

6) a) C_2H_6

7) c) It is secreted by parathyroid gland

8) d) C_nH_{2n+2}

II IM Questions

9) Copper Electroplating process

10) SI unit of potential difference - volt (V)
device is voltmeter

11). Since the amount of dissolved oxygen in water is fairly low compared to the amount of O_2 in air.

12). Sodium & potassium belongs to same group. because they both have same valency it is 1.
Molecular formula of potassium sulphate is K_2SO_4. & (SO_4^{2-}) has 2^- ion.

13). Farmers can produce clean domestic fuel from the wastes like animal dung, dry leaves, dry plants etc. & spent slurry can be used in the fields as manure to increase the fertility of soil.

14) Black colour.

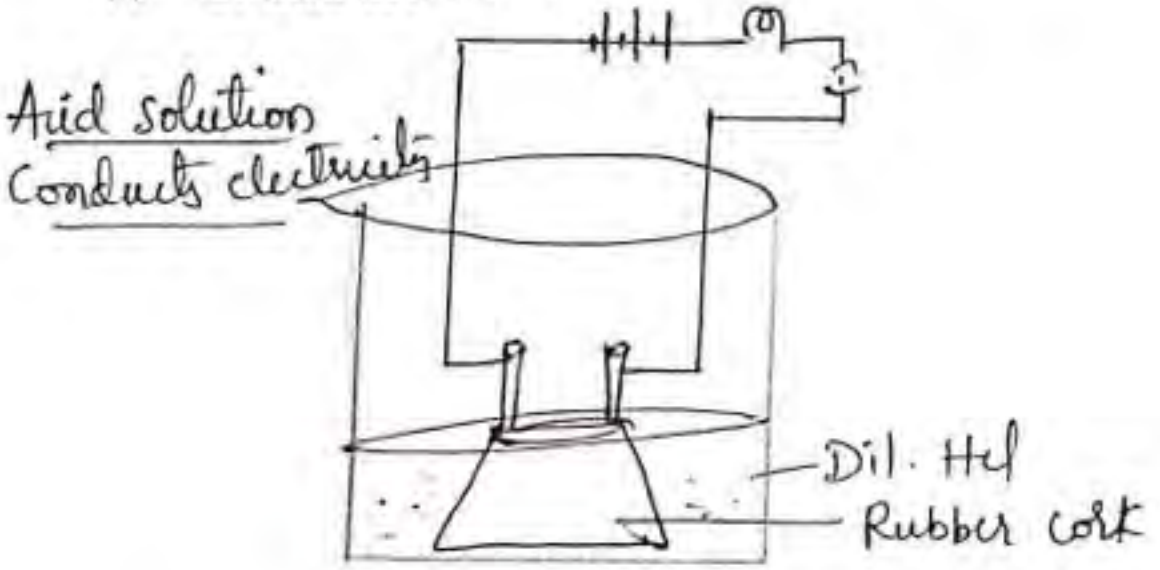
15) (i) H_2 is oxidized
(ii) CuO is reduced

16) It produces induced current with circuit. Because motion of the magnet with respect to the coil produces an induced potential difference

