OSDAV Public School, Kaithal

Half yearly Exams (2024-25) **SET- A**

Class : X

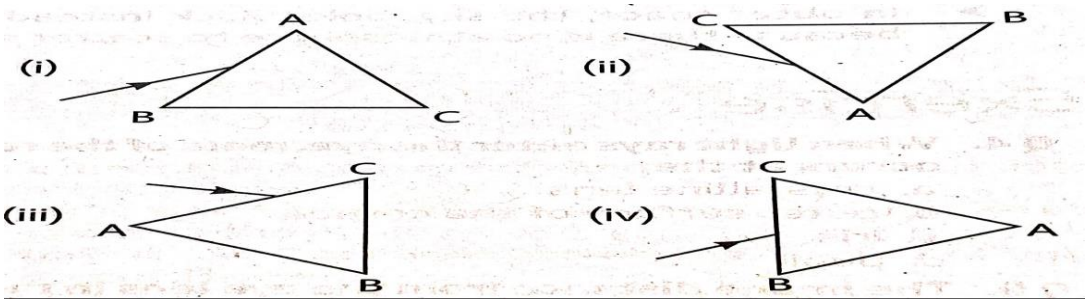
Subject : Science

Time: 3 Hrs . **M.M. :80**

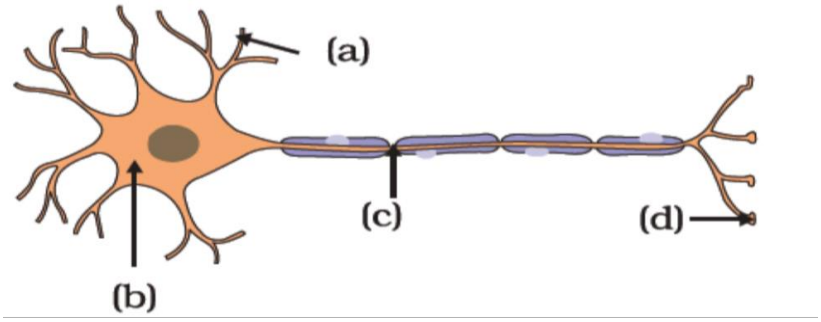
General Instructions:

I. All questions are compulsory.

Q.N.	Section A	Marks
1	Select a pair of olfactory indicators from the following: (a) Clove oil and vanilla essence. (b) Onion and turmeric (c) Clove oil and litmus solutions . (d) Vanilla and methyl orange	**1**
2	Hydronium ions are formed by the reaction between (a)Sodium hydroxide and water. (b)Calcium chloride and water, (c)Hydrogen chloride gas and water, (d)Ethanol and water	**1**
3	What is the product of the reaction between sulphuric acid and calcium carbonate? (a) $CaCl_2$,CO_2,H_2O (b) $CaSO_4$,CO_2,H_2O (c) $CaCO_3$, CO_2,H_2O (d) $Ca(NO_3)_2$ CO_2,H_2O	**1**
4	To balance the following chemical equation, the value of the coefficient, XY and Z must be respectively $xCu(NO_3)_2$ ——->> $yCuO+ zNO_2+ O_2$ (a)4,2,2. (b) 4,4,2. (c) 2,2,4. (d) 2,4,2	**1**
5	Which of the following statements is correct about an aqueous solution of an acid and of a base ? (1) Higher the pH, stronger the acid. (ii) Higher the pH, weaker the acid (iii) Lower the pH, stronger the base. (iv) Lower the pH, weaker the base (a) (i) and (iii). (b) (ii) and (iii). (c) (1) and (iv). (d) (ii) and (iv)	**1**
6	A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the top. (a) Plane, convex and concave. (b) Convex, concave and plane (c) Concave, plane and convex. d) Convex, plane and concave	**1**
7	Refractive indices of four media A,B,C and D are respectively 1.47,1.52,1.44 and 1.33.In which of these will the light travel fastest? (a) A (b) B (c) C (d) D	**1**
8	Which of the following phenomena of light are involved in the formation of a rainbow? (a). Reflection, refraction and dispersion (b.)Refraction, dispersion and total internal refraction (c.) Refraction, dispersion and internal reflection (d.) Dispersion, scattering and total internal reflection	**1**
9	The expressions that relate (i) Q, I and t and (ii) Q, V and W respectively are (Here the symbols have their usual) : (a) (i) I = Q/t. (ii) W = V/Q. (b) (i) Q = Ixt (ii) W =.VxQ (c) (i) Q=I/t. (ii). V= W/Q. (d). (i) I = Q/t (ii) Q=V/W	**1**
10	The maximum resistance which can be made using 5 resistors each of ⅕ ohm is : (a) 2Ω. (b) 2.5Ω. (c) 1 Ω. (d) 8 Ω	**1**
11	**Assertion (A):**When the length of a wire is doubled, then its resistance also gets doubled. **Reason (R):** Because the resistance of a wire is directly proportional to its length.	**1**

12	A prism ABC(BC as base) is placed in different orientations. An arrow beam of light is incident on the presentation shown in the figure below. In which of the following diagrams after dispersion, the third colour from the top of the spectrum correspond to the colour of sky?  	**1**
	Directions: In the following questions, two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below : (a) Both (A) and (R) are true and (R) is the correct explanation of the assertion. (b) Both (A) and (R) are true but (R) is not the correct explanation of the assertion. (c) (A) is true but (R) is false. (d) (A) is false but (R) is true.	
13	**Assertion (A):** when an iron iron rod is dipped into a solution of copper sulphate, copper is displaced. **Reason(R):** Iron is less reactive than copper.	**1**
	Section B	
14	Give reason for following (a)Why acids do not conduct electricity in dry form? (b)What happens when we add drop by drop water in acid or base?	**2**
15	Write the relationship between electrical resistance and electrical resistivity for a material of conductor. Hence derive the SI unit of electrical resistivity.	**2**
16	Show by diagram how you would connect the three resistors each of resistance six ohm in series with the help of battery,plug key ,ammeter and voltmeter so that the combination has a resistance of nine ohm.	**2**
17	Give reason for following: a) Convex mirror is used as a rear view mirror .b) Concave mirrors are used in solar furnaces.	**2**
18	A convex lens of focal length 20 cm can produce a magnified virtual as well as real image. Is this a correct statement? If yes, where shall the object be placed in each case for obtaining these images?	**2**
	Section C	
19	Define dispersion of light and draw a diagram for it. What is the cause of dispersion?	**3**
20	A chemical compound X is used as a soda acid fire extinguisher. After adding a small amount of acid, it is used in the kitchen for making the cake fluffy and spongy. (a)Identify the compound, X.Write the chemical equation of formation of X. (b)Why does food become fluffy or spongy after adding it? Also write the reaction involved .	**3**
21	On adding a drop of barium chloride solution to an aqueous solution of sodium sulphate, white precipitate is obtained. (a)Write a balanced chemical equation of the reaction .. (b)What other name can be given to this precipitation reaction. (c) Define precipitation reaction.	**3**

