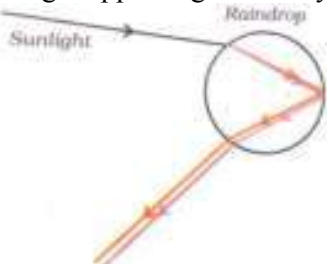
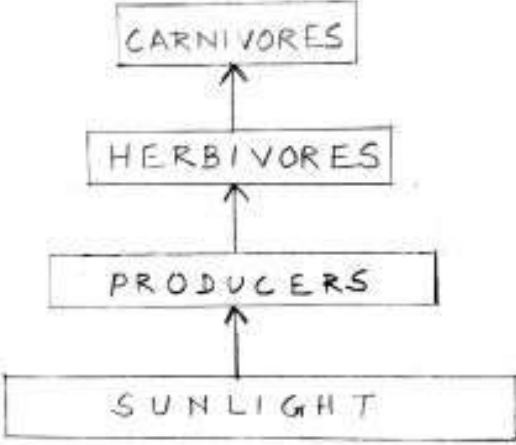
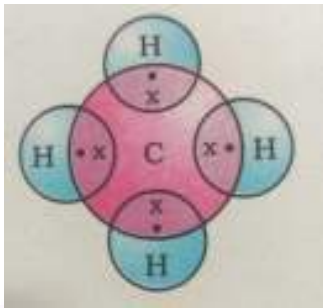


## SET 31/ 1 / 1

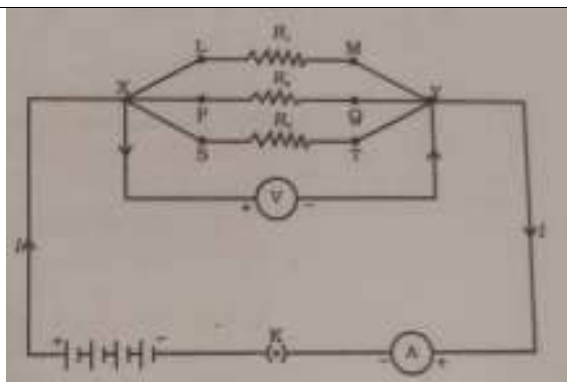
Q.No	Value Point/Expected Answer	Value	Total Marks
1.	Section 'A' Detect the presence or direction of current.	1	1
2.	It burns completely/ burns without smoke / high calorific value.	1	1
3.	Section 'B' Modern periodic table consists of groups and periods. Where number of valence electrons determines the <b>group</b> and number of shells determines the <b>period</b> .  OR  (a) Group – 14, Period – 3 (b) Silicon Non – metallic / poor conductor of electricity (or any other property)	1, 1   ½ + ½ ½ ½	2
4.	<ul style="list-style-type: none"> <li>• Aerobic / Presence of oxygen Product – CO<sub>2</sub> and H<sub>2</sub>O</li> <li>• Anaerobic / Absence of oxygen Product – lactic acid</li> </ul>	½ ½ ½ ½	2
5.	<ul style="list-style-type: none"> <li>• Power of accommodation – Ability of eye lens to adjust its focal length.</li> <li>• Curvature increases/lens becomes thick</li> </ul>	1 1	2
6.	SECTION C  <ul style="list-style-type: none"> <li>• White silver chloride turns grey in sunlight</li> <li>• <math>2\text{AgCl} \xrightarrow{\text{Sunlight}} 2\text{Ag} + \text{Cl}_2</math></li> <li>• Decomposition reaction / Photolytic decomposition</li> </ul> OR  a) Displacement reaction $\text{Zn} + 2\text{AgNO}_3 \longrightarrow \text{Zn}(\text{NO}_3)_2 + 2\text{Ag}$ b) Double displacement reaction $2\text{KI} + \text{Pb}(\text{NO}_3)_2 \longrightarrow \text{PbI}_2 + 2\text{KNO}_3$ (deduct ½ mark for non balanced equation)	1  1  1   ½ 1  ½ 1	3

