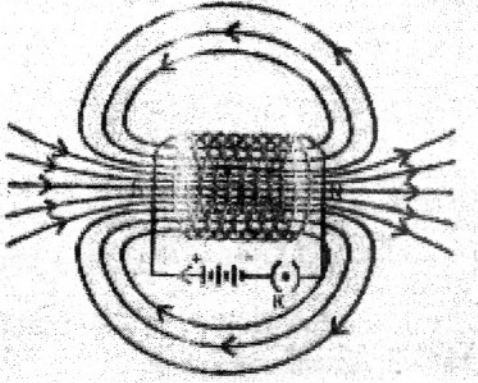
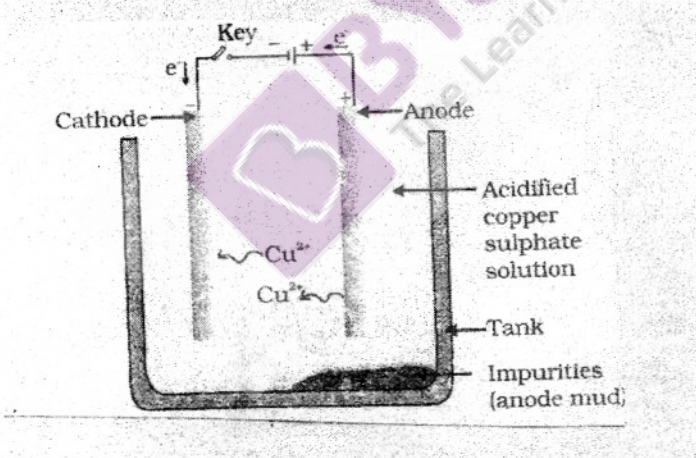


SECTION - A

	Expected Answer / Value point	Marks	Total
1.	Iron nails get coated with a reddish brown substance. Copper sulphate solution becomes light green	$\frac{1}{2}$ $\frac{1}{2}$	1
2.	Catenation / Tetravalency / Ability to form multiple bonds / Carbon – Carbon bond is very stable. (any two)	$\frac{1}{2}, \frac{1}{2}$	1
3.	Because the angle of incidence is 0° / Ray passing through the centre of curvature is incident normally to the mirror.	1	1
4.	Virtual / Erect	1	1
5.	Positive charge / Proton	1	1
6.	Ciliary muscles	1	1
7.	(i) A white precipitate / Insoluble substance is formed. (ii) If the reactants are in solid state. (iii) $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \longrightarrow 2 \text{NaCl} + \text{BaSO}_4$ (iv) Double displacement / Double decomposition / Precipitation	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
8.	(i) Methane / CH_4 (ii) By anaerobic decomposition of bio mass in the presence of micro-organisms. (iii) It is a clean fuel It burns without smoke It leaves no residue Its heat capacity / calorific value is high It is used for lighting purpose Safe and efficient method of waste disposal slurry left behind can be used as an excellent manure. (Any two)	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}, \frac{1}{2}$	2
9.	a) X – Violet Y – Red b) Due to difference in speed of different colours / Difference in wavelength and frequency / Refractive index of glass is different for different colours of light.	$\frac{1}{2}$ $\frac{1}{2}$ 1	2
10.	Solenoid is a coil of many circular turns of insulated copper wire wrapped closely in the shape of a cylinder.	$\frac{1}{2}$	

	Expected Answer / Value point	Marks	Total
	 <p>pattern direction</p> <p>Pattern indicates that the magnetic field is uniform at all points inside the solenoid</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>2</p>	
11.	<p>(i) Momentary deflection in the galvanometer to one side</p> <p>(ii) Momentary deflection in the galvanometer, now in the opposite direction.</p> <p>(iii) No deflection in the galvanometer</p> <p>Phenomenon involved is electromagnetic induction</p>	<p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>2</p>	
12.	<p>Any four of the following :</p> <p>(i) It can be used only at those places where wind blows for the greater part of the year.</p> <p>(ii) Wind speed should be higher than 15 km/h to rotate the turbine at the required speed</p> <p>(iii) Need of a back up facility when there is no wind</p> <p>(iv) Requires large area for setting up wind energy farms</p> <p>(v) Tower and blades require a high level of maintenance</p> <p>(any other point)</p>	<p>1/2x4</p> <p>2</p>	
13.	$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$ $\frac{1}{u} = \frac{1}{24} - \frac{1}{18}$ $= \frac{3-4}{72} = \frac{-1}{72}$ <p>$\therefore u = -72 \text{ cm}$</p> <p>object should be placed at a distance of 72 cm from the lens</p> $m = \frac{v}{u}$	<p>1/2</p> <p>1/2</p> <p>1</p> <p>1/2</p>	

