INDIAN SCHOOL AL WADI AL KABIR

MIDTERM (2023 - 24)

Class: X | Sub: **SCIENCE (086)** | Max Marks: 80

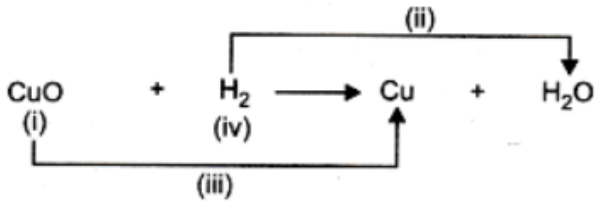
Date: 01.10.2023 | Set - I | Time: 3 hours

General Instructions:

i. This question paper consists of 39 questions in 5 sections.
ii. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
iii. Section A consists of 20 objective-type questions carrying 1 mark each.
iv. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
v. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
vi. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
vii. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts

Section-A

Select and write the most appropriate option out of the four options given for each of the questions 1 - 20. There is no negative mark for an incorrect response.

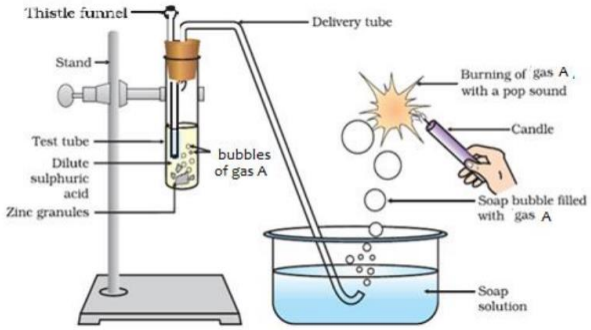
Q. Nos.	Questions	Marks
1.	$2HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + 2H_2O$; is an example of: (i) Displacement reaction (ii) Double displacement reaction (iii) Neutralisation reaction (iv) Combination reaction (a) (i) and (ii) (a) (ii) and (iii) (c) (iii) and (iv) (d) (i) and (iv)	1
2.	Observe the given reaction carefully and identify (i), (ii), (iii) and (iv) 	1

	(i)	(ii)	(iii)	(iv)
(a)	Undergoes oxidation	oxidation	reduction	Undergoes reduction
(b)	Reducing agent	reduction	oxidation	Oxidising agent
(c)	Oxidising agent	oxidation	reduction	Reducing agent
(d)	Undergoes reduction	reduction	oxidation	oxidation

3. While performing an experiment, a student observes that when he heats some green crystals in a boiling tube, the colour of the crystals changes to brown and a gas evolves which smells like burning sulphur. Identify the green coloured crystals and the brown coloured substance. 1

(a) Green crystals- ferric oxide, Brown substance- ferrous sulphate
(b) Green crystals- ferrous sulphate, Brown substance- ferric oxide
(c) Green crystals- ferric oxide, Brown substance- nitrogen dioxide
(d) Green crystals- lead nitrate, Brown substance- lead oxide

4. Identify gas A in the following experiment 1



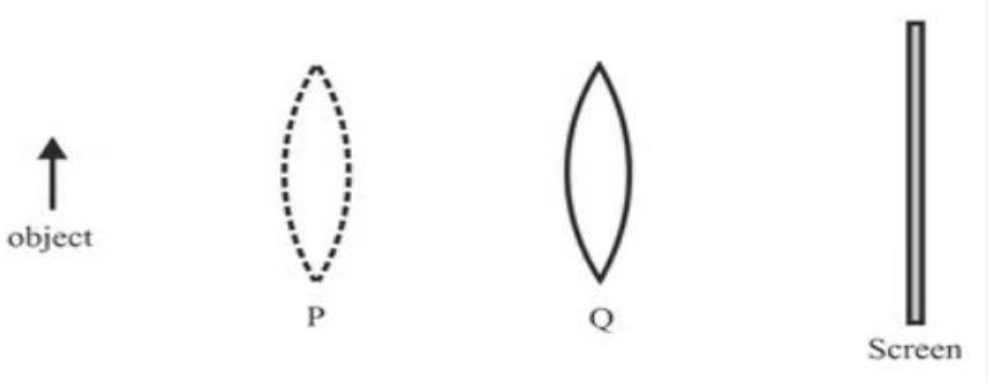
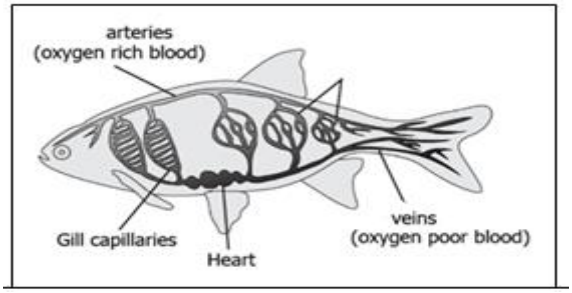
(a) Nitrogen
(b) Hydrogen
(c) Oxygen
(d) Carbon dioxide

