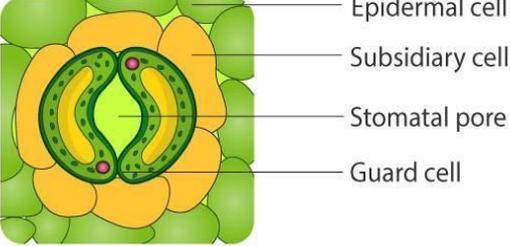


MARKING SCHEME

	Section – A	Marks																					
1.	C. Glycogen	1																					
2.	D. Urine is more diluted	1																					
3.	B. Pituitary gland	1																					
4.	C. Cerebrum	1																					
5.	A. Round and yellow	1																					
6.	D. Hawk	1																					
7.	B. Population of frog will decrease	1																					
8.	A – Both A and R true, R explains A	1																					
9.	B – Both A and R true, but R not correct explanation.	1																					
10.	 <p>Guard cells regulate opening by turgidity.</p>	1																					
11.	<p>A (i) Vein. (ii) Pulmonary vein</p> <p style="text-align: center;"><b>OR</b></p> <p><b>B</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Feature</th> <th>Arteries</th> <th>Veins</th> </tr> </thead> <tbody> <tr> <td>Direction of blood flow</td> <td>Carry blood away from the heart</td> <td>Carry blood towards the heart</td> </tr> <tr> <td>Type of blood</td> <td>Mostly carry oxygenated blood (except pulmonary artery)</td> <td>Mostly carry deoxygenated blood (except pulmonary vein)</td> </tr> <tr> <td>Wall thickness</td> <td>Thick, elastic, and muscular walls to withstand high pressure</td> <td>Thin and less muscular walls since blood pressure is low</td> </tr> <tr> <td>Lumen (inner space)</td> <td>Narrow lumen</td> <td>Wide lumen</td> </tr> <tr> <td>Blood pressure</td> <td>Blood flows under high pressure</td> <td>Blood flows under low pressure</td> </tr> <tr> <td>Valves</td> <td>Valves absent (except at the heart's base)</td> <td>Valves present to prevent backflow</td> </tr> </tbody> </table>	Feature	Arteries	Veins	Direction of blood flow	Carry blood away from the heart	Carry blood towards the heart	Type of blood	Mostly carry oxygenated blood (except pulmonary artery)	Mostly carry deoxygenated blood (except pulmonary vein)	Wall thickness	Thick, elastic, and muscular walls to withstand high pressure	Thin and less muscular walls since blood pressure is low	Lumen (inner space)	Narrow lumen	Wide lumen	Blood pressure	Blood flows under high pressure	Blood flows under low pressure	Valves	Valves absent (except at the heart's base)	Valves present to prevent backflow	<p>1 1</p> <p style="text-align: center;">Or</p> <p>1 1</p>
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12.	<p>A. Man at top because he consumes both plants and animals. No natural predator</p> <p style="text-align: center;"><b>OR</b></p> <p>B. Even biodegradable wastes in excess disturb environment in following ways: -</p> <ul style="list-style-type: none"> <li>● Depletion of Oxygen in Water</li> <li>● Water Pollution</li> <li>● Soil Pollution</li> <li>● Air Pollution (Any two points)</li> </ul>	<p>1+1 Or 1+1</p>									
13.	<p>(i):- Reflex action: Involuntary, rapid response.</p> <p><b>Spinal reflex arc:</b></p> <p>The diagram shows a reflex arc starting with a stimulus of heat. This is detected by a receptor (heat detectors in skin of hand). Sensory neurons carry the signal to the spinal cord. Motor neurons then carry the signal to an effector (muscles of arm), which causes the response of lifting the hand.</p>	<p>1 2</p>									
14.	<p>(i) No, mother's genes don't determine sex. (ii) Sex depends on sperm X/Y chromosome .</p> <p>The diagram illustrates sex determination. It shows two mother's ova (X) and two father's sperms (X and Y). The combination of X from mother and X from father results in a female child (XX). The combination of X from mother and Y from father results in a male child (XY).</p>	<p>½+½ 2</p>									
15.	<p>(i)- Aerobic respiration (ii) – Lactic acid (iii)- Mitochondria (iv) – ATP used for all cellular activities). OR (v) – Ethanol + CO<sub>2</sub></p>	<p>1 1 1 1 1</p>									
16.	<p>A (i) B – Ovary (ii) A– Fallopian tube. It carries the egg (ovum) released from the ovary towards the uterus. Fertilization of egg by sperm usually takes place in the fallopian tube. Provides the passage for the zygote (fertilized egg) to move to the uterus.(Any one point)</p>	<p>1 1 1</p>									

