
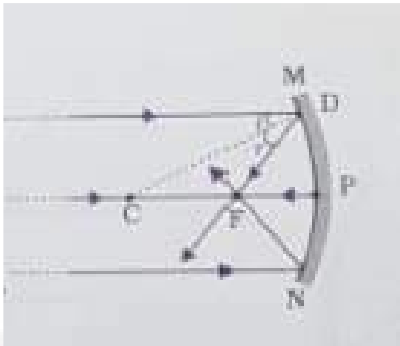



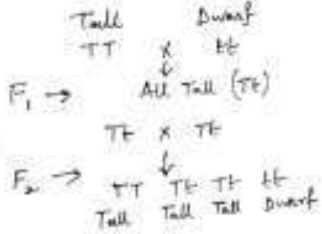


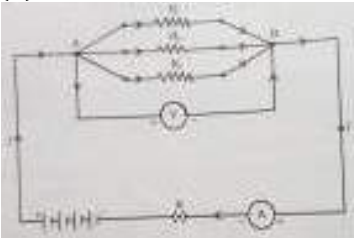
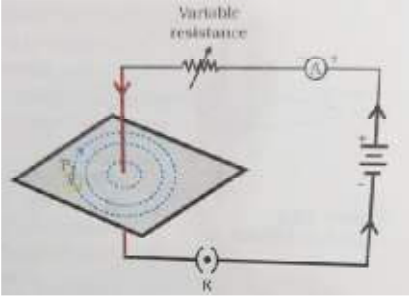
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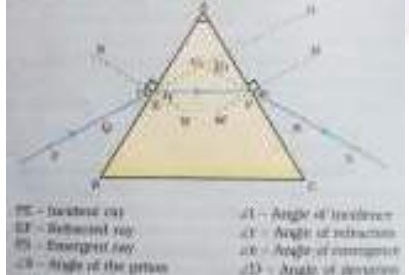
Q.No	Value Point/Expected Answer	Value	Total Mark
A 1	SECTION A		
	(i) Recharged the ground water level (ii) Brought rivers back to life	½ ½	1
A 2	High, In parallel connection, less current passes through high resistance.	½ + ½	1
A 3	SECTION B		
	Double covalent bond / covalent bond	1	
		1	
	OR		
	(i) Catenation / ability to form long chains of carbon atoms / self linking property. Reason:- very strong carbon – carbon bond	½ ½	
	(ii)Tetravalency / valency of four Reason:- All the four valencies of carbon atom are occupied with other elements.	½ ½	2
A 4	(a) It is easier to obtain a metal from its oxide as compared to sulphide and carbonate ore.	1	
	(b) Aluminium forms a thicker protective oxide layer / anodizing.	1	2
A 5	P = +5D $f = \frac{1}{P} = \frac{100}{5} = 20\text{cm}$ Nature of lens = convex (converging) Distance is 40cm (at C)	1 ½ ½	 2
A 6	SECTION C		
	(i) Blood circulatory system (ii) Lymphatic system / lymph or tissue fluid	½ ½	
	Functions of blood circulatory system (i) Transport of oxygen (ii) Transport of digested food (iii) Transport of carbon dioxide (iv) Transport of nitrogenous waste (v) Transport of salts		
	Functions of lymphatic system:- (i) Carries digested and absorbed fat (ii) Drains extra fluid from tissue (extra cellular space) back into the blood		
	Note:-Two functions of any one of the transport system to be given	1 x 2	3
A 7	Pollination:- Transfer of pollen grains from stamen/anther to stigma.	1	
	Fertilization;- Fusion of male & female gametes (or germ cells)	1	
	Site of fertilisation:- Ovary/ Ovule Product ; Zygote	½ ½	3

A 8	<ul style="list-style-type: none"> The loss of water in the form of vapour from the aerial parts/leaves/stems is known as transpiration. Functions:- <ol style="list-style-type: none"> It helps in the absorption and upward movement of water movement of dissolved minerals from root to leaves. It helps in the temperature regulation or cooling of the plant. <p style="text-align: right;">(Any two points)</p> <p style="text-align: center;">OR</p> <p>(a) The transport of soluble products of photosynthesis (food or glucose) from one part to the other parts of the plant. To provide food to all parts of the plant.</p> <p>(b) Root, fruits, seeds and other growing organs/parts of the plant. (any two)</p>	1 1+1 1 1 ½ + ½	3
A 9	<p>(a) Move the mirror/paper to focus the rays at one point (b) Concave mirror (c) Yes, distance between mirror and focal point gives approximate focal length.</p> <div style="text-align: center;">  </div> <p style="text-align: center;">OR</p> $\frac{1}{v} - \frac{1}{u} = \frac{1}{f} \quad \therefore \frac{1}{v} = \frac{1}{f} + \frac{1}{u}$ $\therefore \frac{1}{v} = \frac{1}{12} + \frac{1}{(-18)}$ $\therefore v = 36\text{cm}$ $m = \frac{v}{u} = \frac{h'}{h} \quad \therefore m =$ $\Rightarrow \frac{36}{-18} = \frac{h'}{10}$ $\Rightarrow h' = -20\text{cm (size of the image)}$ <p>Nature of image – Real and inverted</p>	½ ½ ½ + ½ ½ + ½ ½ 1 ½ ½ ½	3
A 10	<p>Consequences :-</p> <ol style="list-style-type: none"> Cause air pollution The acidic oxides lead to acid rain High concentration of green house gas (CO₂) and its effect Global Warming <p style="text-align: right;">(any 3 points)</p>	½ x 3	