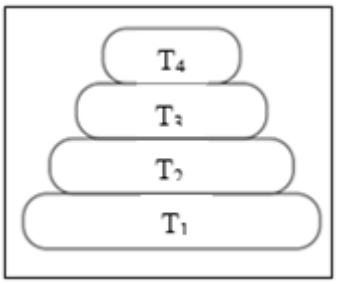
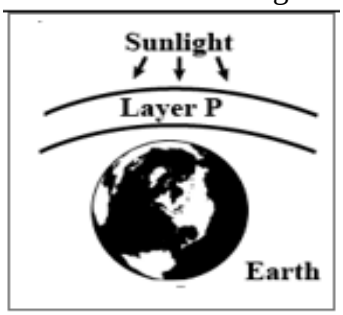
5. Given below are the pH values of four different liquids: 1
7, 14, 4 and 2
Which of these could be that of (i) distilled water and (ii) 1M sodium hydroxide solution?
(a) (i) 14 and (ii) 7
(b) (i) 4 and (ii) 2
(c) (i) 7 and (ii) 14
(d) (i) 7 and (ii) 4

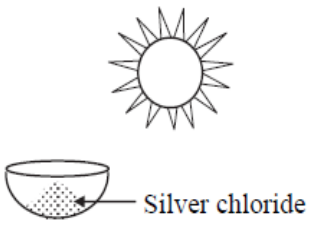
6. What happens when a piece of sodium is dropped in water? 1

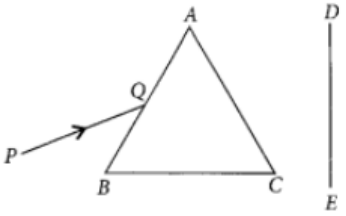
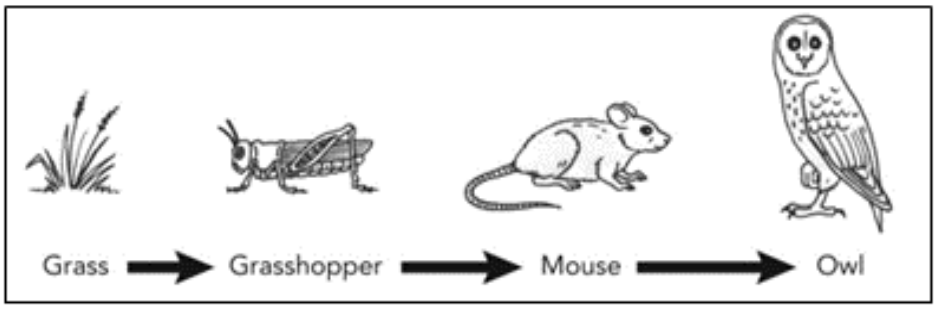
(a) It catches fire and forms oxide
(b) It absorbs heat and forms oxide
(c) It catches fire and forms hydroxide
(d) It absorbs heat and forms hydroxide

7. The metals which react with very dilute nitric acid to release hydrogen gas are: 1
(a) Hg and Mn
(b) Mg and Mn
(c) Ca and Mg
(d) Mn and Cu

8.	An object is placed at a distance of 40cm in front of a concave mirror of a focal length of 20 cm. The image produced is: (a) virtual and inverted (b) real and erect (c) real, inverted and of the opposite size as that of the object (d) real, inverted and of the same size as that of the object	1
9.	When a lens in placed at Q, a sharp image is formed on the screen. The image formed is real, inverted and diminished. When the lens is moved to P, another sharp image is formed on the screen.  (a) Magnified and inverted (b) Magnified and upright (c) Diminished and upright (d) Diminished and inverted	1
10.	Which of the following equation show correct conversion of CO_2 and H_2O into carbohydrates in plants through photosynthesis? a) $6CO_2 + 6H_2O \xrightarrow[\text{Heat energy}]{\text{Chlorophyll}} C_6H_{12}O_6 + 6O_2 + 12H_2O$ (Glucose) b) $6CO_2 + 6H_2O \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} C_6H_{12}O_6 + 6O_2 + 12H_2O$ (Glucose) c) $6CO_2 + 12H_2O \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} C_6H_{12}O_6 + 6O_2 + 6H_2O$ (Glucose) d) $6CO_2 + 12H_2O \xrightarrow[\text{Heat energy}]{\text{Chlorophyll}} C_6H_{12} + 6O_2 + 6H_2O$ (Glucose)	1
11.	The image shows the circulation of blood in fishes.  Which option correctly traces the pathway of blood flow in fish body?	1

