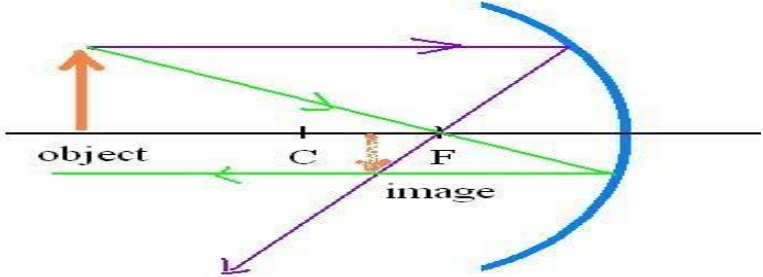


MARKING SCHEME

SAMPLE PAPER 1

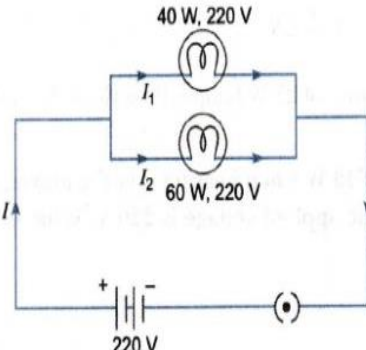
CLASS X (SCIENCE)

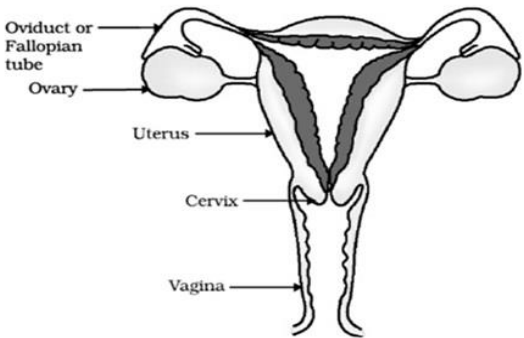
No .	Value	Marks	Total
1	-1	1	1
2	Any two devices, electric heater, electric oven, electric bulb etc.	1	1
3	5 Ω OR 4	1	1
4	B, A, C OR C, A, B	1	1
5	a) Red b) violet	1	1
6		1	1
7	Blue colour of copper sulphate changes to Green reddish brown deposit of copper OR colourless and odourless gas is evolved hydrogen is formed	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	1
8	NaHCO_3 Sodium hydrogen carbonate	$\frac{1}{2}$ $\frac{1}{2}$	1
9	Terrestrial ecosystem Aquatic ecosystem,-Specific examples also	$\frac{1}{2}$ $\frac{1}{2}$	1
10	Sepals/calyx, petals/corolla, Thalamus/receptacle (any two)	$\frac{1}{2}$ $\frac{1}{2}$	1
11	Role of acid in the stomach Kills bacteria (germs) Makes the medium acidic or activates pepsin (protein digesting enzyme) OR breaking down the fat into smaller globules making it easy for the enzymes to act and digest the food. helps in digestion of fats into fatty acids and glycerol which can be easily absorbed by small intestine.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	1
12	Process of fusion of male gamete with the female gamete Fallopian tube or oviduct OR It breaks down into smaller fragments and each fragment grows into a mature spirogyra /Fragmentation	$\frac{1}{2}$ $\frac{1}{2}$ 1	1
13	MCQ (c) A colourless gas liberated in test tube (A)	1	1
14	Assertion (A) and Reason(R) (c) Assertion is correct reason wrong	1	1
15	(iii) A is true but R is false.	1	1

