KENDRIYA VIDYALAYA SANGATHAN LUCKNOW REGION
PRE-BOARD EXAM 2025-26

Class – X

Subject – Science (086)

M.M. – 80 Time allowed – 3 hours

General Instructions :

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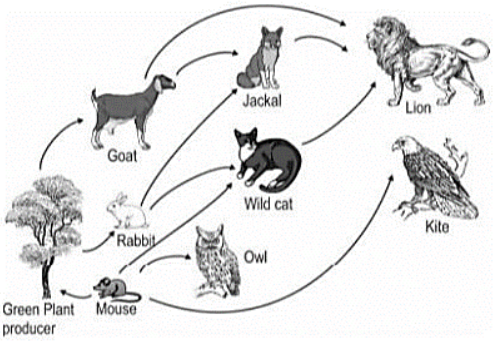
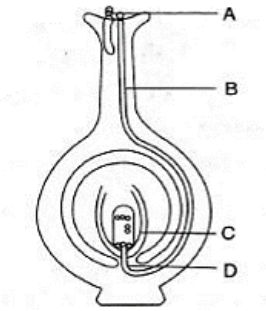
(i) This question paper consists of 39 questions in 3 sections. Section A is Biology, Section, B is Chemistry and Section C is Physics.

(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

1.	Which one of the following correctly matches the organism with its nutrition type? (a) Amoeba ----------Parasite (b) Cuscuta ----------Saprophytic (c) Lichen ----------Symbiotic (d) Fungus ----------Holozoic	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.	The doctor observes that his patient is having difficulty maintaining balance while walking. Which part of the brain is most likely to be affected? (a) Cerebrum (b) Cerebellum (c) Medulla oblongata (d) Hypothalamus	1
4.	The secretion of which hormone leads to physical changes in the body when you are 10-12 years of age? A. Oestrogen from testes and testosterone from ovary. B. Oestrogen from adrenal gland and testosterone from pituitary gland. C. Testosterone from thyroid gland and oestrogen from pituitary gland. D. Testosterone from testes and oestrogen from ovary.	1
5.	In a cross between black furred goat (G) and white furred goat (g), all offspring were found to have black fur. What can be inferred about the genetic makeup of the parent rabbits? (a). GG X gg (b) Gg X Gg (c) Gg X gg (d) gg X gg	1
6.	Excessive exposure of humans to ultraviolet rays may result in (a). Skin cancer (b). Diabetes (c) Damage to liver (d) Peptic ulcers	1
7.	In the given food chain if the amount of energy at the fourth trophic level is 2 kJ, what will be the energy available at the producer level? **Grass → Grasshopper → Frog → Snake** (a) 2 kJ (b) 20 kJ (c) 200 kJ (d) 2000 kJ	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 Assertion (A) and Reason (R) are true and Reason (R) is thecorrect explanation of Assertion (A). B. Both Assertion (A) and Reason (R) are true, but Reason (R) is ***not*** the correct explanation of Assertion (A). C. Assertion (A) is true, but Reason (R) is false. D. Assertion (A) is false, but Reason (R) is true.		
8.	**Assertion :-** Recessive traits can only be expressed in homozygous condition. **Reason:-** Dominant trait cannot be expressed in heterozygous condition.	1
9.	**Assertion :** Flow of energy in a food chain is unidirectional.	1

	Reason : Energy captured by autotrophs does not revert back to the solar input and it passes to the herbivores.	
10.	Draw a diagram of human excretory system and label: Ureter, Kidney, Urinary bladder and urethra .	2
11.	Explain the difference between pulmonary circulation and systemic circulation.	2
12.	Observe the given diagram  1.According to the given diagram, which animal is having highest biological magnification? 2.Which organism is not the energy provider in the given diagram?	2
13.	Name the plant Mendel used for his experiment. What type of progeny was obtained by him in F1 and F2 generation when he crossed the tall and short plants? Write the ratio he obtained in F2 generation.	3
14.	Two glands A and B which occur in pairs are present in endocrine system. the pair of gland A is found only in females whereas the pair of glands B occur only in males. The gland A make and secrete hormone C whereas gland B make and secrete hormone E. In addition to hormone gland A makes gamete F whereas gland B makes gamete G. (a)What are glands A and B. (b) Name the hormones C and E . (c) Name the gamete F and G	1+1+1 =3
15.	During a science experiment, Riya placed two potted plants in different conditions. One was kept in complete darkness, while the other was exposed to sunlight. After three days, she tested both plants for starch presence using iodine solution and observed a color change only in the plant exposed to sunlight. She wanted to understand why this happened. (a) What is the role of chlorophyll in photosynthesis? (b) Describe the process of photosynthesis and its three main steps. (c) Why did the plant kept in darkness not show a positive starch test? OR (c) Explain why stomata are essential for photosynthesis.	1+2+1 =4
16.	(A) (i) Write the functions of the following parts of human female reproductive system : (i) Ovary (ii) Fallopian tube (iii) Uterus (ii) State briefly two contraceptive methods used by human males. OR (B) (i) Identify A, B and C in the diagram given below and write one function of each	3+2= 5

	 (ii) Differentiate between self-pollination and cross-pollination.	

