KENDRIYA VIDYALAYA SANGHTHAN JAMMU REGION

PRE-BOARD -I EXAMINATION (2025-26)

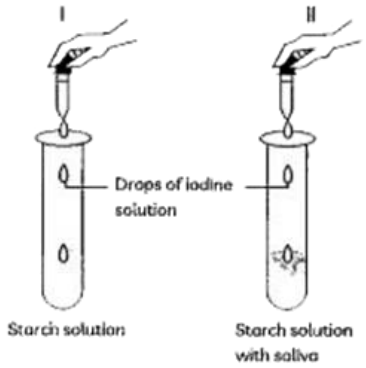
CLASS-X **Max. Marks: 80**

SUBJECT-SCIENCE **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.

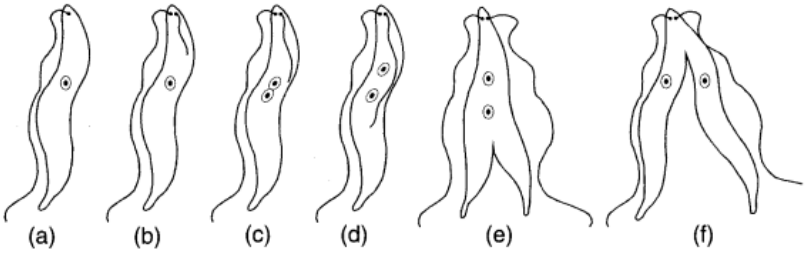
(ii) All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

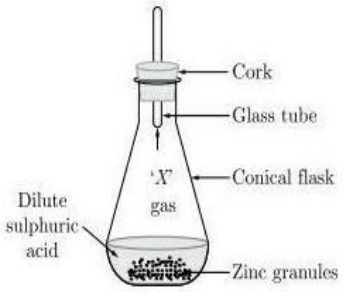
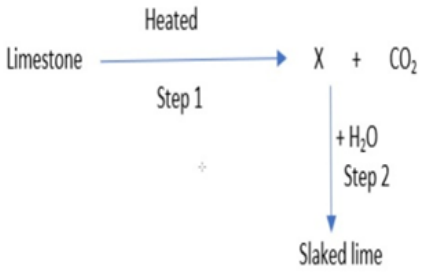
<table>
<tr><th></th><th>SECTION-A</th><th>MARKS</th></tr>
<tr><td>Q1.</td><td>A student performed an activity to understand the role of saliva in digestion. He took two test tubes labelled I and II having starch solution and starch solution with saliva respectively. He then added few drops of iodine to the test tubes. Select the row containing correct observation from the table below:
 

<table><tr><td>OPTION</td><td>TEST TUBE I</td><td>TEST TUBE II</td></tr><tr><td>(a)</td><td>No change in color</td><td>Color changes to blue black</td></tr><tr><td>(b)</td><td>Color changes to blue black</td><td>No change in color</td></tr><tr><td>(c)</td><td>Color changes to blue black</td><td>Color changes to blue black</td></tr><tr><td>(d)</td><td>No change in color</td><td>No change in color</td></tr></table></td><td>1</td></tr>
<tr><td>Q2.</td><td>Select the major factors on which the amount of water reabsorbed in the part of nephron depends?
(a) The amount of excess water present in the body.
(b) The amount of dissolved waste to be excreted.
(c) The amount of urine produced is also regulated by certain</td><td>1</td></tr>
</table>