7.	<ul style="list-style-type: none"> <li>Acid – Hydrochloric acid/HCl</li> <li>Base – Sodium hydroxide/NaOH</li> <li>Neutral Salt</li> <li>When it forms brown crystals combined with impurities</li> <li>Drying up of seas</li> </ul>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1	3								
8.	i. $A_2O$ – Valency of group one is 1 and of oxygen is 2 ii. $AX_3$ – Valency of group 13 is 3 and of halogen is 1 iii. $AB_2$ – Valency of element A of group 2 is 2 and of element B of group seventeen is 1.	$\frac{1}{2}+\frac{1}{2}$ $\frac{1}{2}+\frac{1}{2}$ $\frac{1}{2}+\frac{1}{2}$	3								
9.	<ul style="list-style-type: none"> <li>Arteries – No valves/thick walled/carry oxygenated blood/carry blood away from heart.</li> <li>Veins – Presence of valves/thin walled/carry deoxygenated blood/carry blood towards heart.</li> <li>Capillaries – very fine/mixed blood/found in tissues/sites for material exchange.</li> </ul>	1 1 1	3								
10.	<p style="text-align: center;">             Receptor Cells of eyes/retina <math>\longrightarrow</math> Sensory Neuron <math>\longrightarrow</math> Brain / CNS  <math>\downarrow</math>              Pupil contracts / Eye lids close/blink <math>\longleftarrow</math> Eye Muscles <math>\longleftarrow</math> Motor Neuron           </p> <p>( Note: If a child writes spinal cord in place of brain give full credit to him/her )</p>	$\frac{1}{2} \times 6$	3								
11.	Plant hormones – Chemical substances which help the plant to coordinate growth and development i) Auxins/ Gibberellins ii) Cytokinins iii) Abscisic Acid / ABA iv) Auxins/ Gibberellins	1          $\frac{1}{2} \times 4$	3								
12.	<ul style="list-style-type: none"> <li>Pea Plant / Garden pea / Pisum sativum</li> <li><math>F_1</math> – All tall; <math>F_2</math>- Tall and short</li> <li>Ratio – Tall : Short 3 : 1 / 1:2:1</li> </ul> <p style="text-align: center;">OR</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Acquired Traits</th> <th style="width: 50%; text-align: center;">Inherited Traits</th> </tr> </thead> <tbody> <tr> <td>1. These traits are not transferred from one generation to the next generation</td> <td>1. These traits are transferred from one generation to the next</td> </tr> <tr> <td>2. They do not bring about change in DNA</td> <td>2. They bring about changes in DNA</td> </tr> <tr> <td>Example: Acquiring any skill</td> <td>Example: Eye colour</td> </tr> </tbody> </table> <p style="text-align: center;">( or any other relevant point and example )</p>	Acquired Traits	Inherited Traits	1. These traits are not transferred from one generation to the next generation	1. These traits are transferred from one generation to the next	2. They do not bring about change in DNA	2. They bring about changes in DNA	Example: Acquiring any skill	Example: Eye colour	1 $\frac{1}{2} + \frac{1}{2}$ 1 1 1 1	3
Acquired Traits	Inherited Traits										
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2. They do not bring about change in DNA	2. They bring about changes in DNA										
Example: Acquiring any skill	Example: Eye colour										
13.											