	OR (i) Both A and R are true and R is the correct explanation of the Assertion.		
16	(iv) A is false but R is true.	1	1
17	(i) d (ii) c (iii) a (iv) b (v) d (any four)	1 1 1 1 1	4
18	1. d 2. b 3. b 4. a 5. a (any four)	1 1 1 1 1	4
19	(a) Fluorine (c) Lithium > Beryllium > Boron > Carbon (c) Decrease in atomic size (b) Fluorine (c) Electronegativity increases along the period due to decrease in atomic size (any four)	1 1 1 1 1	4
20	i. (c) A constant incline since 2006 to 2018. (ii) (a) It is at the top of the food chain. (iii) (c) They keep in check the population of large mammals like deer in check in the jungle. (d) This was due to extensively hunting and poaching which led to reduced population. (c) Because the tigers exert a control on the large herbivore mammals, and maintaining a balance between the herbivores and the producers. (any four)	1 1 1 1 1	4
	Section B SHORT ANSWER QUESTIONS OF 2 MARKS		
21	The scattering of light by colloidal particles there by making the path of the light visible. Any one example	1 1	2
22	<ul style="list-style-type: none"> The incident ray refracted ray, and the normal to the interface of two media at the point of incidence all lie on the same plane. The ratio of the sine of the angle of incidence to the sine of the angle of refraction is a constant. This is also known as Snell's law of refraction. $\sin i / \sin r = n$ whereby n is the refractive index of the denser medium.	1 1	2
23	plaster of Paris $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$	$\frac{1}{2}$ $\frac{1}{2}$	2

	$\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O} + 1 \frac{1}{2} \text{H}_2\text{O} \rightarrow \text{CaSO}_4 \cdot 2 \text{H}_2\text{O}$ (If 1 ½ not mentioned reduce ½ mark) OR B A B is acidic acid PH value is less than 7 it can turn blue Litmus red A is basic as its PH value is more than 7 and hence it can turn phenolphthalein to Purple pink.	1 ½ ½ ½ ½	
24	High melting and boiling point can conduct electricity in molten or in solution state (Any two properties)	1 1	2
25	Zygote into embryo Ovule into seed Ovary into fruit Petals shrivel and fall	½ ½ ½ ½	2
26	Nephrons Urine production is regulated by i. Amount of excess water in the body ii. amount of dissolved wastes that needed to be removed or excreted OR Cows have a longer small intestine for the digestion of cellulose, whereas meat is easier to digest hence have a shorter small intestine.	1 ½ ½ 1 1	2
	SHORT ANSWER QUESTIONS OF 3 MARKS		
27	i) Fine size particles in the atmosphere is more effective in scattering colours of lower wavelengths. ii) Planets are much closer to the earth and are seen as extended sources. So, a planet may be considered as a collection of a large number of point-sized light sources. Although light coming from individual point-sized sources flickers but the total amount of light entering our eye from all the individual point-sized sources average out to be constant. Thereby, planets appear equally bright and there is no twinkling of planets. iii) The dispersion of light does occur in a rectangular glass slab during the first interface of air and glass slab. They travel a very small distance in the glass slab to meet the second interface. But, after being refracted through the second interface, all colours start moving parallel to each other which recombine together to give white light.	1 1 1	3
28	i. White colour silver chloride changes into grey silver ii. $2\text{AgCl} \xrightarrow{\text{Sunlight}} 2\text{Ag} + \text{Cl}_2$	1 2 (1/2 marks to be reduced if the equation is not	3

		balance d)																							
29	a) valence electrons Six valency - 2 b) H ₂ X c) sulphur non-metallic	1/2+1/2 1 1/2 1/2	3																						
30	X- Na, Y- NaOH and Z- H ₂ 2Na + 2H ₂ O → 2NaOH + H ₂	1/2 1/2 1/2 1 1/2 (1/2 marks to be reduced if the equation is not balanced)																							
31	<p style="text-align: center;">Figure 6.8 Break-down of glucose by various pathways</p> <p>Each correct path or explanation-1 mark</p>	1 1 1	3																						
32	(i) 5J (ii) 1. Stop CFC release in the atmosphere 2. Banning usage of nitrogen monoxide 3. Reduce usage of personal vehicle and air conditioners, etc. (any 2)	1 2	3																						
33	<table border="1" style="width: 100%;"> <tr> <td>Aerobic respiration</td> <td>Anaerobic respiration</td> </tr> <tr> <td>needs oxygen</td> <td>Does not</td> </tr> <tr> <td>carbon dioxide, water, and ATP are produced</td> <td>lactic acid, ethanol, and ATP are created</td> </tr> <tr> <td>Mitochondria</td> <td>Yeast cells or muscle cells</td> </tr> <tr> <td colspan="2">Any three valid differences</td> </tr> <tr> <td colspan="2">OR</td> </tr> <tr> <td>Arteries</td> <td>Veins</td> </tr> <tr> <td>Distribute oxygenated blood from heart to body parts</td> <td>Distribute deoxygenated blood from body parts to heart</td> </tr> <tr> <td>Thick walls, narrow lumen</td> <td>Thin walls wide lumen</td> </tr> <tr> <td>Valves absent</td> <td>Valves present</td> </tr> <tr> <td colspan="2">(any 3 valid differences)</td> </tr> </table>	Aerobic respiration	Anaerobic respiration	needs oxygen	Does not	carbon dioxide, water, and ATP are produced	lactic acid, ethanol, and ATP are created	Mitochondria	Yeast cells or muscle cells	Any three valid differences		OR		Arteries	Veins	Distribute oxygenated blood from heart to body parts	Distribute deoxygenated blood from body parts to heart	Thick walls, narrow lumen	Thin walls wide lumen	Valves absent	Valves present	(any 3 valid differences)		1 1 1 1 1 1 1 1	3
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(any 3 valid differences)																									
Long answer type 5 marks																									
34	a) Circuit diagram for parallel combination. Derivation- Steps	1 1 + 1	5																						