	hormones which control the movement of water and Na+ ions in and out of the nephrons. (d) All of the above	
Q3.	Sapna suffers from a condition due to which her average blood sugar level is 174 mg/dl. The average blood sugar level in a healthy adult is < 140 mg/dl. Which of the following could be the cause of Sapna's conditions? (a) Insufficient production of thyroxine in the body. (b) Insufficient production of insulin in her body. (c) Excess production of thyroxine in her body. (d) Excess production of Insulin in her body.	1
Q4.	Nastic movements are non-directional response to the stimuli. These movements are independent of the direction of the stimulus.Which of the following is a nastic movement. (a) Closing of leaves of a sensitive plant on being touched with an object. (b) Bending of shoot of a plant in response to light. (c) Movement of root of a plant towards a source of water. (d) Climbing up of a plant on an object by using tendrils.	1
Q5.	A cross made between two pea plants produced 50% tall and 50% short pea plants. The gene combination of the perinatal pea plant must be (a)Tt and Tt (b) TT and Tt (c) Tt and tt (d) TT and tt	1
Q6.	Identify the food chain in which the organisms of the second trophic level are missing: (a) Grass, goat, lion (b) Zooplankton, Phytoplankton, small fish, large fish (c) Tiger, grass, snake, frog (d) Grasshopper, grass, snake, frog, eagle	1
Q7.	Consider the following statements about Ozone: (i) Ozone is poisonous gas. (ii) Ozone shields the Earth's surface from the infrared radiation from the sun. (iii) Ozone is a product of UV radiations acting on oxygen molecules. (iv) At the lower level of Earth's atmosphere Ozone performs most essential function.	1

	The correct statements are (a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (ii) and (iv)	
	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.	
Q8.	**Assertion(A)**: Variations are seen in offspring produced by sexual reproduction. **Reason (R)**: DNA molecule generated by replication is not exactly identical to original DNA.	1
Q9.	**Assertion(A)**: Polythene bags and plastic containers are non-biodegradable substances. **Reason(R)**: They can be broken down by microorganisms in natural simple harmless substances.	1
Q10.	<u>Students to attempt either option A or</u> B A. State the events occurring during the process of photosynthesis. Is it essential that these steps take place one after the other immediately? OR B. Photosynthesis takes place in the leaves and the food prepared by it reaches other parts of the plants. Name the process involved and explain.	2
Q11.	Name the blood vessel which brings blood to the kidneys. Why nephron is called a basic filtration unit of kidney. Write the role of tubular part of nephron in urine formation.	2
Q12.	(i)List two human-made ecosystems. (ii) “We do not Clean a pond in the same manner as we do in an aquarium.” Give reasons to justify this statement.	2
Q13.	A squirrel is in a scary situation. Its body has to prepare for either fighting or running away. State the immediate changes that takes place in its body so that the squirrel is able to either fight or run?	3

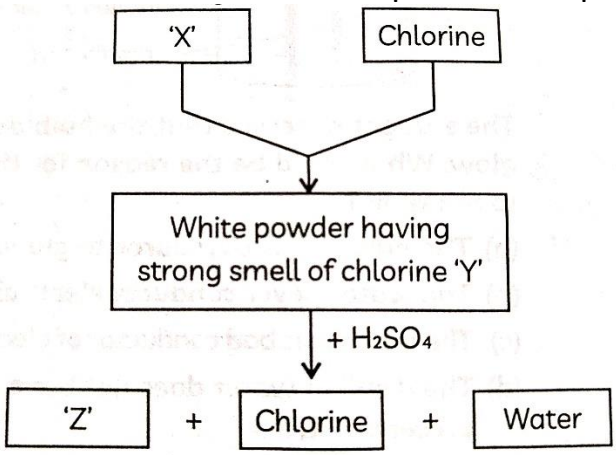
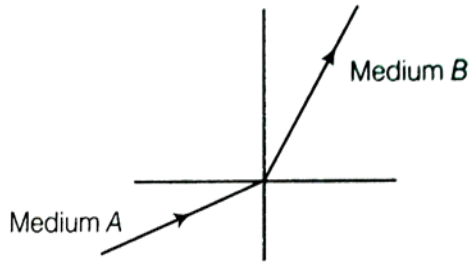
Q14.	(a) "In human beings the genes inherited from the parents decide whether the newborn individual is male or female." (b) "Some animals rely on environmental cues for sex determination." Justify this statement giving an example. Explain this statement with the help of a flow diagram.	3
Q15.	<u>Attempt either subpart c or d</u> Sania and her friends were running during their sports practice. After sometime they noticed that they were breathing heavily. Their coach explained that during physical activity the body requires more oxygen to generate energy leading to an increased breathing rate. Attempt either sub part c or d (a) What is the function of alveoli in human respiratory system? (b) Why do we breathe faster during exercise? (c) How does the exchange of gases occur in alveoli? OR d)Why do aquatic organisms breathe faster than terrestrial organisms?	4
Q16.	<u>Attempt either option A or B</u> <u>A.</u> (i)Name the type of asexual mode of reproduction shown in the given figure.  (ii) Identify the unicellular organism in the diagram. (iii) List any two advantages of asexual reproduction over sexual reproduction. (iv) Name and explain any one mode of asexual reproduction observed in Hydra. OR B (a) Write the functions of the following parts of human female reproductive system: (I) Ovary (II) Fallopian tube	5

