SCIENCE – Code no. 086
SAMPLE QUESTION PAPER*
CLASS – X (2025-26)

Max. Marks: 80 **Time Allowed: 3 hours**

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	Select the group in which all organisms have the same mode of nutrition. A. Cuscuta, yeast, legumes, leeches and tapeworm B. Cactus, ticks, lice, leeches and cow C. Cuscuta, ticks, lice, leeches and tapeworm D. Cactus, grass, lice, lion and tapeworm	1
2	Which of the following options indicates the products formed after breakdown of the glucose in our muscle cells when there is lack of oxygen? A. Ethanol + carbon dioxide + Energy B. Lactic acid + Energy C. Lactic acid + carbon monoxide + Energy D. Carbon dioxide + Water + Energy	1
3	Which of the following is a correct combination of function and part of the brain? A. Posture and balance: Cerebrum B. Salivation: Medulla in midbrain C. Hunger: Pons in hindbrain D. Blood pressure: Medulla in hindbrain	1
4	The blood glucose level in a patient was very high. It may be due to inadequate secretion of: A. growth hormone from pituitary gland B. oestrogen from ovary C. insulin from pituitary gland D. insulin from pancreas	1
5	In a cross between black furred rabbit (B) and white furred rabbit (b), all offspring were found to have black fur. What can be inferred about the genetic makeup of the parent rabbits? A. BB X bb B. Bb X Bb C. Bb X bb D. bb X bb	1

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6	Which are the correct statements related to ozone? (i) Ozone layer helps in increasing the UV radiations reaching earth. (ii) Ozone is a deadly poison. (iii) Ozone layer shields the earth from UV radiations. (iv) Ozone layer prevents UV rays which cause skin cancer. (v) Ozone is formed with the help of Chloroflurocarbons. A. (i), (ii), (iii) B. (ii), (iii), (iv) C. (iii), (iv), (v) D. (i), (iv), (v)	1
7	Which of the following human activities has resulted in an increase of non-biodegradable substances? A. Organic farming B. Increase in tree plantation C. Use of plastic as packaging material D. Composting of kitchen waste	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	**Assertion (A):** Tallness of a pea plant is controlled by an enzyme**.** **Reason (R):** The gene for that enzyme makes proteins which help the plant to be tall.	1
9	**Assertion (A):** Vulture will always have the least amount of pesticides in a food chain. **Reason (R)**: Vulture occupies the last trophic level and it gets only 10% of energy of the previous trophic level.	1
10	Unlike animals, plants do not have any excretory products as they do not eat food. Comment upon the statement with justification.	2
11	*Students to attempt either option A or B.* A. How many chambers are there in the heart of the following organisms? How is mixing of oxygenated and deoxygenated blood prevented in their body? (i) Fishes (ii) Humans **OR** B. Explain the mechanism by which the water is transported in plants?	2
12	About 100 acres of forest land was declared as Natural reserve park. The following organisms were predominant in the Natural reserve park:	2