	Section D	
22	A metal nitrate 'A' on heating gives yellowish brown coloured metal oxide along with brown gas 'B' and a colourless gas 'C'. Aqueous solution of 'A' on reaction with potassium iodide forms a yellow precipitate of compound 'D'. (a) Identify 'A', 'B', 'C' and 'D'. (b) identify the types of both the reactions. (c)Also write both the reactions.	**5**
23	(a)Draw a diagram by using convex lens when the object is placed between optical center and focus. (b)Find the power of a convex lens which forms a real and inverted image of magnification -1 when the object is at 30 cm from the optical center. (c) Define the following in case of a concave mirror. (i)Focus (ii) Pole	
	Section E	
24	Seawater contains many salts dissolved in it. Sodium chloride is separated from these salts. Deposits of solid salt are also found in several parts of the world. The common salt is an important raw material for various materials of daily use. (i)Why is electrolysis of brine called Chlor Alkali process? Justify your answer by writing a reaction. (ii)Name the salt, which is used to use of (i) soap, paper, and glass industries (ii) To remove permanent hardness of water.(c) used as antacid (d) by doctors	**4**
25	A battery or cell is a source of electrical energy. The chemical reaction within the cell generates a potential difference between its two terminals that sets the electrons in motion to flow. The current through the resistor or a system or resistor is connected to the battery. 1.State Joule's law of heating. 2. Filaments of heating devices are made of alloys.why. 3.Why is the bulb filament made of tungsten? 4.Cord of an electric heater does not glow while the heating filament does?	**4**
	Biology	
26	Sensory organs in which photoreceptors are present is (a)Nose (b)Skin, (c) Tongue, (d) Inner ear	**1**
27	The loss of water from aerial parts of the plants is called (a) Excretion (b) Transportation (c) Translocation (d)Evaporation	**1**
28	If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected (a) Proteins breaking down into amino acids (b) Starch breaking down into sugars (c) Fats breaking down into fatty acids and glycerol (d) Absorption of vitamins	**1**
29	Bryophyllum can be propagated vegetatively by (a)Stem (b)Root (c) Leaf. (d).Flower	**1**
30	An organism capable of reproducing by two asexual reproduction methods one similar to the reproduction in yeast and other similar to reproduction in planaria is (a)Spirogyra (b) Hydra (c)Bryophyllum (d) Paramecium	**1**
31	Some unicellular organisms such as plasmodium and leishmania differ in the manner in which they reproduce. Name and explain the reproductive process taking place in them.	**2**
32	Write the essential function performed by ozone at the higher level of its atmosphere. How it is formed. Name the synthetic chemicals mainly responsible for the drop of amount of a own in the atmosphere.	**2**

	Directions: In the following questions, two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below : (a) Both (A) and (R) are true and (R) is the correct explanation of the assertion. (b) Both (A) and (R) are true but (R) is not the correct explanation of the assertion. (c) (A) is true but (R) is false. (d) (A) is false but (R) is true.	
31	**Assertion** : Energy is formed in the form of ATP during the process of respiration. **Reason** :Respiration process involves reaction of glucose with oxygen.	**1**
32	**Assertion** : Adrenaline makes the heartbeat slow, resulting in supply of less oxygen to our muscles. **Reason**: Adrenaline is secreted directly into the blood and carried to different parts of the body.	**1**
35	Define geotropism, draw labelled diagrams of a plant showing both types of geotropic moments by its parts.	**2**
36	Write the name and the function of parts, (a) and (b) in the diagram of a neuron given below  	**2**
37	Draw the diagram of human excretory system and label the parts which (a) stores urine. (b) filters blood (c) passes the blood away from our body	**3**
38	(a) Create a food chain of following organisms, insects,hawks, grass, snakes, frogs. (b)Which organism of this food chain will have the highest concentration of non-biodegradable chemicals. (c)Name the phenomena associated with it (d) if 10,000 J of energy is available to frogs, how much energy will be available to snakes in this food chain?	**3**
39	A.Write in tabular form the location and function of the hormone secreted by each of the following glands present in human body (a)Ovary (b) Thyroid gland (c) Pancreas. B.Name the part of the brain which helps in (i)making posture and balance (b)regulate respiration. (c) main thinking part (d) control involuntary actions	**5**
40	Arteries ,veins and capillaries are blood vessels through which blood flows in our body. Arteries carry blood from heart to different parts of the body and still have blood back to the heart. Trees are connected to veins by thin capillaries 1.Why it is essential to separate oxygenated and deoxygenated blood in human beings. 2.On the basis of size of walls and blood pressure, differentiate between arteries and veins 3.Give at least one examples of those living organism which have (a)Three chambered heart (b) Two chambered heart	**4**

OSDAV Public School, Kaithal

Half yearly Exams (2024-25)

Class :X

Subject :Science

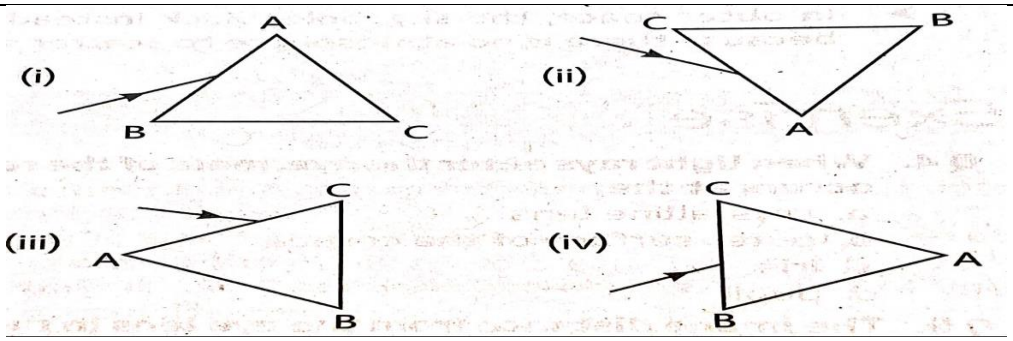
SET-B

Time: 3 Hrs . **M.M. :80**

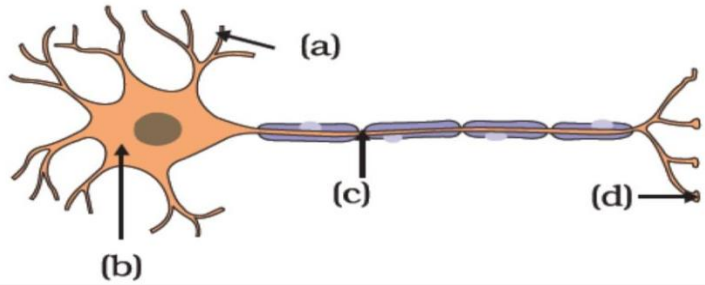
General Instructions:-

I. All questions are compulsory.

Q.N.	Questions	Marks
1	Select a pair of synthetic indicators from the following: (a) Clove oil and methyl orange. (b) Onion and phenolphthalein (c) Clove oil and litmus solutions. (d) Phenolphthalein and methyl orange	**1**
2	Hydroxide ions are formed by the reaction between (a)Dry sodium hydroxide and water. (b)Calcium chloride and water (c)Hydrogen chloride gas and water, (d)Ethanol and water	**1**
3	What is the product of the reaction between hydrochloric acid and calcium carbonate? (a) $CaCl_2$,CO_2,H_2O (b) $CaSO_4$,CO_2,H_2O (c) $CaCO_3$, CO_2,H_2O (d) $Ca(NO_3)_2$ CO_2,H_2O	**1**
4	To balance the following chemical equation, the value of the coefficient, x,y and z must be respectively x $Zn(NO_3)_2$ ———-> yZnO + zNO_2+ O_2 (a)4,2,2. (b) 4,4,2. (c) 2,2,4. (d) 2,4,2	**1**
5	Which of the following statements is not correct about an aqueous solution of an acid and of a base ? (1) Higher the pH, weaker the acid. (ii) Higher the pH, stronger the acid (iii) Lower the pH, stronger the base. (iv) Lower the pH, weaker the base (a) (i) and (iii). (b) (ii) and (iii). (c) (1) and (iv). (d) (ii) and (iv)	**1**
6	A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body is small in size and that of the legs are of same size. The following is the order of combinations for the magic mirror from the top. (a) Plane, convex and concave. (b) Convex, concave and plane (c) Concave, convex and plane d) Convex, plane and concave	**1**
7	Refractive indices of four media A,B,C and D are respectively 1.47,1.52,1.44 and 1.33.In which of these will the light travel slowest? . (a) A (b) B (c) C (d) D	**1**
8	Which of the following sequence correctly shows phenomena of light involved in the formation of a rainbow? (a). Reflection—> refraction —---->dispersion (b.)Refraction —---->dispersion —---> refraction (c.)Dispersion—---->scattering —----> total internal reflection (d.) Dispersion—---> internal reflection—-----> Refraction	**1**
9	A prism ABC(BC as base) is placed in different orientations. An arrow beam of light is incident on the presentation shown in below figure. In which of the following diagrams after dispersion, the third color from the bottom of the spectrum corresponds to the color of sky?	**1**

