



SHRI GULABRAO ESHWARA KHANDVE EDUCATIONAL FOUNDATION,
JAGADGURU INTERNATIONAL SCHOOL, LOHEGAON PUNE
 TERM I EXAMINATION (2025 - 2026)

Class: X

Date: 22/08/2025

Roll No. :

SET A

Subject: Science (086)

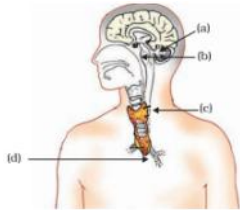
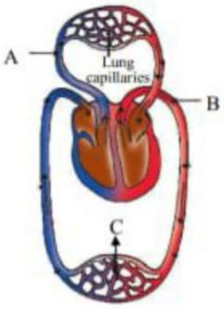
M.M.: 80

Time: 3 Hrs

General Instructions:

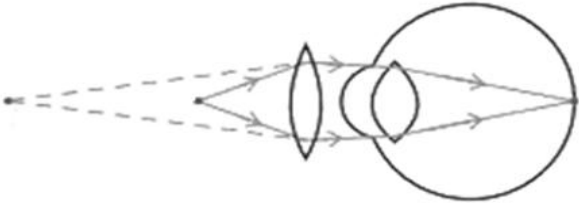
- (i) This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
- (ii) All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

Section - A		Marks
1	<p>Which of the equations shows the correct conversion of CO₂ and H₂O into carbohydrates in plants?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>(a)</p> $6\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow[\text{Heat energy}]{\text{Chlorophyll}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 12\text{H}_2\text{O}$ <p>(b)</p> $6\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 12\text{H}_2\text{O}$ </div> <div style="text-align: center;"> <p>(c)</p> $6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow[\text{Sunlight}]{\text{Chlorophyll}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 + 6\text{H}_2\text{O}$ <p>(d)</p> $6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow[\text{Heat energy}]{\text{Chlorophyll}} \text{C}_6\text{H}_{12} + 6\text{O}_2 + 6\text{H}_2\text{O}$ </div> </div>	1
2	<p>Application of Absciscic acid on plants promote:</p> <p>(a) Development of fruits (b) Wilting of leaves</p> <p>(c) Elongation of stem (d) Formation of flowers</p>	1
3	<p>The end product of meiosis in a reproductive cell in plants is :</p> <p>(a) Zygote (b) Pollen grains (c) Sperms (d) Egg</p>	1
4	<p>Which of the following hormone prepares our body for action in emergency situations ?</p> <p>(a) Testosterone (b) Growth hormone (c) Adrenaline (d) Insulin</p>	1
5	<p>A pair of endocrine glands located in the human brain is</p> <p>(a) parathyroid and pituitary gland (b) pineal and thymus</p> <p>(c) hypothalamus and thymus (d) hypothalamus and pineal</p>	1
6	<p>Sensory nerve of a reflex arc carries information from the receptor cells to the:</p> <p>(a) spinal cord (b) brain</p> <p>(c) muscle of Effector Organ (d) bones of receptor organ</p>	1
7	<p>A doctor advised a person to take an injection of insulin because</p> <p>(a) His heart was beating slowly (b) his blood pressure was low</p> <p>(c) he was looking short in height (d) his pancreas was not secreting required hormone and proper amounts</p>	1
<p>The following two questions consist of two statements – Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below:</p> <p>(a) Both A and R are true, and R is the correct explanation of A.</p> <p>(b) Both A and R are true, and R is not the correct explanation of A.</p> <p>(c) A is true but R is false. (d) A is false but R is true.</p>		