	<p>Steps to minimize the pollution</p> <p>(i) Use of alternate source of energy</p> <p>(ii) Use of various devices to reduce emission of harmful gases.</p> <p>(iii) By increasing efficiency of combustion process</p> <p style="text-align: right;">(or any other)</p>	<p>½</p> <p>½</p> <p>½</p>	3																		
A 11	<p>It shields the surface of the earth from the UV radiation from the sun.</p> <p>$O_2 \xrightarrow{UV} O + O$</p> <p>$O_2 + O \rightarrow O_3$ {or description of this process in words}</p> <p>Chloro Fluoro Carbons (CFC's)</p> <p>Reduce the use of CFC's by (a) minimizing the leakage through air conditioners and refrigerators / finding substitute chemicals that are ozone friendly.</p>	<p>1</p> <p>1</p> <p>½</p> <p>½</p>	3																		
A 12	<p>(a) The process of diluting an acid is highly exothermic , and on the addition of acid to the water the excess heat is absorbed by water.</p> <p>(b) Because HCl does not form H^+/H_3O^+ ions in dry condition.</p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • When electricity is passed through an aqueous solution of sodium chloride (brine) • Chlor – alkali process • X - Cl_2 • Y = $CaOCl_2$ • $2NaCl_{(aq)} + 2H_2O_{(l)} \rightarrow 2NaOH_{(aq)} + Cl_{2(g)} + H_{2(g)}$ • $Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$ 	<p>1</p> <p>1</p> <p>1</p> <p>½</p> <p>½</p> <p>½</p> <p>½</p> <p>½</p>	3																		
A 13	<p>(a) Decomposition / Thermal decomposition, The gas X is NO_2 or (nitrogen dioxide)</p> <p>(b) $2Cu(NO_3)_2 \xrightarrow{Heat} 2CuO + 4NO_2 + O_2$</p> <p>(c) Range less than 7 (or 0-----6.9pH)</p> <p>Note: For (b) ½ mark for equation and ½ mark for balancing the equation</p>	<p>½</p> <p>½</p> <p>1</p> <p>1</p>	3																		
A 14	<table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 33%; text-align: center;">Alkane</th> <th style="width: 33%; text-align: center;">Alkene</th> <th style="width: 33%; text-align: center;">Alkyne</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Saturated Hydrocarbon With c-c Single Bond</td> <td style="text-align: center;">Unsaturated Hydrocarbon with double bond in c=c</td> <td style="text-align: center;">Unsaturated Hydrocarbon with triple bond in c≡c</td> </tr> <tr> <td colspan="3" style="text-align: right;">(or any other)</td> </tr> <tr> <td>Alkane</td> <td></td> <td></td> </tr> <tr> <td>2 structural isomers</td> <td></td> <td></td> </tr> <tr> <td colspan="3" style="text-align: center;">  </td> </tr> </tbody> </table>	Alkane	Alkene	Alkyne	Saturated Hydrocarbon With c-c Single Bond	Unsaturated Hydrocarbon with double bond in c=c	Unsaturated Hydrocarbon with triple bond in c≡c	(or any other)			Alkane			2 structural isomers						<p>½ x 3</p> <p>½</p> <p>½ + ½</p>	3
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A 15	<ul style="list-style-type: none"> • Metal oxides showing both acidic and basic nature 	½																			

	<ul style="list-style-type: none"> Example: $\text{Al}_2\text{O}_3 / \text{ZnO}$ (or any other) <p>(i) $\text{Al}_2\text{O}_3 + 6\text{HCl} \rightarrow 2\text{AlCl}_3 + 3\text{H}_2\text{O}$ $\text{Al}_2\text{O}_3 + 2\text{NaOH} \rightarrow 2\text{NaAlO}_2 + \text{H}_2\text{O}$</p> <p>(Or any other example of equations)</p>	$\frac{1}{2}$ 1 1	3
A 16	<p style="text-align: center;">SECTION D</p> <p>(a) The trait which expresses itself in F_1 (first) generation after crossing contrasting (opposite) traits is known as dominant character (trait).</p> <p>Recessive Trait: The trait which is not expressed itself in F_1(first) generation after crossing contrasting (opposite) trait.</p> <p>(b) Yes</p>  <p style="text-align: right;">(Or can be explained in words also)</p>	1 1 1 2	5
A 17	<p>(a)</p> <ul style="list-style-type: none"> Iodine is essential for functioning of thyroid / formation of thyroxine hormone Disease is Goitre Swollen neck <p>(b) Impulse travels from dendrite to cell body, then along the axon to its end. At the end some chemicals are released which fill the gap of synapse, and starts a similar electrical impulse to another neuron and the impulse further travel in the body. (Award marks if attempted as a flow chart also)</p> <p style="text-align: center;">OR</p> <p>The movement/response of part of plant (root) towards water Experiment:- (i) Soak the seeds in water overnight (ii) Place moist cotton in a perforated petridish (iii) Put the soaked seeds in the petridish & place it on a beaker (iv) Roots pass through pores and grow downwards. (v) After sometime roots will bend towards base of petridish having moisture.. (Or Any other relevant experiment)</p>	1 1 1 2 1 1 1 1	5
A 18	<p>(a)</p> <ol style="list-style-type: none"> Join the three resistors of different values in series Connect them with battery, an ammeter and plug key. Plug the key and note the ammeter reading Change the position of ammeter to anywhere in between the resistors and note the ammeter reading each time. The ammeter reading will remain same everytime. Therefore when resistors are connected in series same current flows through all resistors, when it is connected to a battery. <p style="text-align: center;">Note: If explained with the help of diagram give full credit</p> <p>(b) Total resistance of the circuit = $R = R_1 + R_2 + R_3 = 5 + 10 + 15 = 30 \text{ ohm}$</p>	$\frac{1}{2} \times 5$ 1 1	

