



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 B

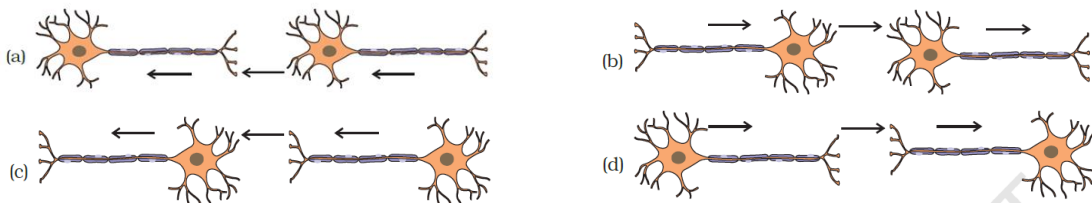
Subject: Science (086)

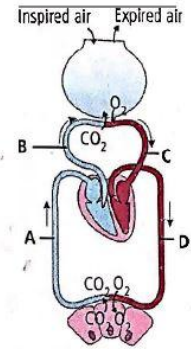
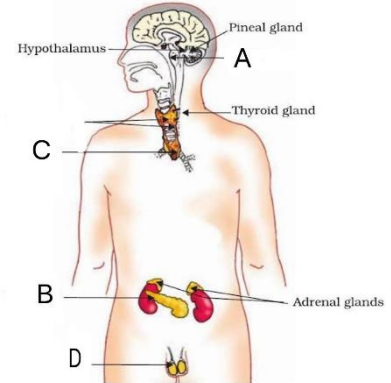
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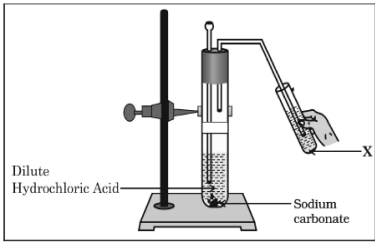
Time: 3 Hrs

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	Fall of mature leaves and fruits from plants is triggered by which of the following substance? (a) Auxin (b) Cytokinin (c) Gibberellin (d) Abscissic acid	1
2	Which of the following is the correct sequence of events of sexual reproduction in flower? (a) Pollination, Fertilization, Seed, Embryo (b) Seed, Embryo, Fertilization, Pollination (c) Pollination, Fertilization, Embryo, Seed (d) Embryo, Seed, Pollination, Fertilization	1
3	Which of the following does not act as an endocrine gland as well as exocrine gland? (a) Testes (b) Ovary (c) Pituitary (d) Pancreas	1
4	What is the correct direction of flow of electrical impulses? 	1
5	Involuntary actions in the body are controlled by (a) medulla in fore brain (b) medulla in mid brain (c) medulla in hind brain (d) medulla in spinal cord	1
6	Choose the function of the pancreatic juice from the following (a) trypsin digests proteins and lipase carbohydrates (b) trypsin digests emulsified fats and lipase proteins (c) trypsin and lipase digest fats (d) trypsin digests proteins and lipase emulsified fats	1
7	During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the (a) cytoplasm (b) chloroplast (c) mitochondria (d) golgi body	1
The following two questions 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.		
8	(A): The effect of auxin hormone on the growth of root is exactly opposite to that on a stem. (R): Auxin hormone increases the rate of growth in root and decreases the rate of growth in stem.	1

9	(A): Brain and spinal cord comprises only of myelinated neurons. (R): The Axon of neuron is coated with myelin sheath and the region where it is absent is called nodes of ranvier.	
10	a) Differentiate between Fragmentation and Regeneration. b) "Fragmentation cannot be the method of reproduction in all multicellular organisms " justify this statement. OR Why cannot fertilisation take place in flowers if pollination does not occur?	2
11	(a) Define reflex arc. (b) Trace the sequence of events which occur in our body when a bright light is focused on your eyes.	2
12	In the given representation of transport and exchange of oxygen and carbon dioxide in human heart (i)label the parts marked as a, b, c, and d (ii)Write two points of difference between pulmonary artery and pulmonary vein. 	2
13	What are the major parts of the brain? Mention the functions of different parts.	3
14	(a) Distinguish between pollination and fertilization (b) Mention the site and product of fertilisation in a flower (c) Draw a neat, labelled diagram of a pistil showing pollen tube growth and its entry into the ovule.	3
15	Observe the given figure and answer the following questions: (a) Name the secretion and function of gland A (b) Name the secretion and function of gland B (c) Name the secretion and function of gland C (d) Name the secretion and function of gland D 	4
16	Some plants like the pea plant climb up other plants or fences by means of tendrils. These tendrils are sensitive to touch. When they come in contact with any support, the part of the tendril in contact with the object does not grow as rapidly as the part of the tendril away from the object. This causes the tendril to circle around the object and thus cling to it. More commonly, plants respond to stimuli slowly by growing in a particular direction. Because this growth is directional, it appears as if the plant is moving. a) How many types of tropism are shown by plants? Explain (3) b) The touch me not plant is an example of which tropism? (1) c) Give one example of chemotropism? (1) OR Our respiratory system is made up of breathing organs and blood vessels that help in the exchange of gases. When we breathe in, air enters our lungs and oxygen from air diffuses into blood. At the same time, carbon dioxide diffuses out of blood into lungs and is exhaled out. (a) What is respiration? Give difference between aerobic and anaerobic respiration. (2)	5