Expected Answer / Value point	Marks	Total
$\text{Na} \cdot + \cdot \overset{\text{xx}}{\underset{\text{xx}}{\text{Cl}}} \cdot \longrightarrow \text{Na}^+ \left[\overset{\text{xx}}{\underset{\text{xx}}{\cdot \text{Cl} \cdot}} \right]^-$ $\text{K} \cdot + \cdot \overset{\text{xx}}{\underset{\text{xx}}{\text{Cl}}} \cdot \longrightarrow \text{K}^+ \left[\overset{\text{xx}}{\underset{\text{xx}}{\cdot \text{Cl} \cdot}} \right]^- \quad (\text{any one})$	1	
Ionic / Electrovalent bond	½	
Salts / Ionic compounds	½	
Physical properties :-		
(i) Crystalline solid at room temperature		
(ii) Brittle, hard solid		
(iii) Soluble in water		
(iv) Have high melting and boiling point		
(v) Conduct electricity in aqueous / molten form		
(any four)	4x½	5
OR		
Removal of impurities from a crude metal is called refining of metals	1	
Electrolytic refining	1	
	Drawing Any 2 labels	1 1
Description :		
On passing the current through the electrolyte, the pure metal from the anode dissolves into the electrolyte. An equivalent amount of pure metal from the electrolyte is deposited on the cathode. The soluble impurities go into the solution, whereas, the insoluble impurities settle down at the bottom of the anode and are known as <u>anode mud</u> .		
	1	

18.

(i) Work done in moving the charge $W = VQ$

$$\text{Power input, } P = \frac{VQ}{t}$$

$$= VI$$

$$\therefore \text{Energy, } E = P \times t = VI t$$

This energy gets dissipated in the form of heat

$$\therefore H = VI t$$

Applying ohm's law, we get

$$H = I^2 R t$$

(ii) The relation is known as Joule's law of heating

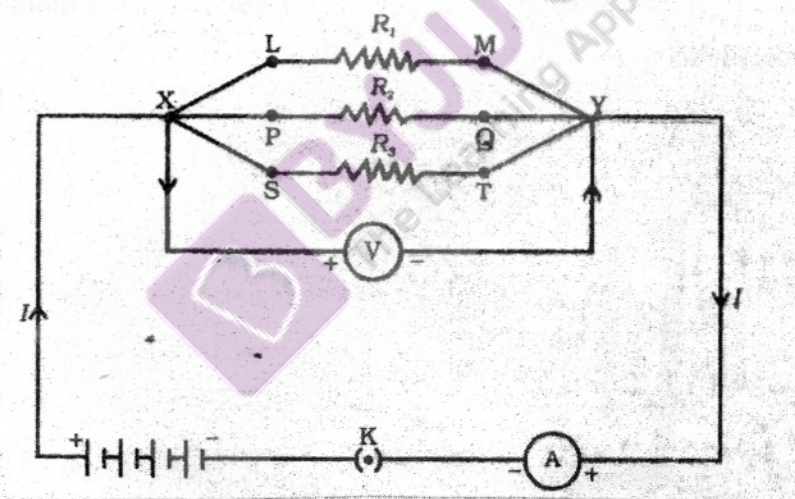
(iii) $P = 12 \text{ W}$ $t = 1 \text{ minute} = 60 \text{ s}$