		
10	The expressions that relate (i) Q, I and t and (ii) Q, V and W respectively are (Here the symbols have their usual meanings) : (a) (i) I =V/R(ii) P = V/I (b) (i) V = IR (ii) P=VxI (c) (i) R= Vx I (ii). P=I/V (d). (i) I = R/V (ii) V=PxI	**1**
11	The maximum resistance which can be made using 4 resistors each of ½ ohm is : (a) 2Ω. (b) 1Ω. (c) 2.5 Ω. (d) 8 Ω	**1**
	Directions: In the following questions, two statements are given-one labeled **Assertion (A)** and the other labeled **Reason (R).** Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below : (a) Both (A) and (R) are true and (R) is the correct explanation of the assertion. (b) Both (A) and (R) are true but (R) is not the correct explanation of the assertion. (c) (A) is true but (R) is false. (d) (A) is false but (R) is true.	
12	**Assertion (A)**:When the length of a wire is doubled, then its resistivity also gets doubled. **Reason (R)**:Resistivity does not depend on the length of conductor	**1**
13	**Assertion (A):** When an iron iron rod is dipped into a solution of copper sulphate, copper is displaced. **Reason(R):** Iron is more reactive than copper.	**1**
	Section B	
14	Give reason for following: 1.Why bases do not conduct electricity in dry form? 2.What happens when we add base in the solution of base?	**2**
15	State the relation correlating the electric current flowing in a conductor and the voltage applied across it. Also draw a graph to show this relationship	**2**
16	Show by diagram how you would connect the three resisters each of resistance four ohm by using voltmeter, plug key, ammeter so that the combination has a net resistance of six ohm.	**2**
17	Give reason for following: (a)Convex mirror is used as a rear view mirrors . (b) concave mirrors are used in solar furnaces.	**2**
18	A concave mirror of focal length 20 cm can produce a magnified virtual as well as real image. Is this a correct statement? If yes, where shall the object be placed in each case for obtaining these images?	**2**
	Section C	
19	Draw a diagram for refraction through glass prism and label angle of deviation,incidence and emergence .Which colour of light has minimum angle of deviation?	**3**
20	A chemical compound X is used in the soap,paper and glass industry. When it reacts with acid a fire extinguisher gas is released. (a)Identify the compound X. (b)Write a chemical reaction when X reacts with acid . (c) Name acids and base which can be used as reactants for formation of X.	**3**

21	On heating ferrous sulphate in a dry boiling test tube ,a reddish brown substance is formed . (a)Write a balanced chemical equation of the reaction . (b)Write one identification of the gasses released in the reaction (c) Define precipitation reaction. name the type of reaction and define it.	**3**
	Section D	
22	A metal nitrate 'A' on heating gives yellowish brown coloured metal oxide along with brown gas 'B' and a colorless gas 'C'. Aqueous solution of 'A' on reaction with potassium iodide forms a yellow precipitate of compound 'D'. (a) Identify 'A', 'B', 'C' and 'D'. (b) identify the types of both the reactions. (c)Also write both the reactions.3	**5**
23	(a)Draw a diagram by using a convex lens when the object is placed between the optical center and focus. (b)Find the power of a convex lens which forms a real and inverted image of magnification -1 when the object is at 30 cm from the optical center. (c) Define the following in case of a concave mirror. (i)Focus (ii) Pole	**5**
	Section E	
24	Seawater contains many salts dissolved in it. Sodium chloride is separated from these salts. Deposits of solid salt are also found in several parts of the world. The common salt is an important raw material for various materials of daily use, such as sodium hydroxide, baking soda, washing soda, glitching powder, powder, and many more . 1.Write the formation reaction of caustic soda. 2.Draw a diagram of Electrolysis of Brine 3.Write at least two uses of NaOH	**4**
25	A battery or cell is a source of electrical energy. The chemical reaction within the cell generates a potential difference between its two terminals that sets the electrons in motion to flow. The current through register or a system or register is connected to the battery 1.State Joule's law of heating. 2.Alloys are to make filament of heating devices.why. 3.Why is the bulb filament made of tungsten? 4.Cord of an electric heater does not glow while the heating filament does?	**4**
	BIOLOGY	
26	Sensory organs in which olfactory receptors are present is (a) Nose (b) Skin, (c) Tongue (d) Inner ear	**1**
27	The transportation of food in different parts of the plants is called (a) excretion (b) transportation (c) translocation (d)evaporation	**1**
28	If pancreatic amylase is lacking in the saliva, which of the following events will be affected (a) proteins breaking down into amino acids (b) Starch breaking down into sugars (c) fats breaking down into fatty acids and glycerol (d) absorption of vitamins	**1**
29	In Rhizopus ,tubular thread like structures bearing sporangia at their tips are called (a)filaments (b)hyphae. (c) rhizoids. (d). roots	**1**
30	Reproduction is essential for living organism in order to (a)keep the individual organism alive (b) fulfill their energy requirements (c)Maintain growth (d)continue the species generation after generation.	**1**
	Directions: In the following questions, two statements are given-one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below : (a) Both (A) and (R) are true and (R) is the correct explanation of the assertion.	

	(b) Both (A) and (R) are true but (R) is not the correct explanation of the assertion. (c) (A) is true but (R) is false. (d) (A) is false but (R) is true.	
31	Assertion : Energy is used during the process of respiration. Reason :Respiration, Store energy in the form of ATP.	**1**
32	Assertion : Adrenaline makes the heartbeat faster, resulting in supply of more oxygen to our muscles. Reason: Adrenaline is secreted directly into the blood and carried to different parts of the body.	**1**
33	Some unicellular organisms such as amoeba and planaria differ in the manner in which they reproduce. Name and explain the reproductive process taking place in them.	**2**
34	Write the essential function performed by ozone at the higher level of its atmosphere. How it is formed. Name the synthetic chemicals mainly responsible for the drop of amount of a own in the atmosphere.	**2**
35	Define phototropism , draw labeled diagram of a plant showing geotropism moments of its parts	**2**
36	Write the name and the function of parts, (c) and (d) in the diagram of a neuron given below  	**2**
37	Draw the diagram of human excretory system and label the parts which (a) stores urine. (b) filters blood (c) passes the blood away from our body	**3**
38	(i)Create a food chain of following organisms Grass, grasshopper, frog, snake, eagle. (b)Which organism of this food chain will have the highest concentration of non-biodegradable chemicals? (iii)Name the phenomena associated with it. (iv) If 10, 0000 J of energy is available to frogs, how much energy will be available to snakes in this food chain?	**3**
39	A.Write in tabular form the location and function of the hormone secreted by each of the following glands present in human body (a)Pituitary gland (b) Adrenaline (c) pancreas B.Name the part of the brain which helps in (i) Involuntary actions (b)voluntary actions. (c)have different association areas, (d) reflex action of eyes and trunk in response to audio visual stimuli	**5**
40	Arteries ,veins and capillaries are blood vessels through which blood flows in our body. Arteries carry blood from heart to different parts of the body and will carry blood back to the heart. Arteries are connected to veins by thin capillaries 1.Define double circulation. 2.Name the artery and vein which (i)Brings oxygenated blood from lungs to heart. (ii) Carry deoxygenated blood away from heart to lungs. 3..Give at least one examples of those living organism which have (a)double circulation (b) single circulation	**4**