	(b) What is the role of diaphragm in breathing? (1) (c) How does the exchange of gases take place in the alveoli? (1) (d) What are the effects of smoking on the respiratory system? (1)																										
SECTION B (CHEMISTRY)																											
17	In order to balance the following chemical equation, the values of the coefficients x and y respectively are: $x \text{ Pb}(\text{NO}_3)_2 \xrightarrow{\text{Heat}} 2 \text{ PbO} + y \text{ NO}_2 + \text{O}_2$ (a) 2,4 (b) 2,2 (c) 2,3 (d) 4,2	1																									
18	In the experimental setup given below, it is observed that on passing the gas produced in the reaction in the solution 'X' the solution 'X' first turns milky and then colourless The option that justifies the above stated observation is that 'X' is aqueous calcium hydroxide and (a) it turns milky due to carbon dioxide gas liberated in the reaction and after some time it becomes colourless due to formation of calcium (b) it turns milky due to formation of calcium carbonate and on passing excess of carbon dioxide it becomes colourless due to formation of calcium hydrogen carbonate which is soluble in water. (c) it turns milky due to passing of carbon dioxide through it. It turns colourless as on further passing carbon dioxide, sodium hydrogen carbonate is formed which is soluble in water. (d) the carbon dioxide liberated during the reaction turns lime water milky due to formation of calcium hydrogen carbonate and after some time it turns colourless due to formation of calcium carbonate which is soluble in water. 	1																									
19	Select the correct option from the following: <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"><thead><tr><th></th><th>Salt</th><th>Parent acid</th><th>Parent base</th><th>Nature of salt</th></tr></thead><tbody><tr><td>(a)</td><td>Sodium acetate</td><td>CH₃COOH</td><td>NaOH</td><td>Neutral</td></tr><tr><td>(b)</td><td>Sodium carbonate</td><td>H₂CO₃</td><td>NaOH</td><td>Basic</td></tr><tr><td>(c)</td><td>Sodium chloride</td><td>HCl</td><td>NaOH</td><td>Acidic</td></tr><tr><td>(d)</td><td>Sodium nitrate</td><td>HNO₃</td><td>NaOH</td><td>Acidic</td></tr></tbody></table>		Salt	Parent acid	Parent base	Nature of salt	(a)	Sodium acetate	CH ₃ COOH	NaOH	Neutral	(b)	Sodium carbonate	H ₂ CO ₃	NaOH	Basic	(c)	Sodium chloride	HCl	NaOH	Acidic	(d)	Sodium nitrate	HNO ₃	NaOH	Acidic	1
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(c)	Sodium chloride	HCl	NaOH	Acidic																							
(d)	Sodium nitrate	HNO ₃	NaOH	Acidic																							
20	Consider the following chemical equation I and II The correct statement about these equations is (a) 'I' is a displacement reaction and 'II' is a decomposition reaction. (b) 'I' is a displacement reaction and 'II' is double displacement reaction. (c) Both 'I' and 'II' are displacement reactions. (d) Both 'I' and 'II' are double-displacement reactions. <div style="display: flex; justify-content: space-between;"><div>I. $\text{Mg} + 2\text{HCl} \longrightarrow \text{MgCl}_2 + \text{H}_2$</div><div>II. $\text{NaOH} + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$</div></div>	1																									
21	An aqueous solution of sodium acetate will turn: a) methyl orange yellow b) red litmus blue c) phenolphthalein solution pink d) all of these	1																									
22	The chemical reaction involved in the corrosion of metal is that of: (a) oxidation as well as displacement (b) reduction as well as combination (c) oxidation as well as combination (d) reduction as well as displacement.	1																									
23	In the given series of reactions, what are Y and Z respectively Q is used in removing permanent hardness of water. <div style="text-align: center; margin: 10px 0;">$\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2 + \text{NH}_3 \longrightarrow \text{X} + \text{Y}$$\downarrow \text{ } \Delta \text{ } -\text{H}_2\text{O}, -\text{CO}_2$$\text{Q} \xleftarrow{+10\text{H}_2\text{O}} \text{Z}$</div> (a) NaHCO ₃ , NaOCl ₂ (b) NH ₄ Cl, Na ₂ CO ₃ (c) Na ₂ CO ₃ , NH ₄ Cl (d) Na ₂ CO ₃ , NaHCO ₃	1																									

The following question consists of two statements – Assertion (A) and Reason (R).