SECTION B

17.	What happens when dilute hydrochloric acid is added to iron fillings? (a) Hydrogen gas and iron chloride are produced. (b) Chlorine gas and iron hydroxide are produced. (c) No reaction takes place. (d) Iron salt and water are produced.	1
18.	Analyse the following data -A student measures the pH of 4 different liquids and records the following values. Liquid | Liquid A | Liquid B | Liquid C | Liquid D pH | 2 | 5 | 7 | 10 Evaluate which of the conclusions is most accurate. (a) Liquid D can be used to neutralize the acidity of Liquid A (b) Liquid C is more acidic than Liquid A (c) Liquid B is basic in nature (d) Liquid A can be water as it is neutral	1
19.	What happens when a solution of an acid is mixed with a solution of a base in a test tube? (i) The temperature of the solution increases (ii) The temperature of the solution decreases (iii) The temperature of the solution remains the same (iv) Salt formation takes place (A) (i) only (B) (i) and (iii) (C) (ii) and (iii) (D) (i) and (iv)	1
20.	During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to: (a) Absorb the evolved gas (b) Moisten the gas (c) Absorb moisture from the gas (d) Absorb Cl- ions from the evolved gas	1
21.	The picture depicts an important process. Which one of these process does it exhibit? A. Hydration B. Dehydration C. Neutralization D. Dilution 	1
22.	A compound with the molecular formula C_6H_{12} is observed to burn in excess oxygen and produce carbon dioxide and water. The compound contains a hydroxyl group (-OH). What type of compound is this? a) Alkane b) Alkene c) Alcohol d) Ketone	1
23.	A solution reacts with crushed egg-shells to give a gas that turns lime-water milky.	1

	The solution contains (a) NaCl (b) HCl (c) LiCl (d) KCl	
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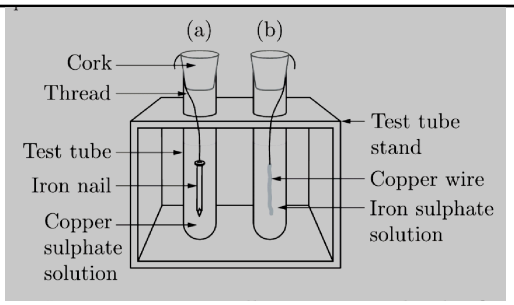
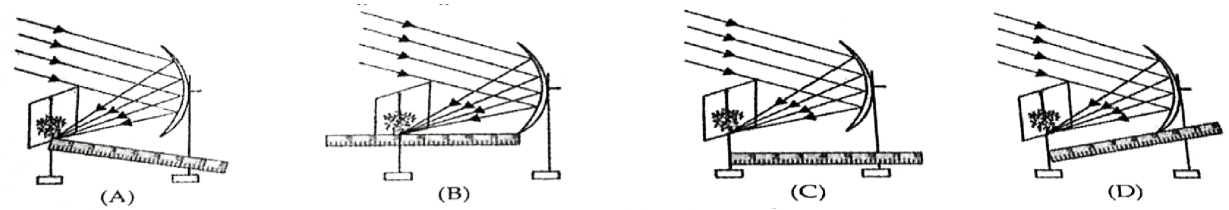
24.	Assertion (A): When HCl is added to zinc granules, a chemical reaction occurs. Reason (R): Evolution of a gas and change in colour indicate that the chemical reaction is taking place.	1
25.	State two ways to prevent the rusting of iron.	2
26.	A light green coloured solution of sulphate metal of 'P' is taken in a beaker, a rod of another metal 'Q' is put in this solution as shown in the given figure- (a) Identify the metal "P" and "Q". (b) Write the chemical equation of this reaction. (c)What will happen if rod of metal "P" is kept in sulphate solution of metal "Q"? OR A substance X, is extensively used in whitewashing. This element is present in bones also .On treatment with water, it forms a solution 'Y' which turns red litmus blue. (a) Identify the 'X'& 'Y'. (b) Write the balanced chemical eqation of this reaction. (c) Identify the type of reaction and explain how it is opposite of decomposition reaction.	3
27.	Observe the give picture and answer the questions- (a) In which test you will the reaction take place? (b) Write a balance chemical equation for the reaction. (c) Name the type of reaction.  **Or** (a) Write the electron dot structure of Magnesium chloride . (b) Show the formation of KCl by transfer of electrons. (c) Name the ions present in the compound KCl.	3
28.	Anita was cleaning a piece of corroded iron railing using a cleaning agent. She noticed that the cleaner was acidic in nature. To neutralize the excess acid left on the railing, she used a mild base — baking soda solution. Later, she observed that when baking soda was heated, it produced a gas that turned lime water milky. She also remembered that her mother used washing soda for washing clothes and plaster of Paris (POP) for repairing wall cracks. (a) Why did Anita use a mild base like baking soda solution after cleaning the railing with an acidic cleaner? (b) Write the balanced chemical equation for the thermal decomposition of baking soda. (c) Name the gas evolved when baking soda is heated.	4