	(iii) C- Uterus. It is the site of implantation of the fertilized egg (zygote). Provides nourishment and protection to the developing embryo/foetus through placenta.	1 1
	<b>OR</b>	
	B. (i):Reproduction in Yeast occurs by budding; it allows rapid population increase.	1
	ii) Potato and Bryophyllum reproduce by vegetative propagation; new plants grow from eyes or leaf margins.	1
	(iii) Amoeba divides in any plane; Leishmania divides in a fixed plane.	1
	(iv) If only asexual reproduction existed, no variation would occur; species could not adapt well.	1
	(v) Artificial vegetative propagation (cutting, grafting, layering) is useful for farmers to produce large numbers, preserve characters.	1
	<b>SECTION B</b>	
17.	A. Slaked lime reacts with CO <sub>2</sub>	1
18.	B. Double displacement reaction	1
19.	B. Red	1
20.	D. Production of bubbles due to CO <sub>2</sub>	1
21.	D. Soda (pH 3.3)	1
22.	C. Mg > Al > Zn > Fe	1
23.	A. Mercury	1
24.	A – Both A and R true, R correct explanation of A	1
25.	(i) Sodium is manufactured by electrolysis of molten NaCl	1
	(ii) Major byproduct: Chlorine gas.	1
26.	(i) Oxidising agent: O <sub>2</sub> ; Reducing agent: Mg.	1
	(ii) Blue crystalline substance is CuSO <sub>4</sub> ·5H <sub>2</sub> O; reaction is decomposition.	1
	Equation: CuSO <sub>4</sub> ·5H <sub>2</sub> O → CuSO <sub>4</sub> + 5H <sub>2</sub> O.	1
27.	A Extraction: Copper sulphide ore → roasting → CuO → reduction → Cu. Thermite reaction (Al + Fe <sub>2</sub> O <sub>3</sub> → Fe + Al <sub>2</sub> O <sub>3</sub> ) used for welding joints.	2 1
	<b>OR</b>	
	B (i) 4Al + 3O <sub>2</sub> → 2Al <sub>2</sub> O <sub>3</sub>	1
	(ii) 2K + 2H <sub>2</sub> O → 2KOH + H <sub>2</sub>	1
	(iii) 3Fe + 4H <sub>2</sub> O → Fe <sub>3</sub> O <sub>4</sub> + 4H <sub>2</sub>	1
28.	(i) Sodium hydroxide	1
	(ii) basic	1
	(iii) Correct equation and Neutralisation reaction	2
	<b>OR</b>	

	(iii) Correct explanation	2
29.	<p>A (i) Carbon has 4 valence <math>e^-</math>, needs to gain/lose 4 <math>e^-</math>; energy barrier too high → forms covalent bonds.</p> <p>(ii) Ethane and Ethyne</p> <p>(iii). Correct structures</p> <p style="text-align: center;"><b>OR</b></p> <p>B (i) Ethanol; <math>C_2H_5OH</math></p> <p>(ii) Hydrogen gas; <math>2CH_3CH_2OH + 2Na \rightarrow 2CH_3CH_2ONa + H_2</math>.</p> <p>(iii) Formation of ethanoic acid</p> <p>(iv) Ester; any one use</p>	<p>2</p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p>1+1</p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p>1+1</p> <p>1</p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p>
	<b>Section C</b>	
30.	A. Diverging lens concave	1
31.	B. To regulate the amount of light entering the eye	1
32.	B – Both A and R are true, and R is not the correct explanation of A	1
33.	<p>Absolute RI: ratio of speed of light in vacuum to speed in medium.</p> <p>Relative RI: ratio of speed of light in medium 1 to medium 2.</p>	1+1
34.	<p>Domestic circuits are always connected in parallel because:</p> <p>Independent control – Each appliance can be switched on or off without affecting others.</p> <p>Equal voltage – All appliances receive the same voltage as the mains supply (220 V in India).</p> <p>Safety – If one appliance gets damaged or short-circuits, the rest continue working safely.</p> <p>Efficiency – Parallel connection prevents overloading and allows appliances of different power ratings to work properly. (Any two correct points).</p> <p style="text-align: center;"><b>OR</b></p> <p><b>Joule's law of heating</b></p> <p>Joule's law states that the heat produced in a conductor is directly proportional to:</p> <p>The square of current</p> <p>The resistance of the conductor</p> <p>The time for which current flows</p> <p><math>H = I^2Rt</math></p>	<p>1+1</p> <p>1</p> <p>1</p>
35.	<p>(i) Correct diagram</p> <p>(ii) Blue colour</p>	<p>2</p> <p>1</p>