	<p>Potential difference across the circuit / By ohm's law $V = IR$ or $I = \frac{V}{R} = \frac{30V}{30ohm} = 1A$ Potential difference across 15 ohm Resistor = $1A \times 15 ohm = 15 volt$</p> <p style="text-align: center;">OR</p> <p>(a) Total current $I = I_1 + I_2 + I_3$ Let R_p be the equivalent resistance of R_1, R_2, R_3. Then the total current $I = \frac{V}{R_p}$</p> <p>(i) On applying ohm's law for each R_1, R_2, R_3</p> $I_1 = \frac{V}{R_1}, I_2 = \frac{V}{R_2}, I_3 = \frac{V}{R_3}$ $\therefore I = V \left(\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \right) = \frac{V}{R_p}$ $\therefore \frac{1}{R_p} + \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ <p>(b)</p>  $\frac{1}{R_p} = \frac{1}{20} + \frac{1}{20} = \frac{2}{20} = \frac{1}{10}$ <p>$\Rightarrow R_p = 10 ohms$</p> <p>Equivalent resistance of the network = $R_{eq} = R_1 + R_p = 10 + 10 = 20 ohm$</p>	<p>1/2</p> <p>1</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1/2</p> <p>1</p> <p>1</p>	<p>5</p>
<p>A 19</p>	 <p style="text-align: right;">Diagram 1 1/2 and direction 1/2</p> <p>Statement of right hand thumb rule.</p> <p>The magnetic field strength decreases with increase of distance from the current carrying conductor.</p> <p>Reason: There is inverse relation between field strength and distance from current carrying conductor.</p> <p style="text-align: center;">Note: Direction of magnetic field should be in accordance with direction of current</p>	<p>1+1</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p>

	<ul style="list-style-type: none"> • BD_3 	1	5
A 22	<p style="text-align: center;">SECTION - E</p> <p>(i) Size of the leaf peel should be very small. (ii) Put peel immediately in the drop of water. (iii) Place cover slip carefully to avoid the air bubbles. (iv) It should not be overstained. (v) No fold in the peel</p> <p style="text-align: right;">(Any four)</p>	$\frac{1}{2} \times 4$	2
A 23	<p>(i) Soaking of seeds (ii) Emergence of radicle (iii) Splitting of cotyledons (iv) Emergence of plumule</p> <p style="text-align: center;">OR</p> <p>(i) Elongation of nucleus (ii) Constriction appears due to the division of the cytoplasm</p>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2
A 24	<p>(a) \angle least count of ammeter = 10 mA \angle least count of Voltmeter = 0.1 V</p> <p>(b) $\frac{2.4}{0.25} = 9.6 \text{ ohm}$ (250mA = 0.25A)</p>	$\frac{1}{2} + \frac{1}{2}$	2
A 25	 <p>Labelling</p> <ul style="list-style-type: none"> • Angle of refraction (r_1) • Angle of emergence (e) • Lateral displacement (ML) <p style="text-align: center;">OR</p>  <p>Labelling of $\angle i + \angle e + \angle r$ & $\angle D$</p>	$\frac{1}{2}$ $\frac{1}{2} \times 3$ $\frac{1}{2} \times 4$	2
A 26	<ul style="list-style-type: none"> • Brisk effervescence of CO_2 evolved. 	1	

	<ul style="list-style-type: none"> $\text{CH}_3\text{COOH} + \text{NaHCO}_3 \rightarrow \text{CH}_3\text{COONa} + \text{CO}_2 + \text{H}_2\text{O}$ 	1	2
A 27	<ul style="list-style-type: none"> The pH value of water given is incorrect. Its correct value is 7 it is neutral in nature. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> There will be no reaction in the beakers having Fe strip & Cu strip. The solution having Al & Zn strip will show reaction / the solution of FeSO_4 having Al & Zn strip will become colourless. 	1+1	2