OSDAV Public School, Kaithal

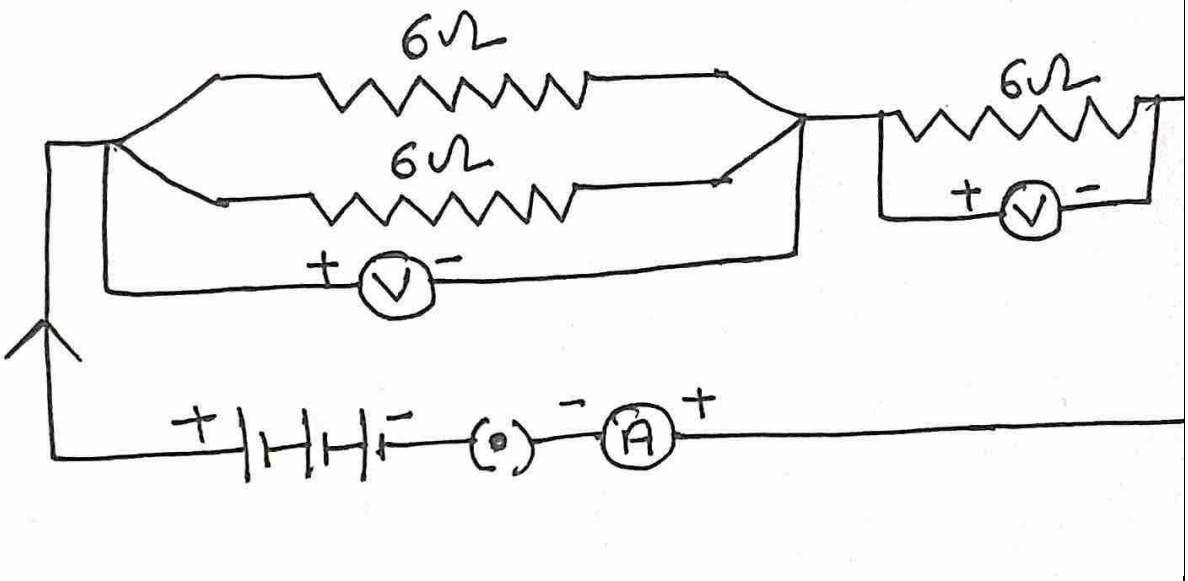
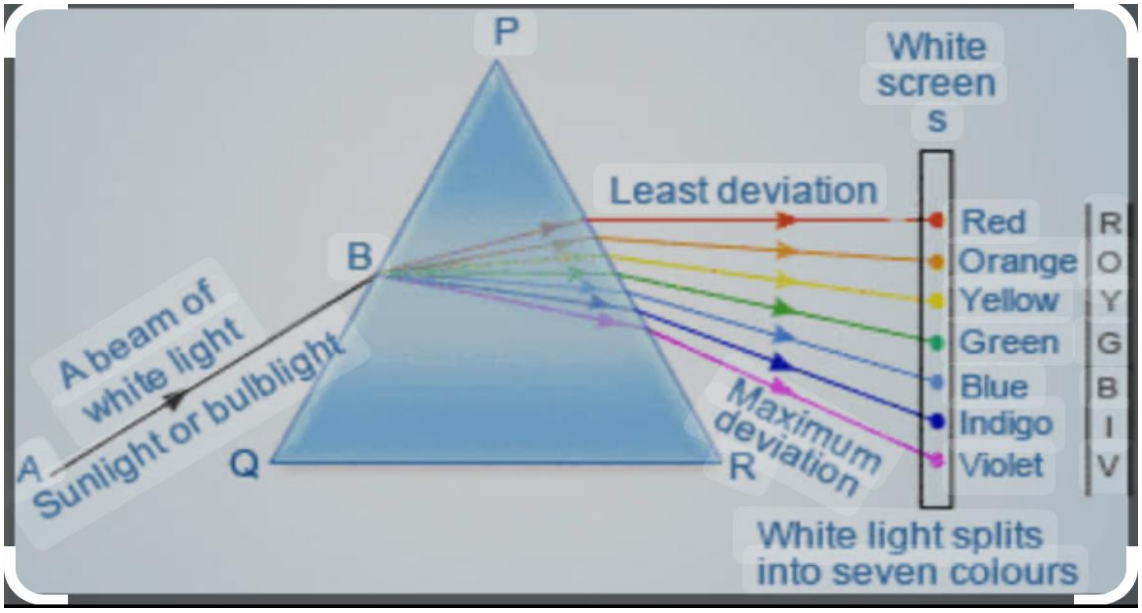
Half yearly Exams (2024-25) **SET- A**