8	<p>Assertion(A): Transpirational pull helps in the absorption and upward movement of water and dissolved minerals in plants</p> <p>Reason(R): The effect of root pressure in transport of water is more significant at night.</p>	1
9	<p>Assertion (A): In the human heart electricals have thicker muscles than atria.</p> <p>Reason (R): Electricals have to pump the blood into various organs.</p>	1
10	Although to 'Pepsin' and 'trypsin' are both protein digesting enzymes yet they differ from each other justify the statement by giving one difference between them.	2
11	<p>Name The following:</p> <p>(i) plant growth promoting hormone</p> <p>(ii) plant growth inhibiting hormone OR</p> <p>(ii) Label the endocrine glands in the figure</p> 	2
12	<p>What is the first step of cellular respiration? In which part of the cell does it occur?</p> <p>Write the equation for the process of breakdown of glucose in human cell:</p> <p>(i) in presence of oxygen (ii) due to lack of oxygen</p>	2
13	<p>(i) Study the diagram below showing the schematic representation of transport and exchange of gases in human heart and name the part labelled as A,B and C. Mention the function of each part.</p> <p>(ii) Explain how separation of right and left side of heart is useful for birds.</p> 	3
14	<p>(i) Draw a diagram of human excretory system and label on it the following parts:</p> <p>A. Kidney B. Ureter C. Urinary bladder D. Urethra</p> <p>(ii) Write one main function of each of the labelled parts.</p>	3
15	<p>Read the following passage and answer the following questions.</p> <p>In life there are certain changes in the environment called stimuli to which they respond appropriately. Touching a flame suddenly is dangerous situation for us. One way is to think consciously about the possibility of burning and then moving the hand but our body has been designed in such a way that we save ourselves from such situations immediately.</p> <p>(i) Name the action by which we protect ourselves in the situation mentioned above and define it.</p> <p>(ii) Write the role of (a) motor and (b) relay neuron.</p> <p>(iii) (a) What are the two types of nervous system in human body. Name the components of them. OR</p> <p>(iii) (b) Which part of human brain is responsible for (a) Thinking (b) Picking up pencil</p> <p>(c) Controlling blood pressure (d) Controlling hunger.</p>	4
16	<p>(i) List three points of difference between nervous and hormonal mechanism for control and coordination in animals.</p> <p>(ii) How are auxins related to the bending of plant shoots towards unidirectional light explain.</p>	5

SECTION B (CHEMISTRY)		
17	To balance the following chemical equation, the values of the coefficients x, y and z must be respectively: $x \text{Zn}(\text{NO}_3)_2 \xrightarrow{\Delta} y \text{ZnO} + z \text{NO}_2 + \text{O}_2$ (a) 4, 2, 2 (b) 4, 4, 2 (d) 2, 2, 4 (d) 2, 4, 2	1
18	Which information is not conveyed by a balanced chemical equation? (a) Physical states of reactants and products (b) Symbols and formulae of all the substances involved in a particular reaction (c) Number of atoms/molecules of the reactants and products formed (d) Whether a particular reaction is actually feasible or not	1
19	$\text{Mg(s)} + \text{CuO(s)} \rightarrow \text{MgO(s)} + \text{Cu(s)}$ This equation represents: (a) decomposition reaction as well as displacement reaction (b) combination reaction as well as double displacement reaction (c) redox reaction as well as displacement reaction (d) double displacement reaction as well as redox reaction	1
20	The salt present in tooth enamel is: (a) Calcium phosphate (b) Magnesium phosphate (c) Sodium phosphate (d) Aluminium phosphate	1
21	Which salt is acidic in nature? (a) NH_4Cl (b) $\text{CH}_3\text{COONH}_4$ (c) NaCl (d) Na_2CO_3	1
22	The colour of the solution observed after 30 minutes of placing zinc metal to copper sulphate solution is (a) Blue (b) Colourless (c) Dirty green (d) Reddish Brown	1
23	You have three aqueous solution AB and C as given below A potassium nitrate B Ammonium chloride C Sodium carbonate The ascending order of PH of this solution is A<B<C (b) B<C<A (c) C<A<B (d) B<A<C	1
The following question consists 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.		
24	Assertion(A): Silver bromide decomposition is used in black and white photography. Reason (R): Light provides energy for this exothermic reaction.	1
25	(a) Copper powder is taken in a china dish and heated over a burner. Name the product formed and state its colour. Write the chemical equation for the reaction involved. OR (b) Write chemical equation for the chemical reaction which occurs when the aqueous solutions of barium chloride and sodium sulphate react together. Write the symbols of the ions present in the compound precipitated in the reaction.	2
26	Answer the following questions in the context of electrolysis of water : (a) Why is this reaction/process called a decomposition reaction?	3