	(d) Write the chemical formula of washing soda and plaster of Paris.	
29.	(a) Both soap and detergent are some type of salts. What is the difference between them? Describe in brief the cleansing action of soap. (b) Why do soaps not form lather in hard water? (c) List two problems that arise due to the use of detergents instead of soaps. **OR** (a) What is esterification? Give one chemical equation. (b) What happens when an ester is treated with sodium hydroxide solution? State the name of this reaction. (c) Differentiate between addition reaction and substitution reaction shown by hydrocarbons.	5

SECTION C

30.	Four students A, B, C and D performed the Experiment to determine the focal length of a concave mirror by obtaining the image of a distant tree on a screen. They measured the distances between the screen and the mirrors shown in the diagrams given below:- The correct value of image will be obtained by:-  a) A b) B c) C d) D	1
31.	A doctor has prescribed a corrective lens of -3.0D. Which type of lens is this? (a) diverging lens. (b) Converging lens (c) bi-focal lens. (d) Plane lens	1

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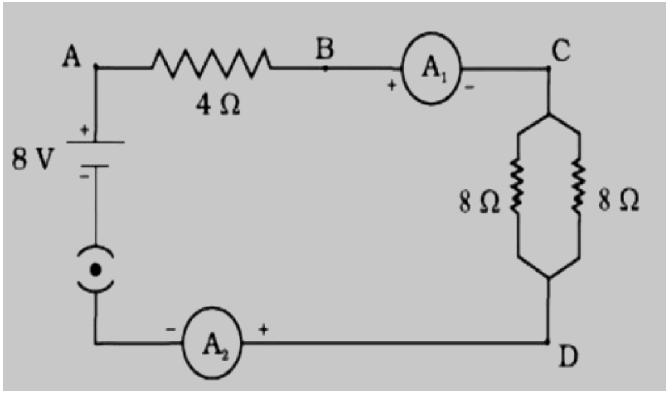
C. Assertion (A) is true, but Reason (R) is false.

D. Assertion (A) is false, but Reason (R) is true.

32.	Assertion (A): The refractive index of water is greater than that of glass. Reason (R): The speed of light is more in water than in glass.	1
33.	Rishi went to a palmist to show his palm. The palmist used a special lens for this purpose. If the focal length of this lens is 10 cm, the lens is held at a distance of 5 cm from the palm, use lens formula to find the position and size of the image.	2
34.	A. Show how you would connect three resistors, each of resistance 6Ω so that the combination has a resistance of (i)9Ω, (ii) 4Ω	2
35.	How does a solenoid behave as a magnet draw the pattern of the magnetic field produced by it showing the directions of the magnetic field lines ?	3
36.	Three resistors of 5 Ω, 10 Ω and 15 Ω are connected in series and the combination is connected to battery of 30 V. Ammeter and Voltmeter are connected in the circuit. (a).Draw a circuit diagram to connect all the devices in proper correct order.	3

	(b).What is the current flowing and potential difference across 10 Ω resistance?	
37.	Ravi, a Class 10 student, is facing difficulty in reading text written on the blackboard while sitting at the back of the classroom. However, he can comfortably read books placed close to his eyes. His parents take him to an eye specialist. Based on this situation, answer the following: (a) Identify the vision defect Ravi is suffering from. (b) Mention two possible causes of this defect. (c) Name the type of lens used to correct this defect.	3
38.	The lenses form different types of images when objects are placed at different locations. When a ray is incident parallel to the principal axis, then after refraction, it passes through the focus or appears to come from the focus. When a ray goes through the optical center of the lens, it passes without any deviation. If the object is placed between the focus and the optical center of the convex lens, an erect and magnified image is formed. As the object is brought closer to the convex lens from infinity to focus, the image moves away from the convex lens from focus to infinity. Also, the size of the image goes on increasing and the image is always real and inverted. A concave lens always gives a virtual, erect, and diminished image irrespective of the position of the object. (a)The location of image formed by a convex lens when the object is placed at infinity is (a) at focus (b) at 2F (c) at optical center (d) between Fand 2F (b) The size of image formed by a convex lens when the object is placed at the focus of convex lens is (a) small (b) point in size (c) highly magnified (d) same as that of object (c) When the object is placed at 2F in front of convex lens, the location of image is (a) at F (b) at 2 F on the other side (c) at infinity (d) between F and optical center (d) Write any two use of convex lens.	4
39.	Find out the following in the electric circuit given in the Figure below:  (a) Effective resistance of two 8 ohm resistors in the combination (b) Current flowing through 4 ohm resistor (c) Potential difference across 4 ohm resistance (d) Power dissipated in 4 ohm resistor (e) Difference in ammeter readings, if any **OR** Answer the following questions (a)Why is tungsten used almost exclusively for filament of electric lamps? (b)Why are conductors of electric heating devices such as bread toasters and electric irons made	5

	of alloys rather than pure metals? (c)Why is the series arrangement not used for domestic circuits? (d)How does the resistance of a wire vary with its area of cross section? (e)Why are copper and aluminium wires usually employed for electricity transmission?	