	a) Gill capillaries→ oxygenated blood → heart → body cells→ deoxygenated blood →gills b) Gill capillaries→ oxygenated blood→ body cells→ deoxygenated blood→ heart → gills c) Capillaries→ heart →oxygenated blood→ body cells→ deoxygenated blood → heart→ gills d) Gill capillaries→ oxygenated blood →heart → body cells→ deoxygenated blood →heart → gills	
12.	Choose the correct statement that describes the arteries. (a) They have thick elastic walls, blood flows under high pressure, collect blood from different organs and bring it back to the heart. (b) They have thin walls with valves inside, blood flows under low pressure and carries blood away from the heart to various organs of the body. (c) They have thick elastic walls, blood flows under low pressure, and carry blood from the heart to various organs of the body. (d) They have thick elastic walls, blood flows under high pressure and carry blood away from the heart to different parts of the body.	1
13.	In the given figure, various trophic levels are shown in a pyramid. At which trophic level is maximum energy available?  a) T_4 b) T_2 c) T_1 d) T_3	1
14.	Which of the following chemical cause the thinning of layer **P?**  a) Nitrogen dioxide b) Chlorofluorocarbon c) Sulphur dioxide d) None of the above	1
15.	Factors responsible for the rapid spread of bread mould on slices of bread are: (i) Large number of spores (ii) Availability of moisture and nutrients in bread (iii) Presence of tubular branched root (iv) Formation of round-shaped sporangia.	1

	Which of the above statements are true? a) (i) and (iii) b) (ii) and (iv) c) (i) and (ii) d) (iii) and (iv)	
16.	In Spirogyra, asexual reproduction takes place by: a) Breaking up of filaments into smaller bits. b) Division of a cell into two cells. c) Division of a cell into many cells. d) Formation of young cells from older cells.	1
	Question No. 17 to 20 consist of two statements – Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below: a) Both A and R are true, and R is the correct explanation of A. b) Both A and R are true, and R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	
17.	**Assertion (A):** Aluminium metal is used for making cooking utensils. **Reason (R):** Aluminium has good thermal conductivity and high melting point and reacts with oxygen present in atmospheric air to form a protective layer of oxide on the surface.	1
18.	**Assertion (A):** White light is dispersed into its seven-colour components by a prism. **Reason (R):** Different colours of light bend through different angles with respect to the incident ray as they pass through a prism.	1
19.	**Assertion(A):** If a pesticide is present in water bodies, then fish-eating birds occupying the fourth trophic level accumulate the maximum amount of DDT in their bodies. **Reason (R):** Pesticides are not degraded within bodies of living organisms and get concentrated at each trophic level leading to biomagnification.	1
20.	**Assertion(A):** The left ventricle of the human heart has a thicker wall than that of the right ventricle. **Reason(R):** The left ventricle needs to pump blood to nearby lungs.	1
	Section-B **Question No. 21 to 26 are very short answer questions**	
21.	The following diagram displays a chemical reaction. Observe carefully and answer the following questions.  (a) How will the colour of the salt change? (b) Identify the type of chemical reaction that will take place and define it.	2
22.	Draw a neat diagram of the human excretory system and label the following: (i) Part that carries urine from the bladder to the outside of the body.	2

	(ii) The part where urine formation takes place. (iii) The part where urine is stored temporarily before it is excreted off the system.	
23.	Write the events that occur in the chloroplasts during photosynthesis. **OR** How does the following contribute to the process of digestion? (i) Bile juice (ii) Intestinal juice	2
24.	The refractive index of water with respect to air is 1.33 and that of the diamond is 2.42. i. In which medium does the light move faster, water or diamond? ii. What is the refractive index of the diamond with respect to water?	2
25.	How will you use two identical glass prisms so that a narrow beam of white light incident on one prism emerges out of the second prism as white light? Draw and label the ray diagram. OR A narrow PQ of white light is passing through a glass prism ABC as shown in the diagram.  i. Trace it on your answer sheet and show the path of the emergent beam as observed on the screen DE. ii. Write the name and cause of the phenomenon observed.	2
26.	Observe the food chain:  a) If the amount of energy available at the second trophic level is 1000 joules, then how much energy will be available at the producer level? Justify your answer. b) Is it possible to have two more trophic levels in this food chain just after the fourth trophic level? Justify your answer.	2