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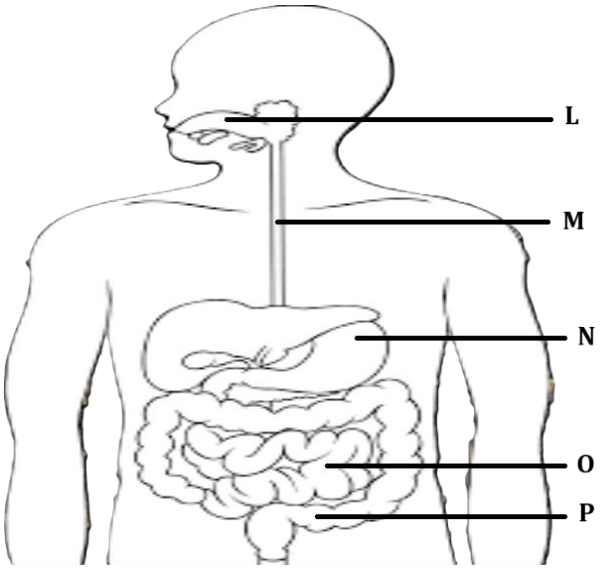
	rabbit, frog, grass, fish, fox, water insects, zebra, peacock, snake, trees, bird, owl, insects, tiger, vulture, duck. Create a food web comprising two separate food chains with different producers by using the above data.	
13	Draw and explain how the nerve cells help in transmission of impulses?	3
14	In a genetic experiment, plants with pure round green seeds (RRyy) were crossed with plants with wrinkled yellow seeds (rrYY). (i) Show the gametes formed when F1 was self-pollinated. (ii) A total of 144 seeds were produced which developed into saplings. Show the ratio in which these traits are independently inherited in these144 sapling.	3
15	Neha consumed boiled sweet potatoes and boiled eggs for breakfast. Help her to understand some steps in the process of digestion of the food taken by her by answering the questions given below. *Attempt either subpart A or B.* A. Which of these food items is rich in proteins? In which part of the alimentary canal is the digestion of this component initiated? Name the enzymes, conditions required and the glands associated with the digestion here. **OR** B. Which of these food items contains fats? How is it digested? C. Which of these food items is rich in starch? How is its digestion initiated? D. The figure given below represents parts of the human alimentary canal. Which of these parts will have the maximum amount of digested food as soon as the process of digestion is completed?  **Figure: Human Alimentary canal**	4

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	For visually impaired students D. How will the digested food be taken up by the alimentary canal?	
16	*Attempt either option A or B.* A. Puneet wanted to grow banana plants. (i) Based on your knowledge on plant reproduction should he opt for seeds or any alternate method of reproduction. Justify your answer. (ii) Offsprings of a banana plant usually show very little variation. What causes variation and are variations good or bad? Justify. **OR** B. Annie was conducting research on the number of fruits produced by watermelon under different conditions. She grew 25 watermelon plants each in both glass house A and B. She introduced pollinators in glass house A only. (i) What difference will she observe in the number of fruits produced in the two glass houses? Explain with reason. (ii) List 3 changes that will occur in a flower once it gets fertilized.	5
	Section – B	
17	Which of the following equations represent redox reactions and what are the values for 'p' and 'q' in these equations? Equation 1: $Fe_2O_3(s) + 2Al(s) \longrightarrow Al_2O_3(s) + p\ Fe(l) + heat$ Equation 2: $2C_4H_{10}(g) + 13O_2(g) \xrightarrow{\triangle} 8CO_2(g) + q\ H_2O(g)$ A. Only equation 1 is a redox reaction, p =1 and q=3 B. Both equations 1 and 2 are redox reactions, p= 2 and q=4 C. Only equation 2 is a redox reaction, p= 2 and q= 10 D. Both equations 1 and 2 are redox reactions, p= 2 and q=10	1
18	Four statements about the reactions of oxides with dilute hydrochloric acid and aqueous sodium hydroxide are listed. I. Aluminium oxide reacts with both dilute hydrochloric acid and aqueous sodium hydroxide. II. Calcium oxide reacts with dilute hydrochloric acid and aqueous sodium hydroxide. III. Zinc oxide reacts with both dilute hydrochloric acid and aqueous sodium hydroxide. IV. Sulphur dioxide does not react with either dilute hydrochloric acid or aqueous sodium hydroxide. Which statements are correct? A. I and II B. I and III C. II and IV D. III and IV	1