	<p>Rainbow – A natural spectrum of sunlight appearing in the sky after a rain shower</p> 	1																	
14.	<p>Segregation of waste; Recycling; Composting: Reducing the use of non – biodegradable material: Reuse (Any Three)</p> <p>OR</p> <p>The system where all the living organisms in an area together interact with the non – living constituents of the environment.</p> 	1x3  1	3																
15.	<ul style="list-style-type: none"> <li>• A technique used to collect and store water for future use</li> <li>• Advantages – Available resource in time of need Recharging the ground water level</li> <li>• Causes – Overuse of ground water Deforestation</li> </ul>	1  $\frac{1}{2} + \frac{1}{2}$	3																
16.	<p style="text-align: center;">Section D</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">a)</th> <th style="width: 45%;">Metals</th> <th style="width: 5%;"></th> <th style="width: 45%;">Non Metals</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Metals form basic oxides with oxygen</td> <td>1.</td> <td>Non – metals form acidic or neutral oxides with oxygen</td> </tr> <tr> <td>2.</td> <td>Metals react with dilute acids to liberate hydrogen</td> <td>2.</td> <td>Non metals do not displace hydrogen from dilute acids</td> </tr> <tr> <td>3.</td> <td>Metals form positively charged ions</td> <td>3.</td> <td>Non metals form negatively charged</td> </tr> </tbody> </table>	a)	Metals		Non Metals	1.	Metals form basic oxides with oxygen	1.	Non – metals form acidic or neutral oxides with oxygen	2.	Metals react with dilute acids to liberate hydrogen	2.	Non metals do not displace hydrogen from dilute acids	3.	Metals form positively charged ions	3.	Non metals form negatively charged		
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	by losing electrons	ions by gaining electrons	1x3	
	b) i) Metals have loosely bound electrons / Loose electrons easily / free electrons ii) Molten iron produced during reaction joins the cracked machine parts.		1 1	5
17.	<ul style="list-style-type: none"> <li>• C<sub>2</sub>H<sub>5</sub>OH, Ethanol/Ethyl alcohol</li> <li>• Good solvent; used in medicines (Any other)</li> </ul> i) $2\text{C}_2\text{H}_5\text{OH} + 2\text{Na} \rightarrow 2\text{C}_2\text{H}_5\text{ONa} + \text{H}_2$ Sodium ethoxide ii) $\text{C}_2\text{H}_5\text{OH} \xrightarrow[443\text{ K}]{\text{Hot Conc. H}_2\text{SO}_4} \text{CH}_2=\text{CH}_2 + \text{H}_2\text{O}$ Ethene OR <ul style="list-style-type: none"> <li>• CH<sub>4</sub>/Simplest hydrocarbon</li> </ul>  <ul style="list-style-type: none"> <li>• Covalent bonds               <ol style="list-style-type: none"> <li>i) No ions or charged particles are formed</li> <li>ii) Due to weak covalent bonds</li> </ol> </li> <li>• Carbon dioxide and water are produced/  <math>\text{CH}_4 + 2\text{O}_2 \longrightarrow \text{CO}_2 + 2\text{H}_2\text{O}</math> </li> </ul>		$\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 1 1 $\frac{1}{2}$ 1 1 1	5
18.	<ul style="list-style-type: none"> <li>• Pollination – Transfer of pollen from anther / stamen to stigma of the flower</li> <li>• Type of Pollination –               <ol style="list-style-type: none"> <li>a) Self pollination – Transfer of pollen from anther / stamen to stigma occurs in the same flower</li> <li>b) Cross pollination – Pollen is transferred from anther / stamen of one flower to stigma of another flower</li> </ol> </li> <li>• Agents of pollination – Wind, Water, Insects and Animals (any 2)</li> <li>• A tube grows out of the pollen grain and travels through the style, to reach the female germ cell in the ovary to cause fertilization</li> </ul> OR (a) <ul style="list-style-type: none"> <li>• Female reproductive system</li> <li>• Name of parts –</li> </ul>		1 $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$ 1 $\frac{1}{2}$	





From figure:

$$I = I_1 + I_2 + I_3$$

$$I_1 = \frac{V}{R_1}, \quad I_2 = \frac{V}{R_2}, \quad I_3 = \frac{V}{R_3}$$

$$\therefore \frac{V}{R_p} = \frac{V}{R_1} + \frac{V}{R_2} + \frac{V}{R_3}$$

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

b)  $R_1 = R_2 = 12 \Omega$        $V = 6 \text{ V}$

$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{1}{12} + \frac{1}{12}$$

$$\therefore R_p = 6 \Omega$$

$$I = \frac{V}{R_p} = \frac{6\text{v}}{6\text{v}} = 1\text{A}$$

OR

a)  $R = R_1 + R_2$   
 $= 20 \Omega + 4 \Omega = 24 \Omega$

b)  $I = \frac{V}{R}$   
 $= \frac{6\text{V}}{24 \Omega} = 0.25 \text{ A}$

c) (i) For electric lamp:  
 $V = IR$   
 $= \frac{6}{24} \times 20 = 5 \text{ V}$