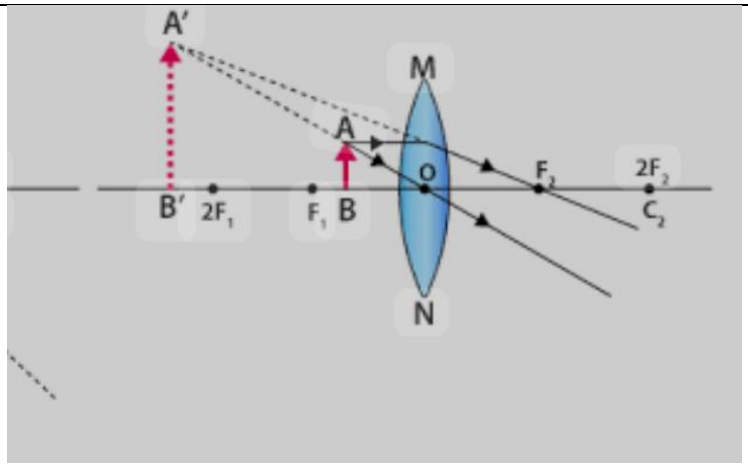
Class : X

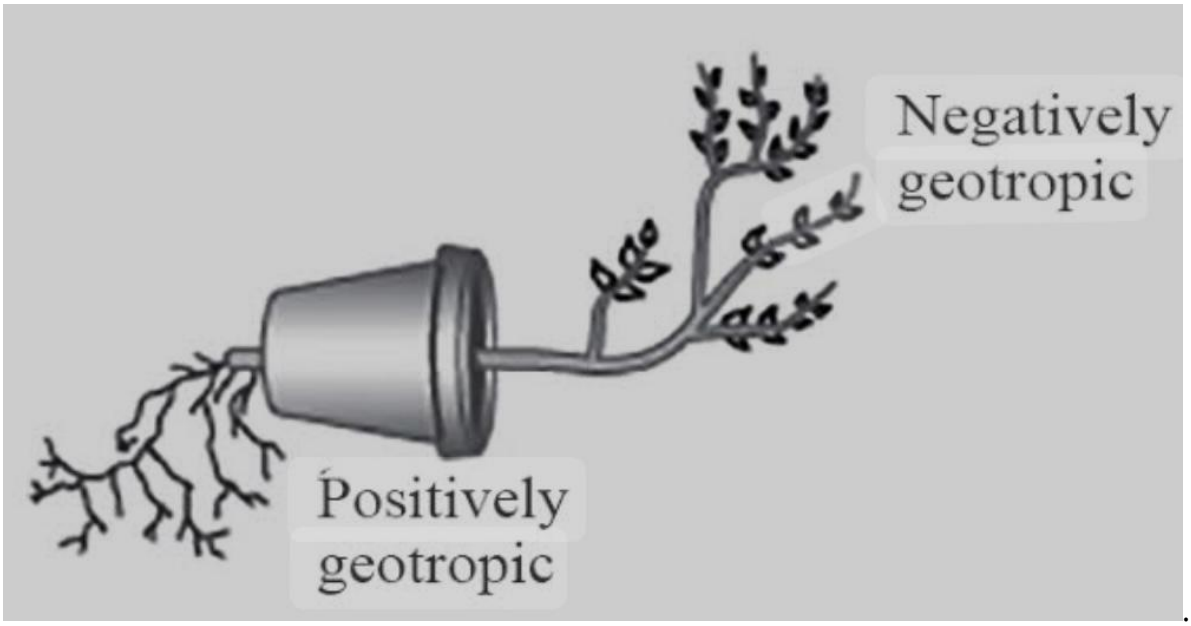
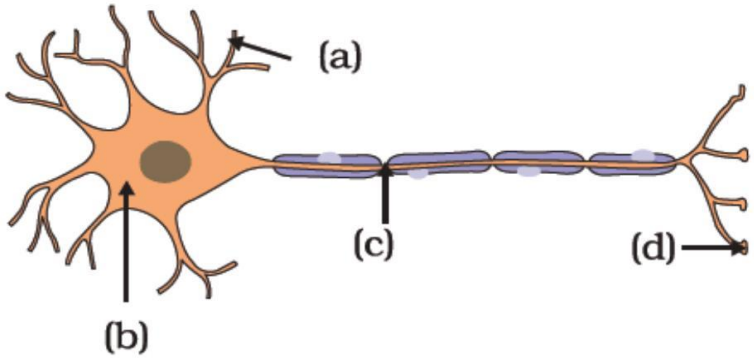
Subject : Science

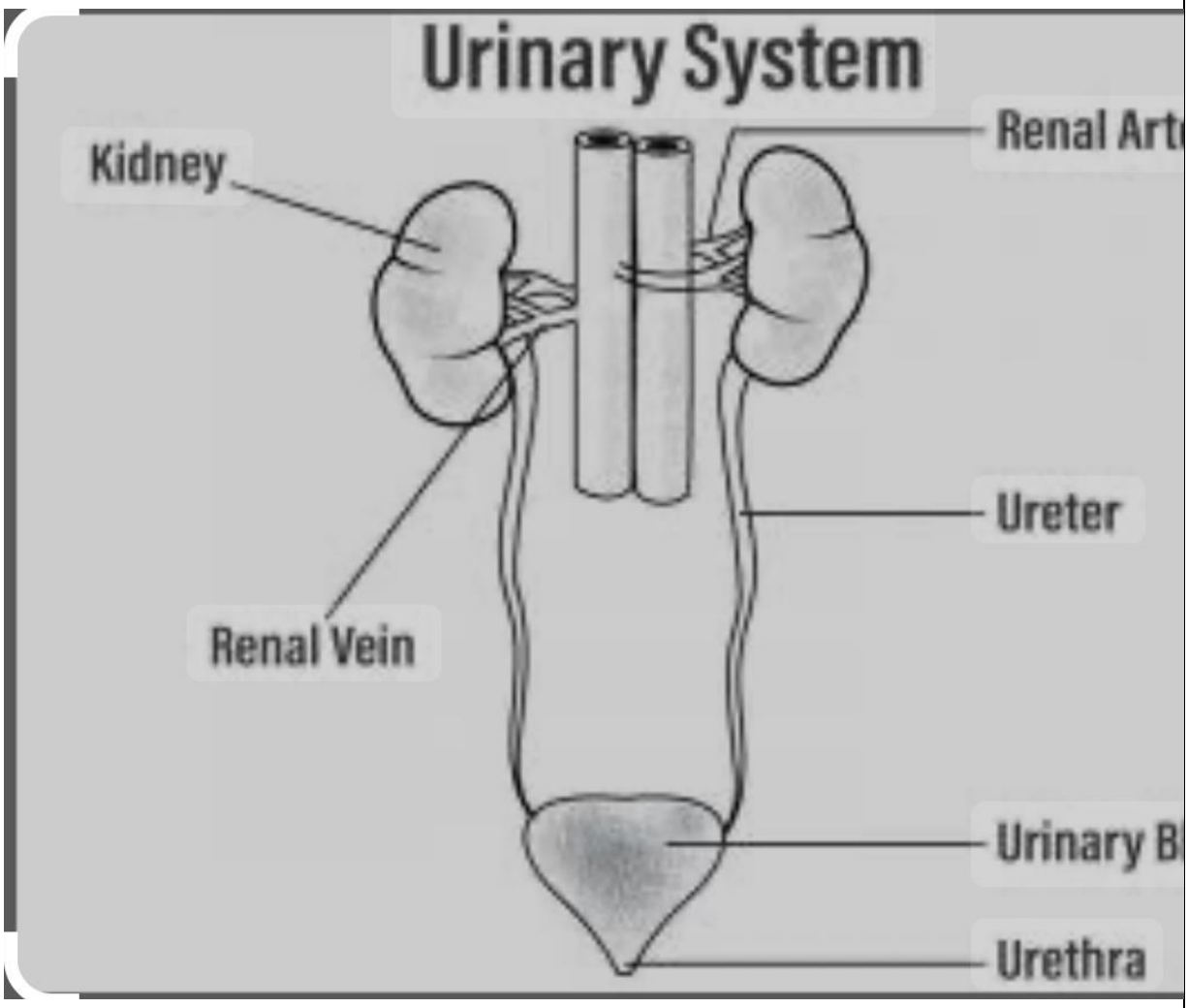
Marking Scheme

Q.N.	Section A	Marks
1	(a)	1
2	(c)	1
3	(b)	1
4	(c)	1
5	(d)	1
6	(c)	1
7	(d)	1
8	(c.)	1
9	(ii)	1
10	(b)	1
11	(c)	1
12	(a)	1
13	(c)	1
	Section B	
14	(a)Because they do not associate into ions that is hydronium ions, which are cause of conduction of electricity in acids (b)When we add drop by drop acid or base in water because the reaction is highly exothermic, the mixture can splash out or the test tube may be broken down due to excessive local heating.	2
15	Resistance of a conductor is directly proportional to. It is inversely proportional to area of cross-section. R= resistivity * length of conductor/area of cross section SI unit= ohm meter	2

16		**2**
17	(a)Because it gives a virtual erect and diminished image. Its nature is diverging and it gives a wider field view . (b) Concave mirrors are used in solar furnaces. It is a converging mirror which concentrates the light at one point.	**2**
18	Yes it can be possible in the case of lenses . Real and inverted image the position of the object is anywhere between F1 and 2F1 or it can be at F1. For a virtual image, the position of the object is between the optical centre and focus.	**2**
	Section C	
19	Dispersion : The splitting of white light into its component colours when it passes through glass prism.  Cause: different colours of light have different speed in a given medium.	**3**
20	A chemical compound X is Baking soda $NaCl+H_2O+CO_2+NH_3$———>$NH_4Cl+NaHCO_3$ (b)Due to the release of carbon dioxide gas.	**3**