Section-C
Question No. 27 to 33 are short answer questions

27. Distinguish between a displacement reaction and a double displacement reaction. Identify the displacement and the double displacement reaction from the following reactions. 3

(a) $HCl_{(aq)} + NaOH_{(aq)} \rightarrow NaCl_{(aq)} + H_2O_{(l)}$

(b) $Fe_{(s)} + CuSO_{4(aq)} \rightarrow FeSO_{4(aq)} + Cu_{(s)}$

28. (i) From amongst the metals sodium, calcium, aluminium, copper and magnesium, name the metal 3

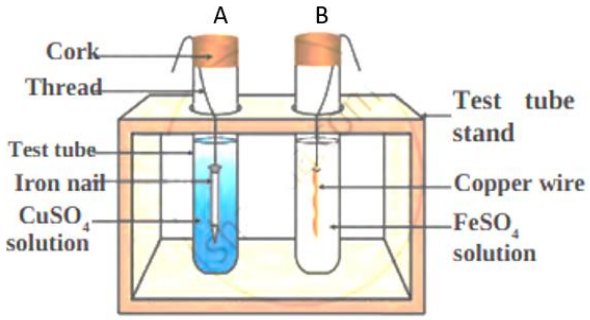
(a) Which reacts with water only on boiling and

(b) Which does not react even with steam.

(ii) What are amphoteric oxides? Give two examples.

OR

Observe the two test tubes A and B in the diagram given below and answer the following questions.



(a) In which test tube will the reaction take place?

(b) Write a balanced equation for the reaction.

(c) Name the type of reaction.

29. Draw a schematic representation of transport and exchange of oxygen and carbon dioxide in human body. 3

30. a) What is the role of diaphragm and ribs in breathing? 3
b) How is oxygen and carbon dioxide transported in human beings?

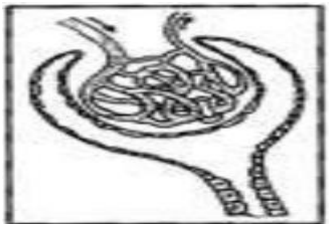
31. A person cannot read newspaper placed nearer than 50 cm from his eyes. Name the defect of vision he is suffering from. List its two possible causes. Draw a ray diagram to show how this defect may be corrected using a lens of appropriate focal length. 3

32. Analyse the following observation table showing variation of image - distance (v) with object - distance (u) in case of a convex lens and answer the questions that follow without doing any calculations: 3

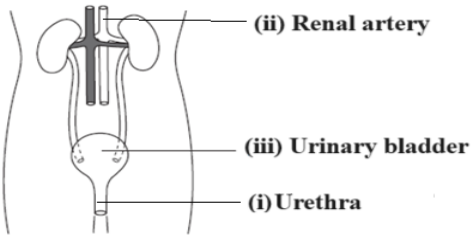
S. No.	Object-Distance u (cm)	Image-Distance v (cm)
1.	-100	+25
2.	-60	+30
3.	-40	+40
4.	-30	+60

