2025_26_PRE_I

EDUTECH ACADEMY
NURTURING THE FUTURE....

SET : 01

— SCHOOL SECTION —

STD : X CBSE | **PRE EXAM – I** | **TIME : 3:00 Hrs**

SUB : SCIENCE (086) | **DATE : 8th December, 2025** | **MM :80**

General Instructions:

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

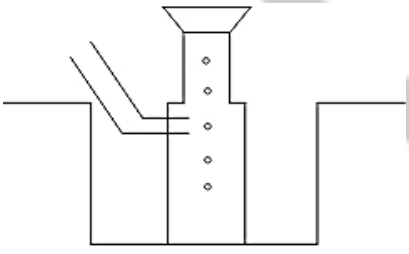
	Section A	
1	In which of the following vertebrate group/groups, the heart does not pump oxygenated blood to different parts of the body? a) Pisces only b) Pisces and amphibians c) Amphibians and reptiles d) Amphibians only	**[1]**
2	The two versions of a trait (character) which are brought in by the male and female gametes are situated on a) sex chromosomes b) copies of the same chromosome c) two different chromosomes d) any chromosome	**[1]**
3	Green plants occupy the first trophic level in every food chain because they a) can synthesize food by photosynthesis. b) exist over a large area. c) have very less concentration of harmful chemicals.	**[1]**

	d) have to feed large number of herbivores.	
4	Match the following with correct response. **Column A** / **Column B** (i) The largestpart of the brain — (a)Cranial meninges (ii) The protectivecovering of the brain — (b)Spinal cord (iii)Forebrain — (c)Olfactory lobe (iv)Cerebellum — (d)Cerebrum a) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) b) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a) c) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d) d) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b)	**[1]**
5	Excessive exposure of humans to UV rays results in **:** 1. Damage to immune system 2. Damage to lungs 3. Skin cancer 4. Peptic ulcers a) A and C b) B and C c) A and B d) A and D	**[1]**
6	Which of the following statement (s) is (are) true about the heart? 1. The left atrium receives oxygenated blood from different parts of the body while the right atrium receives deoxygenated blood from lungs 2. The left ventricle pumps oxygenated blood to different body parts while right ventricle pumps deoxygenated blood to lungs 3. Left atrium transfers oxygenated blood to the right ventricle which sends it to different body parts 4. Right atrium receives deoxygenated blood from different parts of the body while left ventricle pumps oxygenated blood to different parts of the body	**[1]**

	a) (i) and (iii) b) (ii) and (iv) c) (ii) only d) (i) only	
7	Which growth hormone is present in the tip of the stem? a) Ethylene b) Auxin c) Gibberellin d) Cytokinin	**[1]**
8	**Assertion (A):** Sexual reproduction involves two parents of different sexes, a male and a female, which produce male and female gametes respectively. **Reason (R):** The male and female gametes fuse to form a zygote in sexual reproduction, which develops into a new individual. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
9	**Assertion (A):** A food chain can have maximum of three trophic levels. **Reason (R):** Energy available at each trophic level keeps on decreasing as we move higher up the food chain. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
10	Draw a labelled diagram of the longitudinal section of a flower.	**[2]**
11	Meera saw that her friend Reema was carrying polythene bags for shopping. She immediately stops her and told her not to carry polythene bags. 1. Why Meera stopped her friend Reema to carry polythene bags for shopping? 2. What alternatives could be done to replace polythene bags?	**[2]**

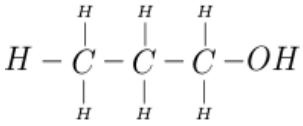
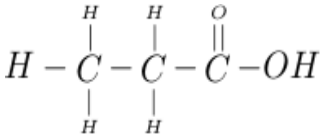
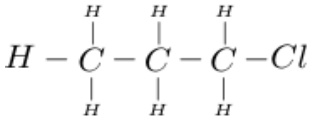
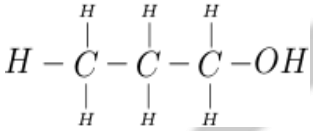
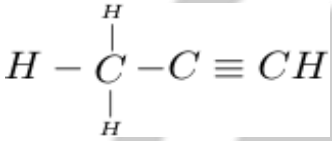
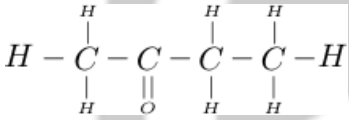
	OR What are phytoplanktons? Give one example.	
12	1. How is brain protected in our body? 2. A doctor finds in one of his patients that he is not maintaining a proper posture and balance of his body. State the region of brain and also the part of brain which is responsible for it.	**[2]**
13	Mendel, in one of his experiments with pea plants, crossed a variety of pea plant having round seeds with one having wrinkled seeds. State Mendel's observations giving reasons of F_1 and F_2 progeny of this cross. Also, list any two contrasting characters, other than round seeds of pea plants that Mendel used in his experiments.	**[3]**
14	Differentiate between xylem and phloem on the basis of the following : 1. Direction of transport of the substances 2. Major driving forces involved in the transport 3. Nature of the substance(s) transported	**[3]**
15	**Read the following text carefully and answer the questions that follow:** A student crossed pea plants having round and yellow seeds with pea plants having wrinkled and green seeds. He found that only one type of seeds were produced in the F_1 generation. When these F_1 generation pea plants were self - pollinated with each other, then in addition to the seed type of F_1 generation, some new types of seed combinations were also obtained in the F_2 generation. 1. Write any two contrasting visible characters other than the ones shown above, taken by Mendel for his experiment. (1) 2. Mention the dominant traits observed in F_1 generation. (1) 3. Give reason why the traits which were not visible in the seeds of F_1 generation reappeared in the seeds of F_2 generation. Write the ratio of different types of seeds obtained in F_2 generation in this case. (2) **OR** What is meant by the terms (I) dominant, and (II) recessive traits? Explain. (2)	**[4]**
16	Rajeev, a sales executive in an MNC was not keeping well for a long time. He underwent a complete medical checkup and was diagnosed as HIV+. He was terminated on account of this condition.	**[5]**