	$NaHCO_3$———> $Na_2CO_3+CO_2+H_2O$	
21	On adding a drop of barium chloride solution to an aqueous solution of sodium sulphate,white precipitate is obtained. (a) $BaCl_2+Na_2SO_4$——->$BaSO_4+2NaCl$ (d) Double displacement reaction. (c) The reaction in which precipitates are formed.	**3**
	Section D	
22	(a)A is lead nitrate,B is Nitrogen dioxide , C is oxygen gas,D is lead iodide. (b) Thermal decomposition reaction, double displacement reaction or precipitation reaction. (c)$Pb(NO_3)_2$--->$PbO +NO_2+ O_2$ $Pb(NO_3)_2+KI$-—--->$PbI_2+ KNO_3$	**5**
23	 (b)2f=30 f=30/2=15cm P = 100/15 = 20/3D (c).(i)Focus: The light rays which are parallel to the principal axis after reflection, actually meet at a point on the principal axis. This point is called focus of concave mirror (ii) Pole: The midpoint of the reflecting surface of the mirror is called pole.	
	. **Section E**	
24	(i) Because a base is formed which is water soluble called alkali and chlorine gas is released. $NaCl+H_2O$——>$NaOH+H_2+Cl_2$ (ii) (i)Washing Soda (ii)Washing Soda.(c) baking soda (d) plaster of paris	**4**
25	1.Heat produced in a conductor is directly proportional to square of current, directly proportional to resistance of the conductor and directly proportional to the time for which the current flows in the conductor . $H = I^2RT$ is called Joule law of heating 2.Alloys have a high melting point, therefore they do not oxidise at high temperature. Secondly, alloys has high resistivity. 3. Because tungsten have high melting point, it does not oxidise at high temperature 4. Cord is made up of conductor which provides a low resistance path, but filament is made up of alloy having high resistivity .	**4**
	Biology	
26	(d) Inner ear	**1**
27	(b) Transpiration	**1**
28	(b) Starch breaking down into sugars	**1**
29	(c) Leaf.	**1**
30	(b) Hydra	**1**

31	(b) Both (A) and (R) are true but (R) is the correct explanation of the assertion.	**1**
32	(d) (A) is false but (R) is true..	**1**
33	plasmodium– By multiple fission, this method, nucleus of the parent cell divides into multiple nuclei within the cyst. When favourable conditions comes cyst, breakdown and more than two daughter cells are reproduced . leishmania: This organism reproduces by binary fusion leishmania divides into two daughter cells along longitude axis .	**2**
34	It protect us from the harmful effect of ultraviolet rays by making protective cover over the atmosphere in stratosphere. O_2——> O+O (in presence of uv rays) O_2+O—>O_3	**2**
35	It is the growth of any part of the plant in response to gravity. if it is in the direction of then gravity, then called positive geotropic moment, and if this growth is away from gravity, then it is called negative geotropic moment. 	**2**
36	(a) Dendrites:which receive informfrom from stimulus (b) Cell body: Through it information travels and reaches to ending in the form of electrical signals 	**2**

37	 (a) urinary bladdar. (b) kidney (c) ureters	**3**
38	grass———>insects——->frog——->snake———>hawks. (b)In this food chain hawks will have the highest concentration of non-biodegradable chemicals. (c) biological magnification (d) 10,00 J	**3**
39	(a)Ovary :Hormone -Oestrogen Function:it is responsible for secondary sexual characteristics in females. (b) Thyroid gland: Hormone Thyroxine Function :Helps in maintaining metabolism as well as digestion of fats, proteins, and carbohydrates (c) Pancreas : Hormone Insulin Function :Regulate and control blood sugar level. B(i)Cerebellum (b)pons (c) cerebrum (d) medulla	**5**
40	They are warm blooded animals so they need extra energy to maintain their body temperature. Therefore, it is necessary to separate oxygenated handy axis blood. 2. Arteries have thick walls and blood pressure is high. Veins have thin walls and blood pressure is low . 3.(a)Amphibians and Reptiles (b) Fishes	**4**

OSDAV Public School, Kaithal

Half yearly Exams (2024-25)

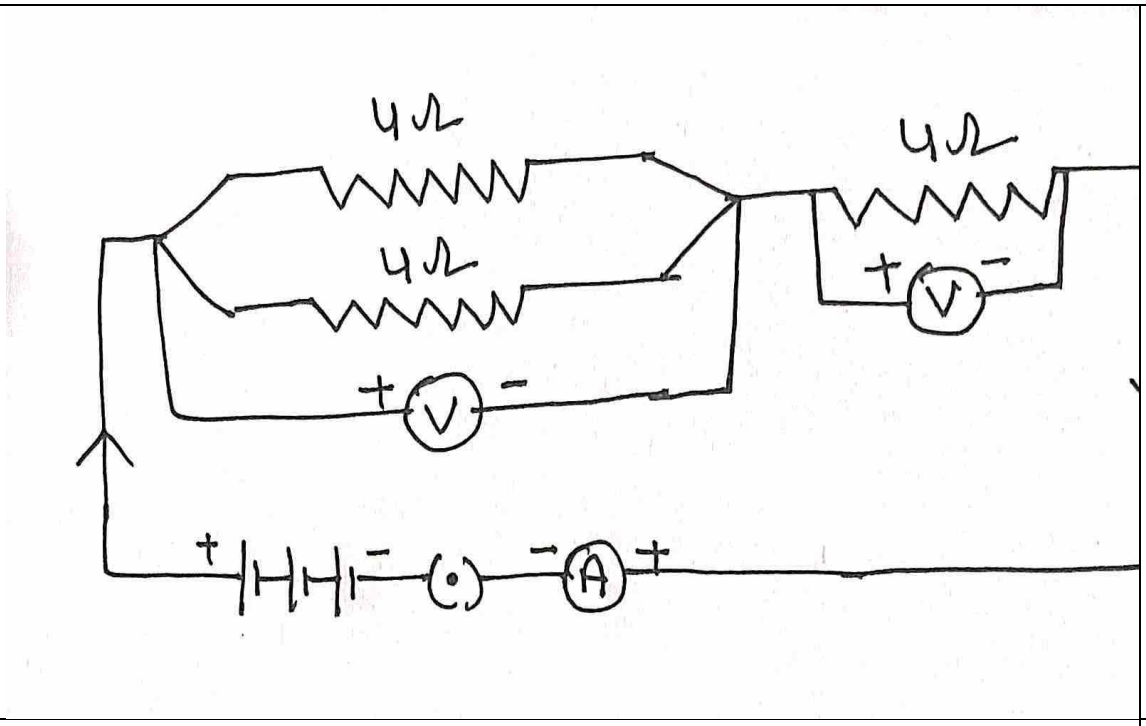
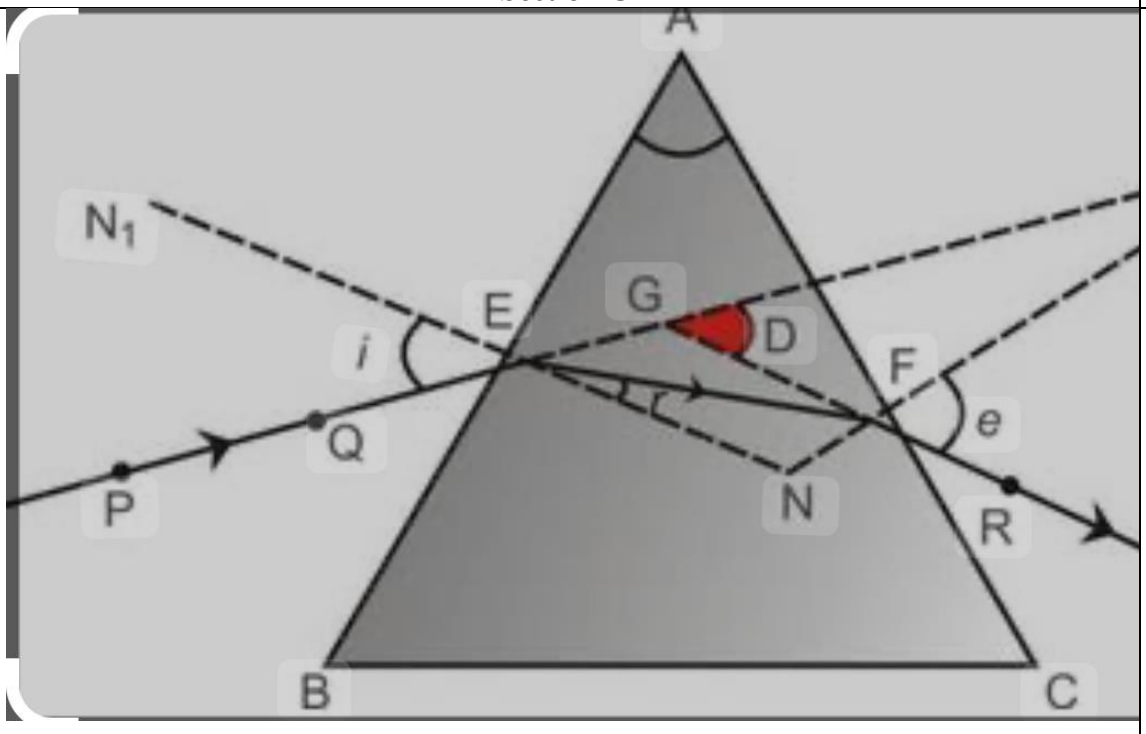
Class :X