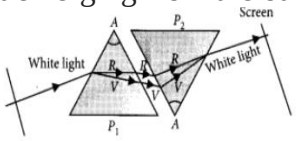
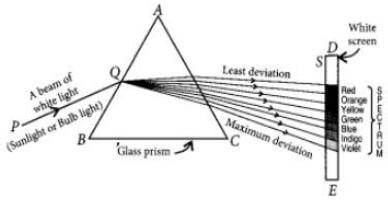
	5. -25 +100 6. -15 +120 i. What is the focal length of the convex lens? Give reason to justify your answer. ii. Write the serial number of the observation which is not correct. On what basis have you arrived at this conclusion? iii. Select an appropriate scale and draw a ray diagram for the observation at S. No. 2.	
33.	What is power of a lens? A doctor has prescribed a corrective lens of power +1.5D. Find the focal length of the lens. Is the prescribed lens diverging or converging?	3
	Section-D **Question No. 34 to 36 are long answer questions.**	
34.	Equal lengths of magnesium ribbons are taken in two test tubes A and B. Sulphuric acid is added to test tube A and carbonic acid in the test tube B in equal amounts. (a) Identify the test tube having vigorous reaction. (b) Give reason to support your answer. (c) Name the gas liberated in both the test tubes. How will you prove its liberation? (d) Write chemical equations for both reactions. (e) Out of the two acids taken above, which one will have (i) lower pH value. (ii) lower H^+ ion concentration. OR (a) A compound which is prepared from gypsum has the property of hardening when mixed with a proper quantity of water. (i) Identify the compound and write its chemical formula. (ii) Write the chemical equation for its preparation. (iii)Mention any one use of the compound. **(b)** Write the chemical equation involved in the preparation of sodium hydroxide from common salt. Name the process.	5
35.	a) Why are budding, fragmentation and regeneration considered asexual types of reproduction? b) With the help of neat diagrams explain the process of regeneration in Planaria. **OR** a) Rajesh observed a patch of greenish-black powdery mass on a stale piece of bread. (i) Name the organism responsible for this and its specific mode of asexual reproduction. (ii) Name its vegetative and reproductive parts. b) What is meant by vegetative propagation? How will a plant be benefitted if it reproduces by this method? (Any two points)	5
36.	(a) Name the type of mirror used in the following situations. Support your answer with a reason. (i) Headlights of a car (ii) Side/rear-view mirror of a vehicle (b) An object 4 cm in size is placed at a distance of 25 cm from a concave mirror of focal length 15 cm. At what distance from the mirror should the screen be kept so that a sharp image of the object can be obtained on screen? Find the nature and height of the image. OR	5

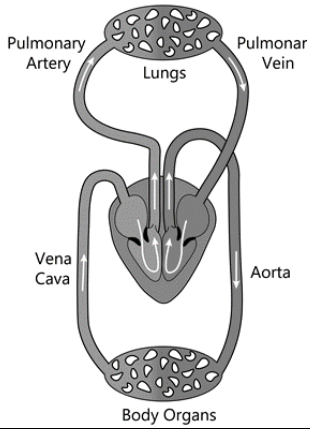
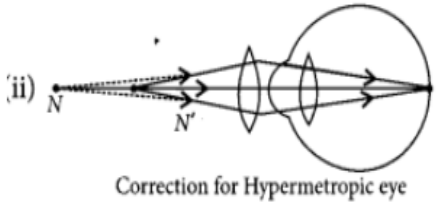
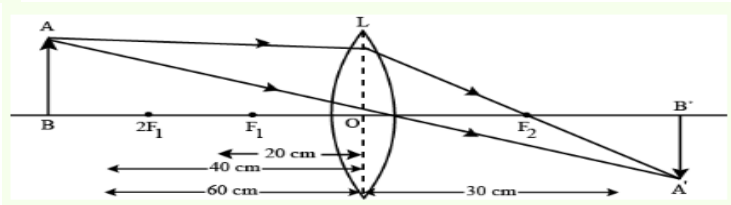
	(a) Draw ray diagrams for the following cases when a ray of light: (i) passing through the centre of curvature of a concave mirror is incident on it. (ii) Parallel to the principal axis is incident on the convex mirror. (b) The linear magnification produced by a spherical mirror is -1. Analysing this value state, the (i) type of mirror and (ii) position of the object with respect to the pole of the mirror. Draw any diagram to justify your answer.	
SECTION - E Question No. 37 to 39 are case-based/data-based questions with 2 to 3 short sub-parts. Internal choice is provided in one of these sub-parts.		
37.	pH is quite useful to us in a number of ways in daily life. Some of its applications are: **Control of pH of the soil**: - Plants require a specific pH range for their healthy growth. To find out the pH required for the healthy growth of a plant, you can collect the soil from various places and check the pH by using a universal indicator. **pH in our digestive system**: - During indigestion, the stomach produces too much acid and this causes pain and irritation. To get rid of this pain, people use bases called antacids. **Self-defence by animals and plants**: - Bee-sting leaves an acid which causes pain and irritation. The use of a mild base like baking soda on the stung area gives relief. (i) The pH of soil X is 7.5 and that of soil Y is 4.5. Which of the two soils should be treated with chalk to adjust its pH? (ii) Name an indicator which indicates the various levels of hydrogen ion concentration (iii) You have four solutions A, B, C and D. The pH of solution A is 2, B is 9, C is 12 and D is 7. (a) Identify the most acidic and most basic solutions (b) State the change in colour of pH paper on dipping in solution C and D. **OR** (iii) Mention the nature of toothpastes. How do they prevent tooth decay?	4
38.	Many unicellular organisms remove metabolic waste products by simple diffusion from the body surface into the surroundings. While complex multicellular organisms have specialized organs for excretion. Kidneys remove poisonous substances such as urea, waste salts and excess water from the blood and excrete them as urine. Nephron is a unit of filtration in kidneys that filters waste material. It selectively reabsorbs or excretes water with the help of	4