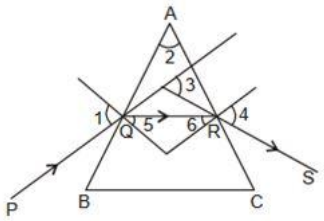
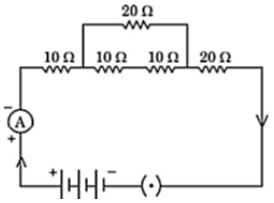
	1. To which category of disease does AIDS belong to? Give its causative organism. 2. Do you think it was a right decision by the head of the company?Justify? 3. What concern should the society show towards HIV+ individuals? **OR** How phototropism does occur in plants?	
	Section B	
17	Which of the following is(are) true when HCl (g) is passed through water? 1. It does not ionise in the solution as it is a covalent compound. 2. It ionises in the solution 3. It gives both hydrogen and hydroxyl ion in the solution 4. It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule a) (iii) only b) (iii) and (iv) c) (i) only d) (ii) and (iv)	**[1]**
18	Soap doesn't work well with woollen garments because: 1. It is basic in nature and woollen garments have acidic dyes. 2. It is acidic in nature and woollen garments have basic dyes. a) (A) b) (B) c) None of these d) Both (A) and (B)	**[1]**
19	Consider the following cases: 1. $CaSO_4 + Mg$ 2. $CuSO_4 + Ca$ 3. $ZnSO_4 + Fe$	**[1]**

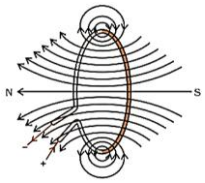
	4. $FeSO_4 + Zn$ The cases in which new products will form, are: a) (i) and (ii) b) (ii) and (iii) c) (ii) and (iv) d) (iii) and (iv)	
20	Match the following with the correct response: <table><tr><th>Column A</th><th>Column B</th></tr><tr><td>(i) Copper is used in electrical appliances</td><td>(a) Hydrogen sulphide</td></tr><tr><td>(ii) Sodium is very reactive</td><td>(b) Good conductor</td></tr><tr><td>(iii) Silver is tarnished</td><td>(c) Graphite</td></tr><tr><td>(iv) A non-metal and a good conductor</td><td>(d) Stored in kerosene</td></tr></table> a) (i) - (b), (ii) - (d), (iii) - (a), (iv) - (c) b) (i) - (d), (ii) - (a), (iii) - (c), (iv) - (b) c) (i) - (c), (ii) - (b), (iii) - (d), (iv) - (a) d) (i) - (a), (ii) - (c), (iii) - (b), (iv) - (d)	**[1]**
21	A metal is heated with dil H_2 SO $_4$. The gas evolved is collected by the method shown in the figure. Answer the following questions based on it:  The gas _____ than air and it is _____ in water. a) lighter, insoluble b) heavier, soluble c) heavier, insoluble d) lighter, soluble	**[1]**
22	What is denatured spirit?	**[1]**

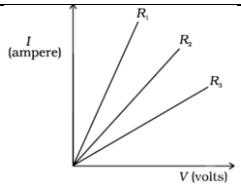
	a) Ethanol + Methanol (2.5%) b) Ethanol only c) Ethanol + Methanol (5%) d) Methanol only	
23	Sodium bicarbonate solution is added to dilute ethanoic acid. It is observed that a) a gas evolves b) a solid settles at the bottom c) the mixture becomes warm d) the mixture becomes light yellow	**[1]**
24	**Assertion (A):** An aqueous solution of acid conducts electricity. **Reason (R):** It is because in the solution it dissociates into ions. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
25	When a piece of limestone reacts with dilute HCl, a gas X is produced. When gas X is passed through lime water then a white precipitate Y is formed. On passing excess of gas X, the white precipitate dissolves forming a soluble compound Z. 1. What are X, Y and Z? 2. Write equations for the reactions which take place : a. When limestone reacts with dilute HCl. b. When gas X reacts with lime water to form white precipitate Y.	**[2]**
26	What happens when CaO is dissolved in water? **OR** Define a displacement reaction. Name a displacement reaction which is highly exothermic and has its use in joining railway tracks. Explain the process with a balanced chemical equation of the reaction that occurs.	**[3]**