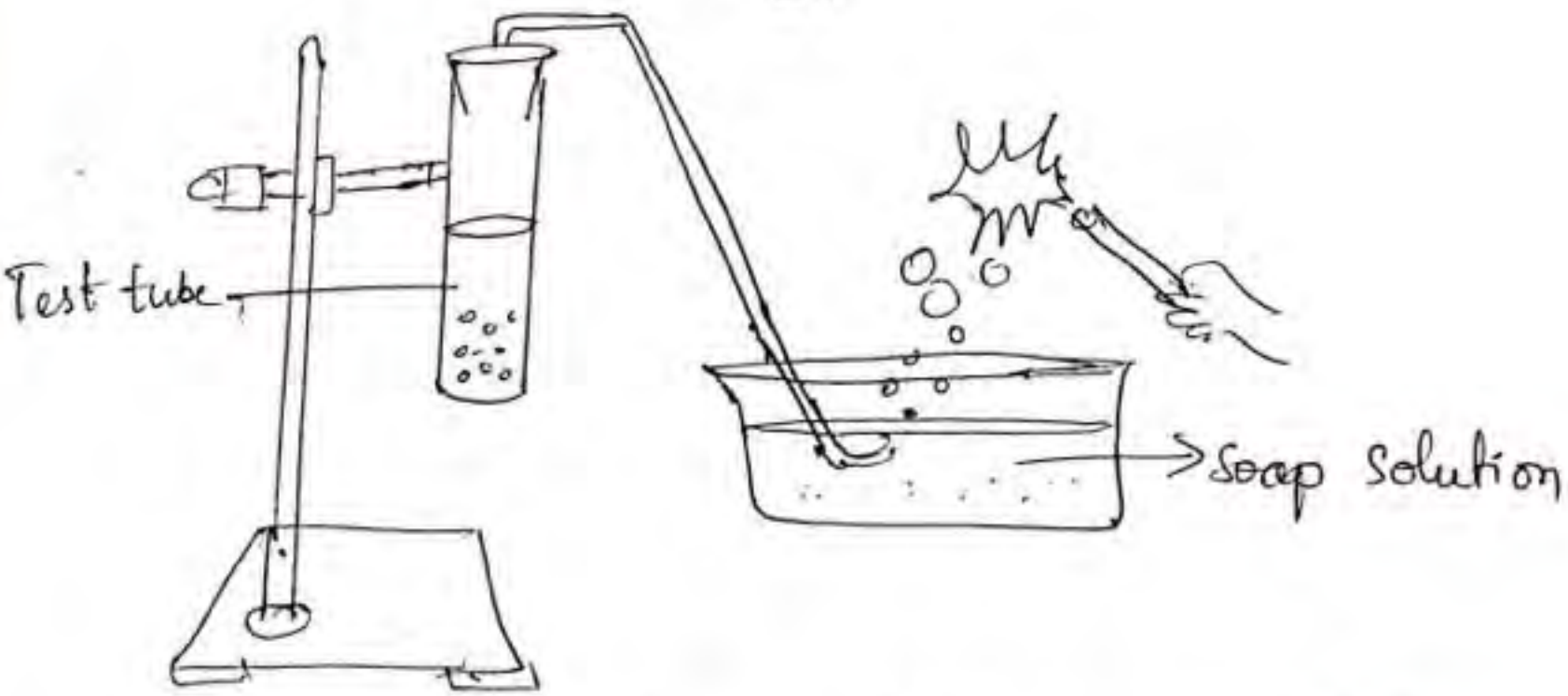
17) Because to reduce acidic nature of soil & makes the soil alkaline.

18) Because Frog & lizard are cold blooded animals. They can change their body temperature according to environment.

19)



(OR)



Zinc granules with Sulphuric acid & testing hydrogen gas by burning

20) Given

$\rho = 1.84 \times 10^{-6}$
$l = 1m$
$d = 3 \times 10^{-4}$
$R = ?$

The resistance of the wire at 20°C is 20Ω

$\rho = \frac{RA}{l}$

$R = \frac{\rho l}{A} \Rightarrow A = \frac{\pi d^2}{4}$

$$R = \frac{4\rho l}{\pi d^2} = \frac{4 \times 1.84 \times 10^{-6} \times 1}{3.14 \times (3 \times 10^{-4})^2}$$

$$= \frac{7.36 \times 10^{-6}}{28.26 \times 10^{-8}}$$

$$R = \frac{0.2604 \times 10^{2}}{}$$

$$R = \underline{26\Omega}$$

(OR)

Given = $R_1 = 2\Omega$, $R_2 = 4\Omega$ $R_3 = 4\Omega$, $R_4 = 5\Omega$

$V = 6V$

$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$\frac{1}{R_p} = \frac{1}{2} + \frac{1}{4} + \frac{1}{4}$$

$$= \frac{2+1+1}{4} = \frac{4}{4}$$

$R_p = 1\Omega$

$R = R_p + R_4$

$R = 1 + 5$

Total Resistance = $\boxed{R = 6\Omega}$

$V = IR$

$I = \frac{V}{R} \Rightarrow \frac{6}{6}$

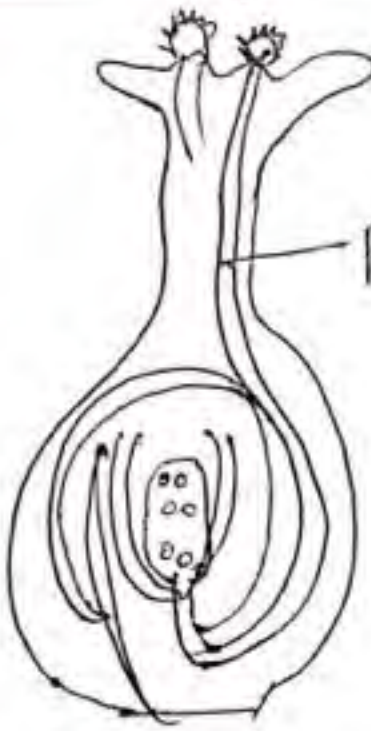
$\boxed{I \text{ (Total current)} = 1A}$

21) Because energy decreases as it moves up trophic levels because energy is lost as metabolic heat when the organisms from one trophic levels are consumed by organisms from the next level.