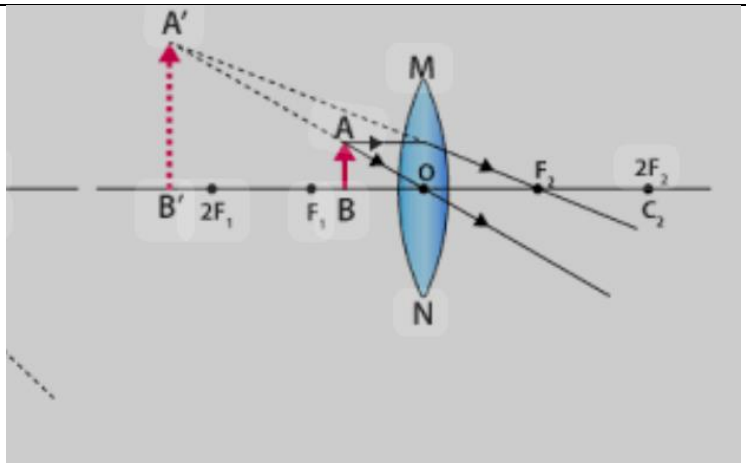
Subject :Science

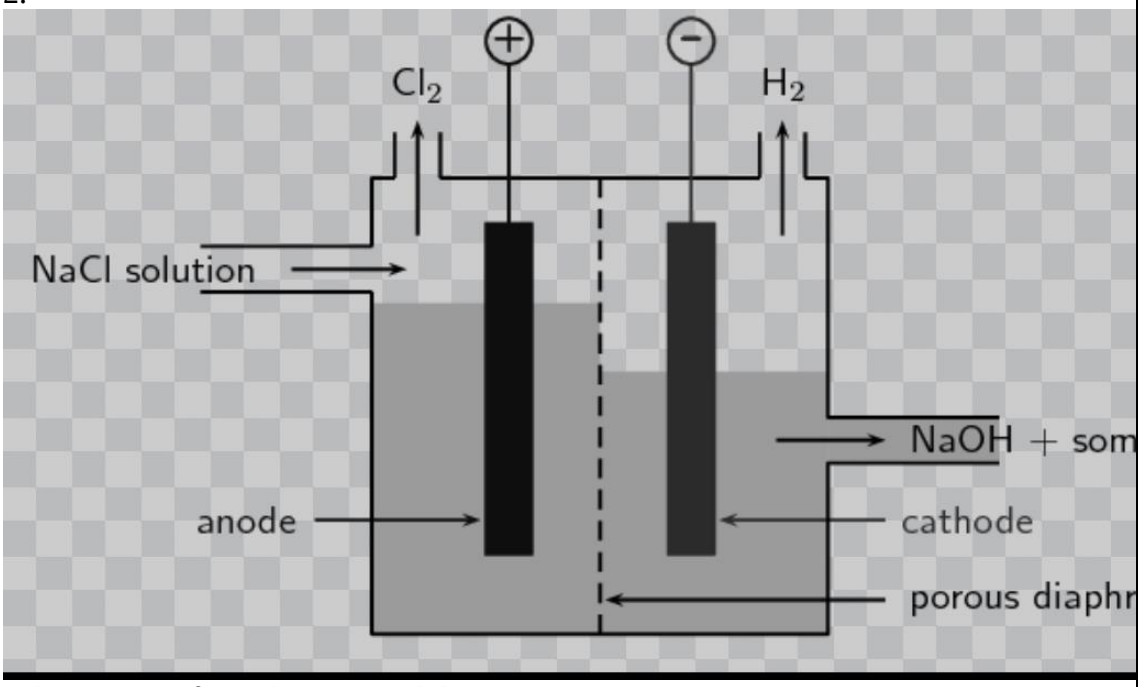
SET-B

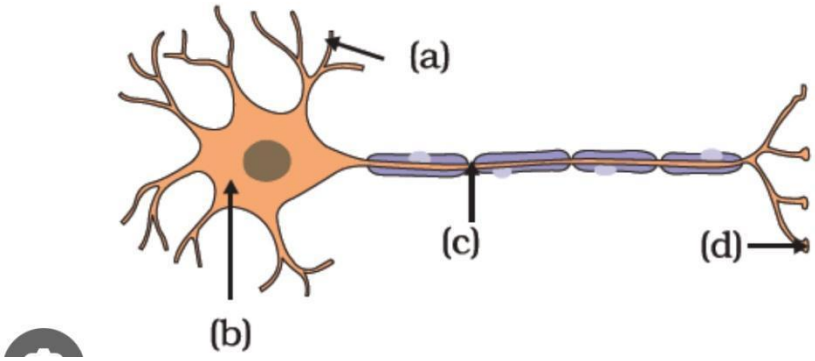
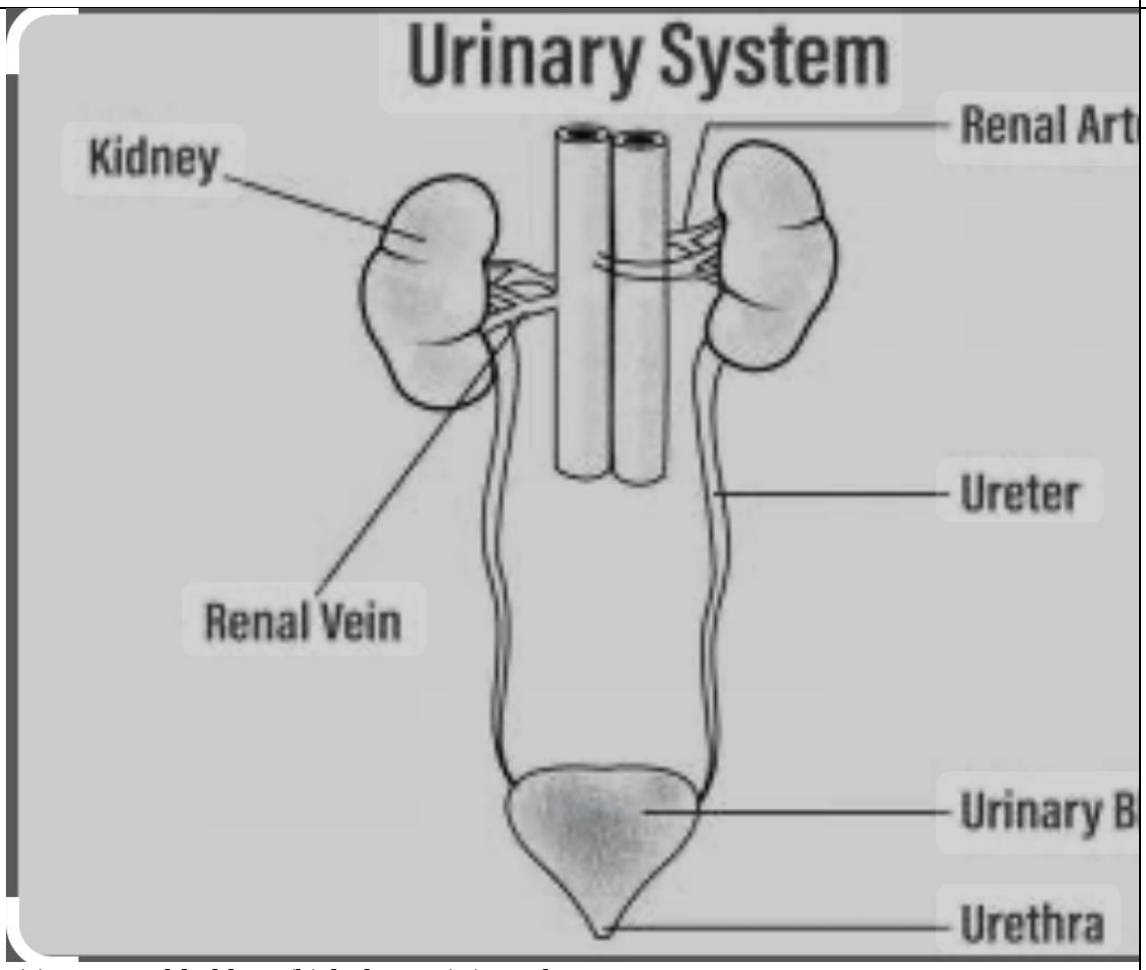
Marking Scheme

Q.N.	Questions	Marks
1	(d)	**1**
2	(a)	**1**
3	(a)	**1**
4	(c)	**1**
5	(b)	**1**
6	(c)	**1**
7	(b)	**1**
8	(d.)	**1**
9	(i)	**1**
10	(b)	**1**
11	(a)	**1**
12	(d)	**1**
13	(c)	**1**
	Section B	
14	Give reason for following: 1.Why bases do not conduct electricity in dry form? Because in dry form, they do not dissociate into ions when they comes in contact with water, they release hydroxide ions. 2.What happens when we add base in the solution of base? When we add in the solution of base, the concentration of hydroxide ions increases.	**2**
15	State the relation correlating the electric current flowing in a conductor and the voltage applied across it. Also draw a graph to show this relationship The current flowing through a metallic wire is directly proportional to potential difference between two ends of the wire if temperature remains same.	**2**

16		**2**
17	(a)Because it give virtual direct and diminished image, it is diverging in nature and its field view is large. (b) Concave mirror is converging in nature, therefore, it concentrates the light at one point.	**2**
18	yes, this statement is correct For real image, the object should be placed anywhere from infinity to focus and forward virtual image. It is placed between pole and focus .	**2**
	Section C	
19	 .Red colour of light has minimum angle of deviation.	**3**
20	(a)Washing soda (b)Na_2CO_3+ HCl————>NaCl+CO_2+H_2O (c) Sodium hydroxide and carbonic acid	**3**
21	(a)$FeSO_4$——>Fe_2O_3+SO_2+SO_3.	**3**

	(b)suffocating gases having rotten egg smell (c) The reaction in which precipitates are formed. Thermal decomposition reaction:The reaction in which a single substance is broken down into two or more products in presence of heat..	
	Section D	
22	(a)A is lead nitrate,B is Nitrogen dioxide , C is oxygen gas,D is lead iodide. (b) Thermal decomposition reaction, double displacement, reaction or precipitation reaction. (c)$Pb(NO_3)_2$--->$PbO + NO_2 + O_2$ $Pb(NO_3)_2 + KI$-——--->$PbI_2 + KNO_3$	**5**
23	 (b)2f=30 f=30/2=15cm P = 100/15 = 20/3D (c).(i)Focus: The light rays which are parallel to the principal axis after reflection, actually meet at a point on the principal axis. This point is called focus of concave mirror (ii) Pole: The midpoint of the reflecting surface of the mirror is called pole.	**5**