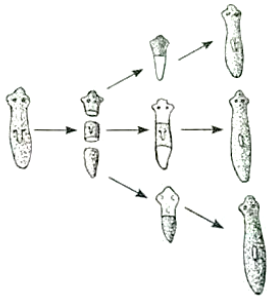
	capillaries that surround it. In case of kidney failure, an artificial kidney can be used. Plants use completely different strategies for excretion than those of animals. i) What is the benefit of selective absorption? ii) How is the amount of urine produced regulated? iii) Which process of urine formation occurs in the part shown below and also define the process.  **OR** iii) What are the methods used by plants to get rid of their waste products?	
39.	Atmospheric refraction is the phenomenon of the bending of light on passing through the earth's atmosphere. As we move above the surface of the earth, the density of air goes on decreasing. Local conditions like temperature etc. also affect the optical density of Earth's atmosphere. On account of atmospheric refraction, stars seen appear higher than they actually are; advanced sunrise; delayed sunset, the oval appearance of the sun at sunrise and sunset; stars twinkle, planets do not. i) What will be the colour of the sky when it is observed from a place in the absence of any atmosphere? ii) Explain the formation of the rainbow with the help of a diagram. iii) Why do stars appear to twinkle? Explain **OR** iii) Explain why the planets do not twinkle.	4

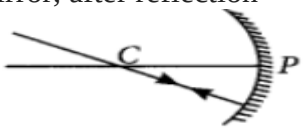
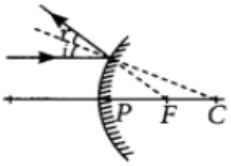
Q. No.	ANSWER KEY SET I	Marks
	Section–A	
1.	(b)(ii) and (iii)	1
2.	(c)(i) oxidizing agent, (ii)oxidation, (iii) reduction, (iv) reducing agent	1
3.	(b)Green crystals- ferrous sulphate, Brown substance- ferric oxide	1
4.	(b)Hydrogen	1
5.	(c)(i) 7 and (ii) 14	1
6.	(c)It catches fire and forms hydroxide	1
7.	(b)Mg and Mn	1
8.	(d) real, inverted and of the same size as that of the object	1

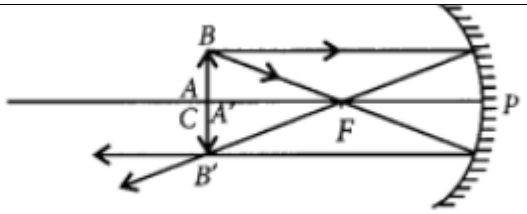
9.	a) Magnified and inverted	1
10.	c) $6CO_2 + 12H_2O \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} C_6H_{12}O_6 + 6O_2 + 6H_2O$ (Glucose)	1
11.	b) Gill capillaries→ oxygenated blood→ body cells→ deoxygenated blood→ heart → gills	1
12.	d) They have thick elastic walls, blood flows under high pressure and carry blood away from the heart to different parts of the body	1
13.	c) T_1	1
14.	b) Chlorofluorocarbon	1
15.	c) (i) and (ii)	1
16.	a) Breaking up of filaments into smaller bits.	1
17.	Both A and R are true and R is the correct explanation of assertion.	1
18.	(a) Both A and R are true and R is the correct explanation of A.	1
19.	(i) Both A and R are true and R is the correct explanation of A.	1
20.	(ii) A is true and R is false.	1
	SECTION B	
21.	(a) White to grey (b) Photochemical decomposition reaction. Photochemical decomposition reactions are decomposition reactions which take place in presence of light	½ ½ + 1
22.		½ -drawing ½ x 3= 1 ½
23.	a) (i)Absorption of light energy by chlorophyll. (ii) Conversion of light energy to chemical energy and splitting of water molecules into hydrogen and oxygen. (iii) Reduction of carbon dioxide to carbohydrates. **OR** a) (i) The enzymes present in intestinal juice convert proteins into amino acids, complex carbohydrates into glucose, and fats into fatty acids and glycerol. (ii) Bile juice emulsifies fats and breaks them down into small particles.	1+1
24.	The refractive index of diamond is more, hence the speed of light is lesser in diamond.	1 (1/2 +1/2)