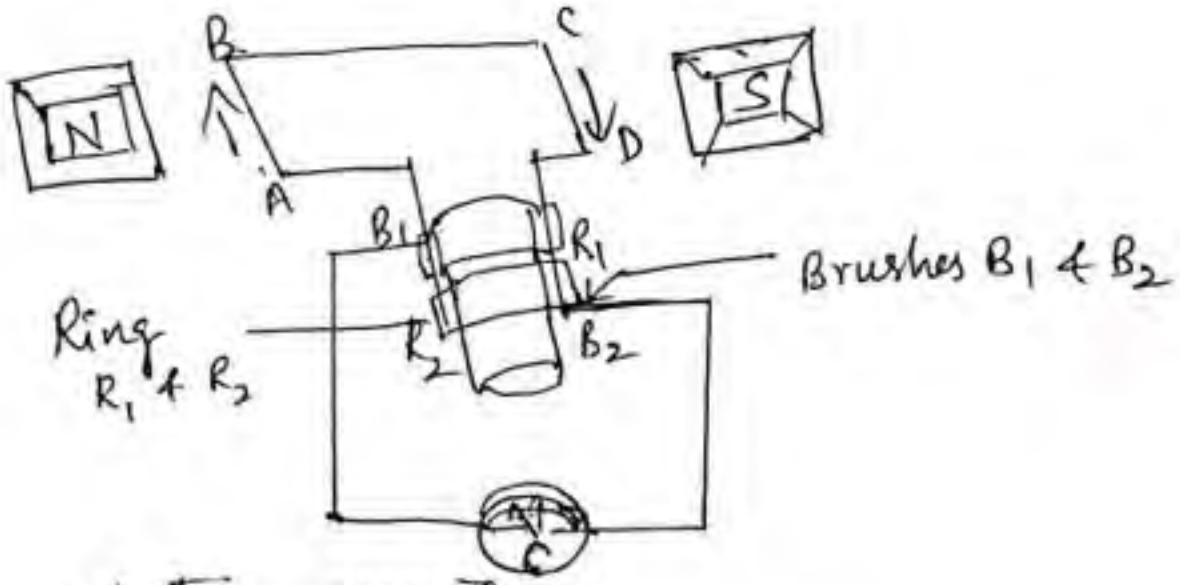
22) (i) It has good property of malleability and ductility.

(ii) Nickel is a alloy which has the good property of Sonorous.

23) Germination of pollen on stigma



24)



25) Joules of heating Effect

$H = I^2Rt$

heat produced by the Resistor is directly proportional to the
(i) Square of the current for a given resistor
(ii) Resistance for a given Current.
(iii) time taken to flow the current through the resistor

Working of Electric filament Bulb:

In an incandescent type of bulb an electric current is passed through a thin metal filament. heating the filament until it glows & produces light. filament has a lot of resistance to electricity. As a result of their resistance, the filament heats up & starts glowing by Converting electrical energy to light energy.

(OR)

Ohm's law: The potential difference across the two ends of the resistor is directly proportional to Current through it & temperature remains Constant.

$V = IR$

ammeter should be connected in series. & voltmeter should be Connected in parallel. in electric circuit ammeter measures the flow of current in the circuit. Voltmeter measure the potential difference across the circuit

26) * Double displacement reaction & also precipitation reaction
In this reaction mutual exchange of ions takes place & also produces precipitate

$3BaCl_2 + Al_2(SO_4)_3 \longrightarrow 3BaSO_4 + 2AlCl_3$

27. Male reproductive system Consists of

- Testes: produces male germ cells & Secretes Testosterone harmone.
- Vasdeferens: delivers sperms & it unites with a tube coming from urinary bladder
- Seminal vesicles: which is a gland produces Secretions & prostrate glands produces fluid medium & nutrition to sperms
- penis helps to transfer sperms to female reproductive system.

(OR)

The embryo gets nutrition from the mothers blood with the help of special tissue called placenta. This is a disc like tissue which develops between uterine wall & embryo. it provids oxigen & nutrients to the growing baby & removes waste products from the baby's blood.