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19	An iron nail is added to each of the two test tubes 'P' and 'Q' containing aqueous copper (II) sulphate, and aqueous silver nitrate respectively. Which of the following observation is correct? A. In test tube 'P' iron nail is coated with a blue coating and in test tube 'Q' there is no reaction. B. Iron nail is coated with a brown coating in test tube 'P' and silver coating in test tube 'Q'. C. There is no reaction in either of the test tubes 'P' or 'Q'. D. There is no reaction in test tube 'P' but a silver coating on iron nail is seen in test tube 'Q'.	1
20	Methyl orange is added to dilute hydrochloric acid and to aqueous sodium hydroxide. What is the colour of the methyl orange in each solution? <table><tr><th>Sample</th><th>colour in dilute hydrochloric acid</th><th>colour in aqueous sodium hydroxide</th></tr><tr><td>A</td><td>Orange</td><td>Red</td></tr><tr><td>B</td><td>Red</td><td>Yellow</td></tr><tr><td>C</td><td>Red</td><td>Orange</td></tr><tr><td>D</td><td>Yellow</td><td>Red</td></tr></table>	1
21	Which of the following substances when dissolved in equal volume of water, will have the highest pH value? A. Sulphuric acid B. Acetic acid C. Magnesium hydroxide D. Sodium hydroxide	1
22	When excess of carbon dioxide is passed through lime water, the milkiness disappears because A. water soluble calcium carbonate converts to water soluble calcium bicarbonate. B. insoluble calcium carbonate converts to water soluble calcium bicarbonate. C. water soluble calcium carbonate converts to insoluble calcium bicarbonate. D. insoluble calcium carbonate converts to insoluble calcium bicarbonate.	1
23	In the reaction of aqueous solution of barium chloride with aqueous solution of sodium sulphate, the aqueous solution formed will be: A. $BaCl_2$ B. $BaSO_4$ C. Na_2SO_4 D. NaCl	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.

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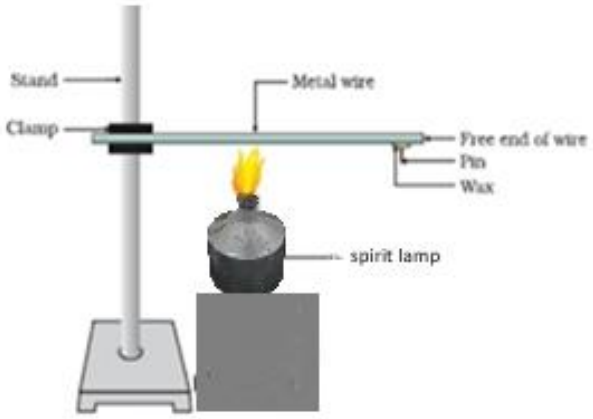
	C. A is true but R is false. D. A is false but R is true.	
24	**Assertion (A):** C_4H_8, C_4H_6 and C_4H_{10} are members of the same homologous series **Reason (R):** C_4H_8, C_4H_6, C_3H_4, C_3H_6, C_2H_4, C_2H_2 are unsaturated hydrocarbons.	1
25	The following activity is set-up in the science lab by the teacher. He clamped an aluminium wire on a stand and fixed a pin to the free end of the wire using wax. Then he heated the wire with a burner from the end where the wire is clamped. Students observed the pin fall off.  A. If the teacher replaces aluminium wire by silver wire, will the students' observation change? Justify your answer. B. Will the aluminium wire melt? Give reason for your answer.	2
26	*Attempt either option A or B.* A. An element 'X' is stored in kerosene, and cannot be extracted from its ore using a reducing agent. 'X' forms an ionic compound on reaction with chlorine. (i) Can we store 'X' in water? Give reason to support your answer. (ii) Identify element 'X'. Name the process used and write the equation for extraction of 'X' from its ore. **OR** B. The domes of many building in Europe are made of copper. These domes now appear greenish in colour. (i) Why do the domes appear greenish though copper is orange-red in colour? (ii) In your opinion, should the copper domes be replaced by iron domes to overcome the problem of change of colour of copper domes? (iii) Domes used to be made from thin sheets of metals. Why did the ancient architects use copper to make domes?	3
27	Amrita electrolysed distilled water using the set-up shown in figure 1. She was expecting two gases to be evolved at the anode and cathode respectively	3

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