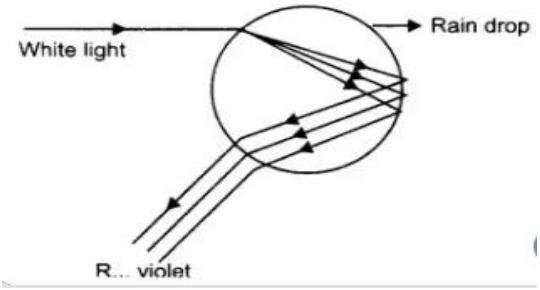
	$n = \frac{V_w}{V_d}$ Dividing both numerator and denominator by speed of light [c] we get n = $(\frac{V_w}{c}) \div (\frac{V_d}{c})$ = Inverse Ratio of refractive index of water and diamond. n=$\frac{2.42}{1.33}$ = 1.82 (approx.)	
25.	Newton was the first to use a glass prism to obtain the spectrum of a white light. He then placed a second identical prism in an inverted position with respect to the first prism. This allowed all the colours of the white light to pass through the second prism combining to form a white light emerging from the other side of the second prism.  OR  The phenomenon of the splitting up of the white light into its constituents' colours is called dispersion of light. Dispersion of light is caused due to, different constituents' colours of light after different refractive indices to the material of the prism.	(1+1) (1+1/2+1/2)
26.	a) 10000J because only 10 % of energy is available for the next trophic level. b) No, since the loss of energy at each step is so great that very little usable energy will remain after 4 trophic levels	1+1
	SECTION C	
27.	Displacement reaction: - A reaction in which highly reactive metal displaces a less reactive metal from its salt solution. Double displacement reaction: - A reaction in which there is mutual exchange of ions between the reactants. (i) Double displacement reaction (ii) Displacement reaction	1+1 ½ + ½
28.	(i) (a) Magnesium (b)copper (ii) Metal oxides which react with both acids as well as bases to form salt and water. Aluminium oxide and zinc oxide OR (a) Test tube A (b) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$	½ ½ 1 ½ + ½ 1 1

	Displacement reaction	1
29.		3
30.	a) During inhalation, ribs move up and diaphragm moves down to increase the chest cavity space. Lungs get filled with air. During exhalation, ribs move down and diaphragm moves up to its former position. Thus, it reduces chest cavity space and air is pushed out. b) The <u>oxygen</u> is transported in human beings <u>by hemoglobin</u> present in the red blood cells. The oxygen molecules can combine with the hemoglobin molecules easily. It is mostly transported from body tissues <u>in the dissolved form</u> in our blood plasma to the lungs.	2 1
31.	The person is suffering from hypermetropia. (i) Shortening of the eyeball (ii) Focal length of crystalline lens is too long.  Correction for Hypermetropic eye	(1+1/2 +1/2+1)
32.	i. From the observation 3, the radius of curvature of the lens is 40 cm as distance of object and the distance of the image is same. f =R/2 = 20cm ii. S. No. 6 is not correct, because for this observation the object distance is between focus and pole and for such cases, the image formed is always virtual. But in this case real image is formed as the image distance is positive. iii 	(1+1+1)
33.	Power is defined as the reciprocal of focal length.	(1+1+1)

	a) P= 1/f) = 1/1.5 =0.67m **prescribed corrective lens by the doctor is a converging lens.**	
	SECTION D	
34.	(a) Test tube A (b) Sulphuric acid is a strong acid (c) H_2 gas. H_2 gas catches fire when a burning candle is brought near it. (d) $Mg + H_2SO_4 \rightarrow MgSO_4 + H_2$ $Mg + H_2CO_3 \rightarrow MgCO_3 + H_2$ (e) (i) Sulphuric acid (ii) Carbonic acid OR (i) (a) Plaster of Paris, $CaSO_4$. ½ H_2O (b) $CaSO_4.2H_2O \xrightarrow[373\,K]{Heat} CaSO_4.\frac{1}{2}H_2O + 1\frac{1}{2}H_2O$ (c)Any one use (ii) $2NaCl_{(aq)} + 2H_2O_{(l)} \rightarrow 2NaOH_{(aq)} + Cl_{2(g)} + H_{2(g)}$ Chlor- alkali process	1 1 ½ + ½ ½ + ½ ½ + ½ 1 1 1 1 1
35.	a) It is because <u>gamete formation does not happen</u> during these modes of reproduction and a <u>single parent</u> carries out the process of reproduction. b) Regeneration is the process by which some organisms replace or restore lost body parts. There are specialized cells in Planaria to carry out the process of regeneration. These cells will proliferate and produce large mass of cells. From this mass of cells, different cells undergo changes to become various cell types and tissues. These changes which take place in a specific sequence are called as development. (Any appropriate answer)  Regeneration in *Planaria* **OR**	2 1 ½ + 1 ½= 3