(ii) For Conductor:  
 $V = IR$

1

1

1

1

 $\frac{1}{2}$  $\frac{1}{2}$ 

1

1

1

1

$$= \frac{6}{24} \times 4 = 1 \text{ V}$$

d)  $P = VI$

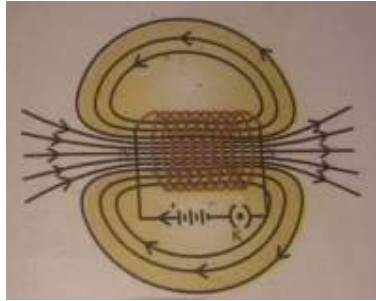
$$= 5 \text{ V} \times \frac{6}{24} \text{ A} = 1.25 \text{ W}$$

1

5

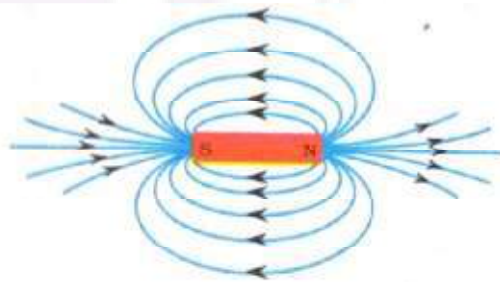
21.

- A coil of many turns of insulated copper wire wrapped closely in the shape of a cylinder
- (i)



1

ii)



1

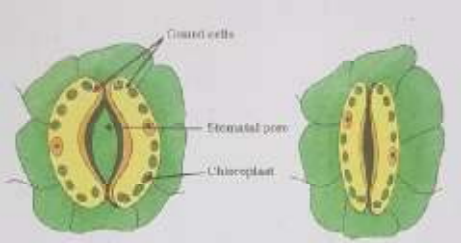
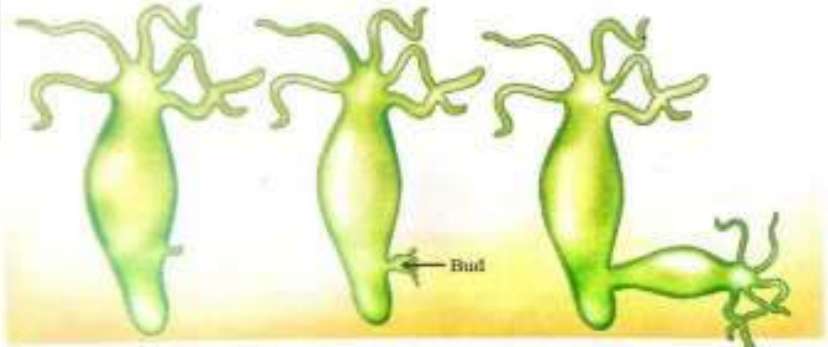
- Distinguishing features –

Solenoid	Bar Magnet
1) Field disappears on stopping the current	1) No effect of current on field.
2) Strength of the field can be changed by changing the current	2) Strength cannot be changed
3) Direction can be reversed by changing the direction of current through it.	3) Direction is fixed and cannot be reversed.

(Any two features)

2

5

22.	<p style="text-align: center;"><b>Section E</b></p> <ul style="list-style-type: none"> <li>• Test Tube A</li> <li>• It changes the colour from blue to red Hydrochloric acid turns blue litmus red.</li> </ul> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>• Brisk effervescence is produced</li> <li>• <math>\text{Na}_2\text{CO}_3 + 2\text{HCl} \longrightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2</math></li> </ul>	<p style="text-align: center;">½ ½ 1</p> <p style="text-align: center;">1 1</p>	2
23.	<ul style="list-style-type: none"> <li>• In test tube A</li> <li>• As distilled water contains no salts</li> </ul>	1 1	2
24.	<div style="text-align: center;">  <p>(Any one diagram with any two labellings)</p> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• </li> </ul> <p>Drawing in proper sequence Labelling – Bud</p> </div>	1 ½ x 2  1 1	2   2
25.	<ul style="list-style-type: none"> <li>• Substance taken: KOH</li> <li>• Function: It absorbs <math>\text{CO}_2</math> produced by the germinating seeds Consequence: The water level rises in the test tube dipped in the beaker / partial vacuum is created.</li> </ul>	½ ½  1	2