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24	Assertion (A): Reaction of Quicklime with water is an exothermic reaction. Reason (R): Quicklime reacts vigorously with water releasing a large amount of heat.	1
25	When the solution of substance X is added to a solution of potassium iodide, then a yellow solid separates out from the solution. a) What do you think substance X is likely to be? b) Name the substance which the yellow solid consists of. c) Which characteristic of chemical reactions is illustrated by this example? d) Write a balanced chemical equation for the reaction which takes place.	2
26	On heating X at 373 K, it loses water molecules and becomes Y. Y is a substance which doctors use for supporting fractured bones in the right position. a) Identify X and Y. b) How can X be reobtained from Y? Write the equation representing the same.	3
27	A dry pellet of a common base B, when kept in open absorbs moisture and turns sticky. The compound is also a by-product of chlor-alkali process. Identify B. What type of reaction occurs when B is treated with an acidic oxide? Write a balanced chemical equation for one such reaction.	3
28	Common salt is a very important compound for our daily life. It's chemical name is sodium chloride and it is used as a raw material in the manufacture of caustic soda, washing soda, baking soda etc. It is also used in the preservation of pickles, butter, meat etc. (i) Name the acid and the base from which common salt can be obtained. (1) (ii) State the nature (acidic/basic/neutral) of sodium chloride. Give reason for the justification for your answer. (1) (iii) (A) What happens when electric current is passed through an aqueous solution of sodium chloride (called brine)? Name the products obtained along with the corresponding places in the electrolytic cell where each of these products is obtained. (2) OR (iii) (B) How is washing soda obtained from sodium chloride? Give chemical equation of the reactions involved in the process. (2)	4
29	A metal X forms a water-soluble salt XNO_3 , When an aqueous solution of is added to common salt solution, then a white precipitate of compound Y is formed along with sodium nitrate solution. Metal X is said to be the best conductor of electricity and it does not evolve hydrogen when put in dilute hydrochloric acid. (a) What is metal X? (b) What is salt XNO_3 ? (c) Name the compound Y. (d) Write the chemical equation of the reaction which takes place on reacting XNO_3 solution and common salt solution. Mention the physical states of all the reactants and products. (e) What type of chemical reaction is illustrated by the above equation?	5

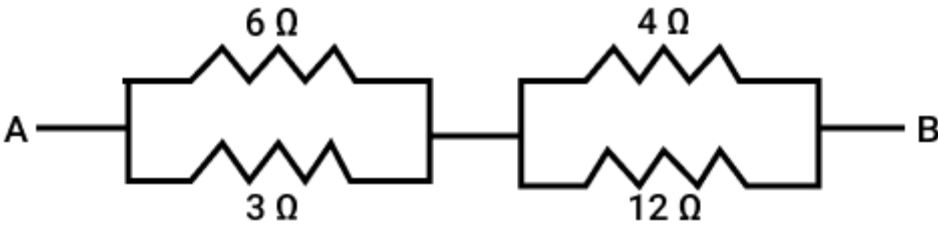
SECTION C (PHYSICS)

30	The minimum number of identical bulb operating 4 V; 6 W, that can work safely with desired brightness, when connected in series with 240 V main supply is (a) 20 (b) 40 (c) 60 (d) 80	1
31	The colour of light for which the refractive index of glass is minimum (a) Red (b) Orange (c) Blue (d) Yellows	1

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32	Assertion (A): Electrons move from lower potential to higher potential in a conductor Reason(R): A dry cell maintains electric potential difference across the ends of a conductor.	1
33	Find the equivalent resistance between A and B. 	2
34	A person needs a lens of power -5.0 D For correction of his vision. What is the possible defect for the person? What is the focal length of the corrective lens?	2
35	A student has focused the image of an object of height 3 cm on a white screen using a concave mirror of local length 12 cm. If the distance of the object from the mirror is 18 cm, find the values of the following. (i) Distance of the image from the mirror. (ii) Height of the image.	3
36	Suggest the appropriate reasons for the following. (i) Why do stars twinkle at night ? (ii) What is the sun visible to us two minutes before actual sunrise and two minutes after sunset.	3
37	An electric iron is rated 220V , 2 kW. (i) If the iron is used for 2h daily, find the cost of running it for one week if it costs ₹4.25 per kWh. (ii) Why is the fuse absolutely necessary in a power circuit?	3
38	A candle flame is placed in front of the reflecting surface of convex mirror of focal length f . The distance of the flame from the pole of the mirror is f , its image is formed: (i) At Infinite distance from the mirror (ii) Behind the mirror at principle focus (iii) behind the mirror at distance $2F$ (iv) Behind the mirror at the distance $F/2$	4
39	Draw a schematic diagram of a circuit consisting of battery of 3 cells of 2V each, a combination of three resistors of 10 ohms, 20 ohms and 30 ohms connected in parallel, plug key and ammeter, all connected in series. Use the circuit to find the value of following, (i) Current through each resistors (ii) Total current in the circuit (iii) Total effective resistance of the circuit	5