	a) (i) The greenish black powdery mass on a stale piece of bread is due to bread mould (Rhizopus) which reproduces by spore formation. (ii)Hyphae or thread like structures are the vegetative part and tiny blob like structures or sporangia are the reproductive parts. b) Vegetative propagation is an asexual method of reproduction in which new plants are obtained from plant parts such as the stem, leaves and roots without the help of reproductive organs. Plants raised by vegetative propagation *can bear flowers and fruits earlier than those produced from seeds*. Seedless plants can be grown through vegetative reproduction. Through cutting and grafting methods, flowers and fruits can be grown in a shorter time.	½ + ½ ½ + ½ 1+2
36.	(i) a) Headlights of a car -Concave mirror When the light is placed on the focus of the mirror, it produces a strong beam of light which helps us to see the vehicles and the road ahead clearly b) Side/rear-view mirror of a car -Convex mirror As we need the image erected, upright straight, and diminished, so that there is a wider view of the road behind; we use a convex mirror (ii) 1/f = 1/v+1/u $\Rightarrow \frac{1}{v} = \frac{1}{-15} + \frac{1}{25}$ $v = -37.5cm$ $\Rightarrow m = -\frac{(-37.5)}{-25} = \frac{h_i}{4}$ $h_i = -\frac{37.5 \times 4}{25}$ To get a sharp image, v=37.5cm The image is real, inverted and magnified OR (i) Ray of light passing through centre of curvature of concave mirror, after reflection  Ray of light parallel to the principal axis is incident on a convex mirror after reflection appear to diverge from the principal focus of a convex mirror.  (ii) (i) Concave mirror because the image is real, inverted. (ii) Object is placed at C.	(1+1) (1+1+1) (1+1)

		(1+1+1)
SECTION E		
37.	(i) Soil Y (ii) Universal indicator (iii) (a) most acidic-A, most basic-C (b)C- blue, D- green OR Basic, it neutralises the acid present in the mouth.	1 1 ½+ ½ ½+ ½ 1+1
38.	**a)** The glomerular filtrate entering the renal tubule contains many useful substances. Hence, as the filtrate passes down the tubule, water and other useful substances required by the body are reabsorbed. b) The amount of water reabsorbed depends on how much excess water there is in the body, and on how much of dissolved waste there is to be excreted. c) Filtration: Filtration of blood takes place in Bowman's capsule from the capillaries of glomerulus. The filtrate passes into the tubular part of the nephron. This filtrate contains glucose, amino acids, urea, uric acid, salts and a major amount of water. **OR** c) Plants get rid of: (any two) 1. of water by transpiration. 2. waste products may be stored in vacuoles or may be stored in leaves which fall off. 3. resin and gums are stored in xylem. 4. some waste substance may be excreted in the soil. 5. as by products move out of the plants by diffusion through stomata.	1 1 2 2
39.	(i) Dark/black	(1+1+2)

	(ii)When sunlight splits due to water drops suspended in air, causing the band of seven colours is called rainbow. Water droplets acts as tiny prism in the sky. The sunlight when enters these tiny droplets undergo internal reflection and also refract these rays which are dispersed causing a band of seven colours called rainbow. Rainbow is always formed in the direction opposite to the sun.  (iii)Due to atmospheric refraction, position of star visible from sun, is slightly different from its actual position. This apparent position of the star is not stationary, but keeps on changing with change in physical condition on earths atmosphere. Since the stars are very distant, they are approximately point-sized sources of light. As the path of rays of light coming from the star goes on varying slightly, the apparent position of the star fluctuates and the amount of starlight entering the eye flickers the star sometimes appears brighter, and at some other time, fainter, which is the twinkling effect. OR Planets do not emit light. However, they become visible due to reflection of light falling on them. The planets are much closer to the earth and thus can be considered as the extended source of light. The fluctuations in the light coming from various points of the planet due to atmospheric refraction get averaged out. As a result, no twinkling of planets is seen.	