	Section E	
24	$NaCl + H_2O$——>$NaOH + H_2 + Cl_2$. because in this process a base is formed, which is water soluble and also chlorine gas is released.	**4**

	2.  3.degreasing of metals,soaps and detergents,margarine etc	
25	1.Heat produced in a conductor is directly proportional to square of current, directly proportional to resistance of the conductor and directly proportional to the time for which the current flows in the conductor . $H = I^2RT$ is called Joule law of heating 2.Alloys have a high melting point, therefore they do not oxidise at high temperature. Secondly, alloys have high resistivity. 3. Because tungsten have high melting point, it does not oxidise at high temperature 4. Cord is made up of conductor which provides a low resistance path, but filament is made up of alloy having high resistivity	**4**
	BIOLOGY	
26	(a)	**1**
27	(c)	**1**
28	(b)	**1**
29	(b)	**1**
30	(d)	**1**
31	(d).	**1**
32	(b)	**1**
33	Some unicellular organisms such as amoeba and planaria differ in the manner in which they reproduce. Name and explain the reproductive process taking place in them.	**2**
34	It protect us from the harmful effect of ultraviolet rays by making protective cover over the atmosphere in the stratosphere. O_2——> O+O (in presence of uv rays) O_2+O—>O_3 cause chlorofluorocarbons, coolants used in ACs, refrigerators and fire extinguishers	**2**
35	Define phototropism , draw labeled diagram of a plant showing geotropism moments of its parts	**2**

36	Axon: electrical impulse travels through it and reach to nerve. ending. Neeru ending hair electrical signal convert into chemicals which are called neuro transmitters. These chemicals help in crossing the gap between two adjacent neurons.  	**2**
	 (a) Urinary bladdar (b) kidney (c) urethra	**3**
38	grass———>insects——->frog——->snake———>hawks. (b)In this food chain hawks will have the highest concentration of non-biodegradable chemicals. (c) biological magnification (d) 10,00 J	**3**

39	A.Write in tabular form the location and function of the hormone secreted by each of the following glands present in human body (a)Pituitary gland (b) Adrenaline (c) pancreas B.Name the part of the brain which helps in (i) Medulla (b)cerebrum. (c)forebrain, (d) mid brain	**5**
40	1. The circulation in which blood travels twice through the heart to complete one cycle.. 2(i) pulmonary vein. (ii) pulmonary artery. 3.(a)Mammals (b) Fishes	**4**