	(b) Giving reason state whether this reaction is exothermic or endothermic. (c) Name the gases collected at the anode and cathode. (d) What is the mass ratio of the gases collected at the anode and cathode?	
27	Write the common name and the chemical name of the compound $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$. Write the method of its preparation. Give chemical equation for the reaction, when water reacts with $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$.	3
28	Salts play a very important role in our everyday life. Sodium chloride which is known as common salt is used in almost every kitchen. Baking soda is also a salt used in faster cooking as well as in baking industry. The family of salts is classified on the basis of cations and anions present in them. (a) Identify acid and base from which sodium chloride is formed. (1) (b) Find the anion and the cation present in calcium sulphate. (1) (c) "Sodium chloride and washing soda both belong to the same family of salts." Justify this statement. (2) Or (c) Define the term pH scale. Name the salt obtained by the reaction of Potassium hydroxide and Sulphuric acid and give the pH value of its aqueous solution. (2)	4
29	(a) A few crystals of ferrous sulphate were taken in a dry boiling tube and heated. Tiny water droplets were observed in the tube after some time. (i) From where did these water droplets appear? Explain. (ii) What colour change will be observed during heating? (iii) How many molecules of water are attached per molecule of FeSO_4 crystal? Write the molecular formula of crystalline forms of (I) Copper sulphate, and (II) Sodium carbonate. (iv) State how is Plaster of Paris obtained from gypsum. Write two uses of Plaster of Paris. OR An acid 'X' present in tamarind when mixed with 'Y', produces a mixture of 'Z'. 'Z' on addition to a dough when heated makes cake soft and spongy. 'Y' is prepared from common salt and helps in faster cooking. (i) Write the common names of 'X', 'Y' and 'Z', and the chemical formula of 'Y' (ii) How is 'Y' prepared and how does it help in making cake soft and spongy? Illustrate the reaction with suitable chemical equation. (iii) Write the name and chemical formula of a mild base other than 'Y' used as an antacid.	5
SECTION C (PHYSICS)		
30	Arnav was making notes and he wrote down the following statements from his understanding of reflection from curved surfaces. Concave mirrors can produce both real and virtual images depending on the position of the object. Convex mirrors always produce real, inverted images regardless of the object's position. In both concave and convex mirrors, the image location can be determined using the mirror formula $\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$ where f is the focal length, v is the image distance, and u is the object distance. Choose from the following the correct option that lists the correct statements about reflection from curved surfaces. (a) I and II (b) I, II and III (c) II and III (d) I and III	1
31	Choose the correct option from the below which explains the reason for us to perceive the day sky as blue.	1

	<p>As sunlight passes through the atmosphere, shorter wavelengths, such as blue are scattered more than other colors.</p> <p>(b) The sky appears blue because all colors are scattered equally, but blue light is stronger and more visible to the human eye.</p> <p>(c) The blue color of the sky is due to longer wavelengths like red and orange scattering more than shorter wavelengths, making blue stand out more.</p> <p>(d) The atmosphere contains blue-colored particles that give the sky its blue appearance.</p>	
<p>The following two questions consist of two statements – Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below:</p> <p>(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.</p>		
32	<p>Assertion: The centre of curvature is not a part of the mirror it lies outside its reflecting surface.</p> <p>Reason: The reflecting surface of a spherical mirror is a part of the sphere this sphere has a centre.</p>	
33	<p>Draw a ray diagram to show where must an object be placed in front of a convex lens so that the image formed is</p> <p>(i) at Infinity . (ii) of same size of that of the object. (iii) inverted and enlarged. (iv) upright and enlarged.</p>	2
34	Three resistors of 6 ohms, 4 ohms and 4 ohms are connected together so that the total resistance is 8 ohms. Draw the diagram to show this arrangement and give reason to justify your answer.	2
35	 <p>The above image shows a corrective measure for a particular defect of vision.</p> <p>(i) Identify the defect of vision and state what kind of lens is used to correct this deficiency.</p> <p>(ii) Draw and label a ray diagram that shows the defect of vision in the above case before correction.</p>	3
36	<p>A copper wire has diameter 0.5 mm and resistivity of 1.6×10^{-8} ohm-metre. What will be the length of this wire to make its resistance 10 ohm.</p> <p>How much does the resistance change if diameter is doubled?</p>	3
37	Out of two electric bulbs of 50 W - 20 V and 100W-220 V, which one will glow brighter when they are connected (i) in series and (ii) in parallel	3
38	<p>A person is unable to see objects distinctly placed within 50 cm from his eyes. Name the defect of the vision the person is suffering from and list its two possible causes.</p> <p>Draw a diagram to show the defect in the above case.</p> <p>Mention the type of lens used by him for correction of the defect.</p> <p>Calculate its power. Assume that the near point falls the normal eye is 25cm.</p>	4
39.	<p>Four registers an ideal ammeter, an ideal voltmeter, a key (K) and battery are connected in a circuit as shown below initially the key (K) is open.</p> <p>What is the net resistance of the circuit?</p> <p>What will be the reading of the ammeter and voltmeter?</p> <p>If key (K) is closed how will it affect the net current in the circuit?</p>	5