$$H = P \times t$$

$$= 12 \text{ W} \times 60 \text{ s}$$

$$H = 720 \text{ J}$$

OR



• resistances in parallel

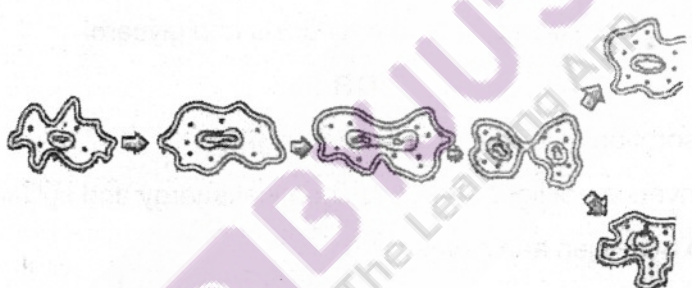
• placement of ammeter

• direction of current

• terminals to be marked

From the circuit, voltmeter and ammeter readings to be noted down. The ratio

of V and I gives the resistance

	Expected Answer / Value point	Marks	Total						
	<p>By using the formula $\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$</p> <p>resistance of the combination can be found.</p> <p>Ammeter is connected in series with the resistor</p> <p>Voltmeter is connected in parallel with the resistor</p> <p style="text-align: center;">SECTION - B</p>	1 1							
19.	Chloroplast, chlorophyll	½, ½	1						
20.	Vertebral column / Back bone		1						
21.	Excessive use of natural resources / Causes pollution		1						
22.	Chemical compounds which are poured into blood, help to control and coordinate	1							
	Thyroxin	½							
	Regulates carbohydrate, protein and fat metabolism	½	2						
23.		½ x4	2						
24.	<table><tr><th>Inherited</th><th>Acquired</th></tr><tr><td>passed on to the next generation</td><td>not passed on to the next generation but are acquired</td></tr><tr><td>eg. shape of ear lobe / color of eye / skin</td><td>eg. obesity / acquiring knowledge / skills</td></tr></table> <p style="text-align: right;">(any one example)</p>	Inherited	Acquired	passed on to the next generation	not passed on to the next generation but are acquired	eg. shape of ear lobe / color of eye / skin	eg. obesity / acquiring knowledge / skills		
Inherited	Acquired								
passed on to the next generation	not passed on to the next generation but are acquired								
eg. shape of ear lobe / color of eye / skin	eg. obesity / acquiring knowledge / skills								
25.	Deoxyribose nucleic acid	1							
	Nucleus	1							
	contains information for inheritance of features from parents to next generation	1	3						
26.	<ul style="list-style-type: none">Non-biodegradable chemicals (toxic substances) which get accumulated progressively at each trophic level of a food chain.	1							

	Expected Answer / Value point	Marks	Total
27.	<ul style="list-style-type: none"> Accumulation is progressive at each trophic level Maximum accumulation (concentration) is found in tertiary consumers. 	1 1	3
	<u>MOUTH</u> : Salivary amylase secreted by salivary glands breaks starch to sugar.	½	
	<u>STOMACH</u> : Pepsin digests proteins and HCl facilitates action of enzyme pepsin and creates acidic medium.	½ ½	
	<u>SMALL INTESTINE</u> : Receives secretions from liver and pancreas.		5
	Pancreas : Trypsin digests proteins	½	
	Lipase digests fats	½	
	Liver : Bile juice emulsifies fat	½	
	Bile juice makes the medium basic (for the action of pancreatic enzymes)	½	
	: Intestinal juice converts proteins to aminoacids, carbohydrates to glucose, fats to fatty acids and glycerol.	½, ½, ½	
	OR		
	a) (i) Absorption of light energy by chlorophyll.	½	
	(ii) Conversion of light energy to chemical energy and splitting of water into hydrogen and oxygen.	½	
	(iii) Reduction of carbondioxide to carbohydrates.	½	
	• Massive amounts of gaseous exchange takes place through stomata	½	
	b) • Take a destarched potted plant.	½	
	• Cover part of a leaf with black paper and keep it in the sunlight for about 6 hrs.	½	
	• Decolorize the leaf by boiling in water and then alcohol in a water bath.	½	
	• Dip the leaf in dilute solution of iodine for a few minutes.	½	
	• Part of the leaf covered with black paper does not turn blue black, covered portion turns blue black.	½	
	• Covered portion does not synthesize starch, uncovered portion synthesizes starch.	½	