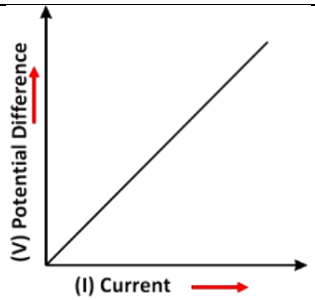
	(III) Uterus (b) State briefly two contraceptive methods used by human males.	
	SECTION-B	
Q17.	The gas released in the following activity can be tested/detected by – (a)Passing it through lime water, it turns lime water milky. (b) Bringing burning matchstick near it, a POP sound is produced. (c) Smell of burning sulphur is observed. (d) Effervescence is produced. 	1
Q18.	Strong heating of Ferrous sulphate leads to formation of a brown solid and two gases. The reaction can be categorised as: (a)Displacement and redox reaction (b) Decomposition and redox reaction (c) Displacement an endothermic reaction (d) Decomposition and exothermic reaction.	1
Q19.	Identify the correct option from the given table which represents the type of reactions occurring in step 1 and step 2.  **Endothermic** / **Exothermic** (a) X / ✓ (b) ✓ / X (c) ✓ / ✓ (d) X / X	1
Q20.	Marble Statues are Corroded or stained when they repeatedly come into contact with polluted rain water. Identify the main reason. (a)Decomposition of calcium carbonate to calcium oxide. (b) Polluted water is basic in nature hence it reacts with calcium	1

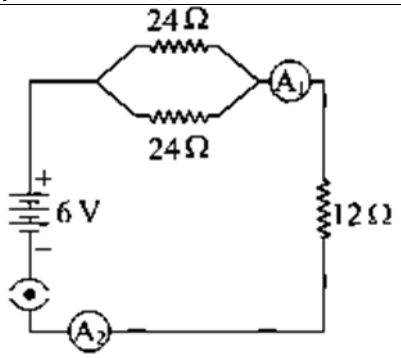
<table>
<tr><td></td><td>carbonate.

(c) Polluted water is acidic in nature hence it reacts with calcium carbonate.
(d) Calcium carbonate dissolves in water to give calcium hydroxide.</td><td></td></tr>
<tr><td>Q21.</td><td>A Salt “P” is prepared by using sodium chloride as one of the raw materials. It is also used in soda acid fire extinguisher and to neutralise an acid. From the given information, select Incorrect statement.
(a) Salt “P” is sodium hydrogen carbonate.
(b) Salt “P” is non corrosive base.
(c) The PH of Salt P is less than 7.
(d) The aqueous solution of one of the raw materials sodium chloride is also called brine solution.</td><td>1</td></tr>
<tr><td>Q22.</td><td>An aqueous solution turns blue litmus solution red. Excess solution of which solution would reverse the change. Identify the solution.
(a)Sodium chloride
(b) Sodium hydroxide
(c) Hydrochloric acid
(d) Ammonium chloride</td><td>1</td></tr>
<tr><td>Q23.</td><td>Following table gives information about four substances: A, B, C and D.
<table>
<tr><th>Substance</th><th>Melting Point(K)</th><th colspan="2">Electrical Conductivity</th></tr>
<tr><td></td><td></td><td>Solid</td><td>Molten/Aqueous</td></tr>
<tr><td>A</td><td>295</td><td>Good</td><td>Good</td></tr>
<tr><td>B</td><td>1210</td><td>Poor</td><td>Good</td></tr>
<tr><td>C</td><td>1890</td><td>Poor</td><td>Good</td></tr>
<tr><td>D</td><td>1160</td><td>Poor</td><td>Poor</td></tr>
</table>
Identify ionic compounds from the given substances.
(a)A, B
(b) B, C
(C) A, B, D
(d) A, C, D</td><td>1</td></tr>
<tr><td></td><td>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.</td><td></td></tr>
</table>