27	Samples of four metals A, B, C and D were added one by one to the following solutions. The results obtained were tabulated as follows: **Metal/Solution** | **Iron Sulphate** | **Copper Sulphate** | **Zinc Sulphate** A | - | Displacement | No reaction B | Displacement | Displacement | Displacement C | Displacement | ? | - D | No reaction | No reaction | No reaction Use the table above to answer the following questions about metals A, B , C and D: 1. Which is the least reactive metal? 2. What would be observed if C is added to a solution of copper sulphate? 3. Arrange the metals A, B, C and D in the order of their decreasing reactivity.	**[3]**
28	**Read the following text carefully and answer the questions that follow:** In a redox reaction, both oxidation, as well as reduction,takes place together, oxidation involves loss of electrons while reduction involves the gain of electrons. The redox - reaction may involve a combination of atoms and molecules, displacement of metals, or non - metals. Example:$CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$ displacement of Cu metal from its compound. 1. In the below equation, which gets reduced? (1) $CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$ 2. The oxidising agent generally loses or gains an electron.(1) 3. Identify the oxidising agent and reducing agent in the above reaction.(2) $CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$ **OR** Identify the type of given reaction.(2) $CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$	**[4]**
29	Define covalent bond. Explain with the help of examples.	**[5]**

	OR Name the following compounds. 1.  2.  3.  4.  5.  6. 	
	Section C	
30	Which of the following statement is incorrect? 3. A ray of light passing from an optically rarer medium to an optically denser medium bends away from the normal. 4. A ray of light passing from an optically denser medium to an optically rarer medium bends away from the normal. 5. A ray of light passing from an optically rarer medium to an optically denser mediumbends toward the normal. 6. A ray light passing from an optically denser medium to an optically rarer mediumbends towards the normal. a) A, B and D b) B and C c) A and C d) A and D	**[1]**
31	What is the relation between angles 1, 2, 3 and 4?	**[1]**

	 a) + = + b) + = + c) + = + d) + + = +	
32	**Assertion (A):** In electric circuits, wires carrying currents in opposite directions are often twisted together. **Reason (R):** If the wire are not twisted together, the combination of the wires forms a current loop. The magnetic field generated by the loop might affect adjacent circuits or components. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
33	A student cannot see clearly a chart hanging on a wall placed at a distance 3 m from his eye. 1. Name the defect of vision he is suffering from. 2. Draw a ray diagram to illustrate this defect. 3. List its two possible causes.	**[2]**
34	1. Write the mathematical expression for Joule's law of heating. 2. Compute the heat generated while transferring 96000 coulombof charge in two hours through a potential difference of 40 V. **OR** Calculate the equivalent resistance of the following electric circuit: 	**[2]**

35	Magnetic field lines of the field produced by a current - carrying circular loopare shown in the figure.  By analyzing the concept of magnetic field and magnetic field lines answer the following questions: 1. How is the direction of the magnetic field at a point determined? 2. What is the direction of the magnetic field at the centre of a current - carrying circular loop?	**[3]**
36	1. State two main causes of a person developing near - sightedness. With the help of a ray diagram, suggest how he can be helped to overcome his disability? 2. The far point of myopic person is 100 cm in front of the eye. Calculate the focal length and power of a lens required to enable him to see distant objects clearly.	**[3]**
37	1. "The third wire of earth connection is very important in domestic electric appliances." Justify this statement. 2. List two precautions to be taken to avoid the overloading of domestic electric circuits.	**[3]**
38	**Read the following text carefully and answer the questions that follow:** In 1827, a German physicist Georg Simon Ohm (1787 - 1854) found out the relationship between the current I, flowing in metallic wire and the potential difference across its terminals. He stated that the electric current flowing through a metallic wire is directly proportional to the potential difference V, across its ends provided its temperature remains the same. The resistance of a circuit is defined as the ratio between the voltage applied to the current flowing through it. Rearranging the above relation, $R = {{V} \over I}$ Electric charge flows easily through some materials than others. The electrical resistance measures how much the flow of this electric charge is restricted within the circuit.	**[4]**



1. What is the unit of electrical resistance? (1)
2. Define Ohm's law. (1)
3. From graph which resistancehave high resistance? (2)

OR

What does the slope of V-I graph at any point represent? (2)

39 A student focussed the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle screen and the lens as under Position of candle = 12.0 cm Position of convex lens = 50.0 cm Position of the screen = 88.0 cm **[5]**

1. What is the focal length of the convex lens?
2. Where will the image be formed if he shifts the candle towards the lens at a position of 31.0 cm?
3. What will be the nature of the image formed if he further shifts the candle towards the lens?
4. Draw a ray diagram to show the formation of the image in case (iii) as said above.

OR

1. List four characteristics of the image formed by a convex lens when an object is placed between its optical centre and principal focus.
2. Size of the image of an object by a concave lens of focal length 20 cm is observed to be reduced to $\frac{1}{3}^{rd}$ of its size. Find the distance of the object from the lens.

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