	<p>b) (i) 2Ω - all three 6Ω resistors in parallel (either numerically or by using diagram)</p> <p>(ii) 6Ω - two 6Ω resistors in parallel with the third 6Ω resistor.</p> <p style="text-align: center;">OR</p> <p>(a) Statement of Joules law of heating Derivation -steps</p> <p>(b)</p> <p>(i)</p>  <p>(ii) Current drawn by 40 W bulb, $I_1 = \frac{P}{V} = \frac{40}{220} \text{ A} = \frac{2}{11} \text{ A} = 0.18 \text{ A}$ </p> <p>Current drawn by 60 W bulb, $I_2 = \frac{P}{V} = \frac{60}{220} = \frac{3}{11} \text{ A} = 0.27 \text{ A}$ </p> <p>Total current drawn from circuit, $I = I_1 + I_2 = 0.18 \text{ A} + 0.27 \text{ A} = \mathbf{0.45 \text{ A}}$ </p>	<p>1</p> <p>1</p> <p>1</p> <p>1+1/2</p> <p>1</p> <p>1/2</p> <p>1/2</p> <p>1/2</p>	
35	<p>(i)(a) Mild base</p> <p>(b) React with acid to produce carbon dioxide which extinguishes fire</p> <p>(c) On heating releases carbon dioxide which makes the cake and bread soft and fluffy</p> <p>(ii) Baking soda on heating produces sodium carbonate which on recrystallisation with water gives washing soda</p> $\text{NaHCO}_3 \longrightarrow \text{Na}_2\text{CO}_3 + 10 \text{H}_2\text{O} \longrightarrow \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ <p style="text-align: center;">OR</p> <p>a) Sodium Hydroxide ; NaOH</p> <p>b) Sodium chloride solution on electrolysis produces hydrogen at the cathode and chlorine at the anode and Sodium Hydroxide is left Behind</p> $2\text{NaCl} + 2\text{H}_2\text{O} \xrightarrow{\text{electricity}} \text{H}_2 + \text{Cl}_2 + 2\text{NaOH}$ <p>c) neutralization reaction</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1/2 + 1/2</p> <p>1</p> <p>1</p> <p>1</p> <p>(1/2 marks to be reduced if the equation</p>	5

	d)Dilution of an acid is an exothermic reaction therefore if water is added to acid because of the heat generated the mixture may splash out and cause burns.	is not balanced) 1	
36	<p>a) Labelled diagram of human female reproductive system</p>  <p>a) i) Ovaries ii) Vagina iii) Uterus</p> <p>b) i) uterus lining becomes thick and spongy for nourishing the embryo if fertilisation happens. ii) if fertilisation does not take place the lining breaks and moves out of the vagina in the form of blood and mucous. This cycle repeats every month and is known as menstruation. It last for about 2 to 8 days.</p>	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 2	5

Prepared by : The Department of Science 2020 -21

Checked by :HOD – SCIENCE