28) Substitution Reaction:

$$CH_3-CH_3 + Cl_2 \xrightarrow{UV} CH_3-CH_2Cl + HCl.$$

C_2H_6 is a saturated hydrocarbon, hence it do not undergo addition reaction

(OR)

Cleaning action of Soap & Detergents.

most of the dirt is oily in nature & oil does not dissolve in water. The molecule of Soap Constitutes Sodium (or) potassium salts of long chain Carboxylic acids. In the case of Soaps, the Carbon Chain dissolves in oil & the ionic end dissolves in water

29) (i) Social problems: because they displace large no of peasants & tribals without adequate Compensation & rehabitation.

(ii) Economic problems: because they swallow up huge amount of public money without the generation of proportionate benefits

(iii) Environmental problem: because they Contribute enormously to deforestation & the loss of biological diversity.

The people who have been displaced by various development projects are largely poor tribals who do not get any benefits from these projects.

30) $f = -12\,cm$

$u = -18\,cm$

$v = ?$ $m = ?$

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

$\frac{1}{-12} - \frac{1}{-18} = \frac{1}{v}$

$\frac{-18-(-12)}{(-12)(-18)} = \frac{1}{v}$

$-\frac{18+12}{216} = \frac{1}{v}$

$\frac{-6}{216} = \frac{1}{v}$

$v = \frac{216}{-6}$

$\boxed{v = -36\,cm}$

$m = \frac{-v}{u}$

$m = -\frac{(-36)}{-18}$

$m = \frac{36}{-18}$ 2

$m = -2$

image is inverted & enlarged.

(OR)

30) (OR)

$P = -0.5\ D$

$f = ?$

$P = \frac{1}{f}$

$f = \frac{1}{P}$

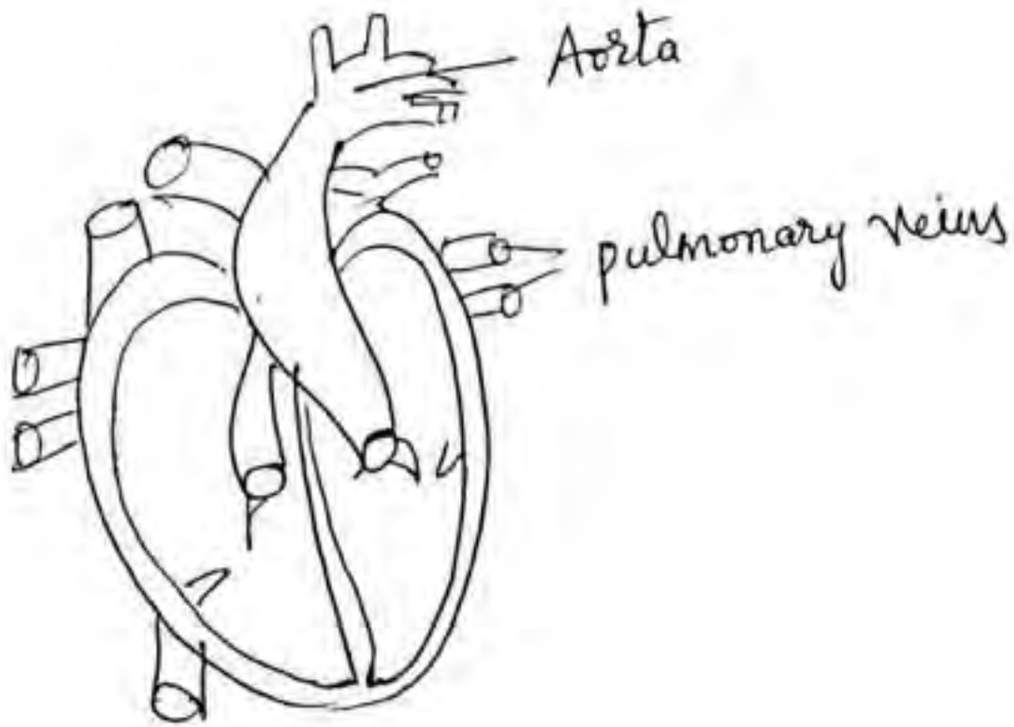
$f = \frac{1}{-0.5}$

$f = 0.5\ CM.$

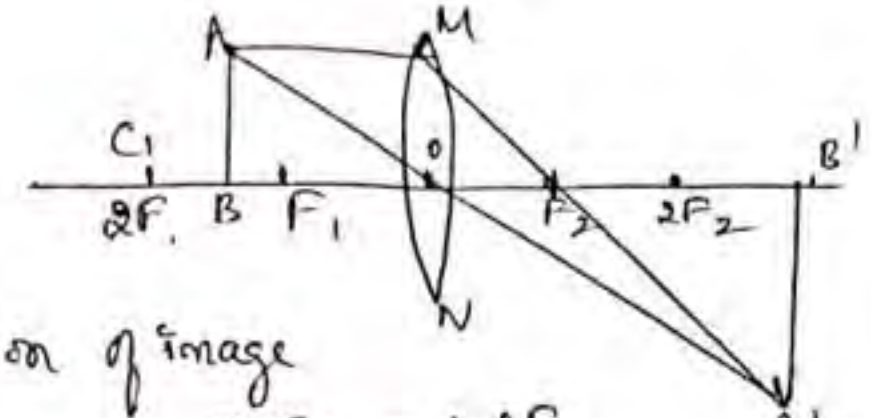
lens is diverging because the power of lens is negative due to this it diverges the light rays.

Myopia (or short sightedness can be corrected by wearing spectacles containing Concave lens. This is because when a concave lens of suitable power is used for the myopic eye. Then the Concave lens first diverge, the parallel rays of light coming from distant object.

31\$.



32).



Position of image
= Beyond $2F_2$

Nature of image = Real & Inverted

33) Electronic Configuration of element no 8 = 2, 6

16 = 2, 8, 6

* Yes. It belongs to the same group = 16. They have same valency - 2.

Oxygen & sulphur are the elements.

Oxygen more electronegative. because Sulphur expand its valence shell to hold more than eight electrons.

34) * Reflex arc.

* It is the pathway of nerve involved in reflex action.

A. Dorsal spinal nerve

B = effector (muscle)

Because these 2 structure sends message from sensory neuron to Spinal cord.

35) The metal sulphides and carbonates must be converted into metal oxides.

Roasting the sulphide ores are converted into oxides by heating strongly in the presence of excess of air. is called as roasting

Calcination The Carbonate ores are changed into oxides by heating strongly in limited air called Calcination.

Roasting :-

$$2ZnS + 3O_2 \xrightarrow{Heat} 2ZnO + 2SO_2$$

Calcination

$$ZnCO_3 \xrightarrow{Heat} ZnO + CO_2$$

The metal oxide then reduced to the corresponding metals by using suitable reducing agents such as Carbon. ex: when Zinc oxides is heated with carbon, it is reduced to metallic Zinc.

$$ZnO + C \rightarrow Zn + CO.$$

36). place the plotting compass near the magnet on a piece of paper. mark the direction the compass needle points. move the plotting compass to many different positions in the magnetic field, marking the needle direction each time Joins the points to show the field lines

properties of magnetic field lines

① The magnetic field lines emerges from the north pole
② They merge at south pole
③ The direction of field lines inside the magnet is from south pole to north pole
④ magnetic field lines do not intersect each-other

37) F_1 generation RrYy Round yellow

RrYy x RrYy

	RY	Ry	rY	ry
RY	RRYY	RRYy	RrYY	RrYy
Ry	RRYy	RRyy	RrYy	Rryy
rY	RrYY	RrYy	rrYY	rrYy
ry	RrYy	Rryy	rrYy	rryy

Round yellow : Round green : wrinkled yellow : W.green

9 : 3 : 3 : 1

(OR)

Origin of new species in course of time called evolution.

* Methods

1) Age of fossils : a) Relative dating method
b) Absolute diding of fossils

2) Changes in the DNA during reproduction

3) Excavating

4) Determining DNA Sequence

5) By their ancestors.

38) Isaac newton was the first to use a glass prism to obtain the spectrum of sunlight. He tried to split the colours of the spectrum of white light further by using another similar prism. However he could not get any more colours. He then placed a second identical prism in an inverted position with respect to the first prism. He allowed the colours of the spectrum to pass through the second prism. He found a beam of white light emerging from the other side of the second prism. This observation gave newton the idea that sunlight is made up of 7 colours.

Light from the sun near the horizon passes through thicker layers of air & larger distance in the earth's atmosphere before reaching our eyes.

However light from the sun overhead would travel relatively shorter distance. At noon, the sun appears white as only a little of the blue & violet colours are scattered. Near the horizon, most of the blue light & shorter wavelengths are scattered away by the particles. Therefore the light that reaches our eyes is of longer wavelengths. This gives rise to the reddish appearance of the sun.