<table>
<tr><td></td><td>C. A is true but R is false.
D. A is false but R is true.</td><td></td></tr>
<tr><td>Q24.</td><td>Assertion(A): Excess of concentrated sulphuric acid is used to convert ethanol into ethene.
Reason (R): Concentrated sulphuric acid can act as dehydrating agent and remove water.</td><td>1</td></tr>
<tr><td>Q25.</td><td><u>Attempt either option A or B</u>
A) You have two beakers “A “and “B” containing copper sulphate solution. What would you observe after about two hrs if you dip a Strip of zinc in beaker A and a strip of silver in beaker B? Give reason for your observation in each case.
OR
B) A reddish-brown metal X when heated in air gives a black compound Y which when heated in presence of hydrogen gas gives X back. X is refined by the process of electrolysis. This refined form of X is used in electric wiring.
(a) Identify X and Y?
(b) Draw a well labelled diagram to represent the process of refining X.</td><td>2</td></tr>
<tr><td>Q26.</td><td>The PH of three solutions is given in the table Answer the questions that follow.
<table>
<tr><td>SOLUTION</td><td>pH</td></tr>
<tr><td>P</td><td>1</td></tr>
<tr><td>Q</td><td>7</td></tr>
<tr><td>R</td><td>14</td></tr>
</table>
(a) Which of these solutions could possibly react with the zinc metal to produce hydrogen gas?
(b) Which of these solutions could be formed by the reaction of a metal oxide with water?
(c) Which of these solutions could be the raw material for the industrial manufacture of chlorine?</td><td>3</td></tr>
<tr><td>Q27.</td><td>(a) Sodium metal is stored under kerosene oil,why?
(b) At ordinary temperature the surface of metals such as magnesium, aluminium, zinc etc., is covered with a thin layer. What is the composition of this layer?State its importance.
(c) Carbonate and sulphide ores are usually converted into oxides during</td><td>3</td></tr>
</table>

	the process of extraction. Give reason.	
Q28	The flowchart shows an important compound used in chemistry.  (a) Identify X,Y and Z (b) Write chemical equations between: (i) X and chloride (ii) white powder Y and H_2SO_4 OR What happens if Y is exposed to air for a long time? List any two important uses of Y. (c) Write use of Chlorine.	4
Q29	a) Define a homologous series of carbon compounds. (b) Why is the melting and boiling point of C_4H_8 higher than that of C_3H_6 or C_2H_4? (c) Why do we not see any gradation in chemical properties of a homologous series compound? (d) Write the name and structure of(i) Aldehyde and ketone with molecular formula C_3H_6O.	5
	SECTION-C	
Q30.	A light ray enters from medium A to medium B as shown in the figure. The refractive index of medium B relative to A will be (a)Greater than unity (b)Less than unity  	1

	(c)Equal to unity (d)Zero	
Q31.	A student sitting on the last bench can read the letters written on the blackboard but is not able read the letters written in his text book. Which of the following statements is correct? (a)The near point of his eyes has receded away. (b) The near point of his eyes has come closer. (c) The far point of his eyes has come closer. (d) The far point of his eyes has receded away.	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	
Q32.	**Assertion (A**) : A convex lens forms a virtual, erect and enlarged image of an object situated between the lens and its principal focus. **Reason (R)** : A convex lens is a diverging lens.	1
Q33.	(a) A ray of light starting from diamond is incident on the interface separating diamond and water. Draw a labelled ray diagram to show the refraction of light in this case. (b) Absolute refractive indexes of diamond and water are 2.42 and 1.33 respectively. Find the value of refractive index of water w.r.t. diamond.	2
Q34.	<u>Attempt either option A or B</u> A. .V-I graph for a conductor is as shown in the figure. (i) What do you infer from this graph? (ii)State the law expressed here.  OR B. (i) List the factors on which the resistance of a conductor in the shape of a wire depends. (ii) Why are metals good conductors of electricity whereas glass is a bad	2

	conductor of electricity? Give reason.	
Q35.	Explain giving reason why the sky appears blue to an observer from the surface of the Earth. What should the appearance of the sky be during the day for an astronaut staying in the international space station orbiting the Earth? State reason to justify your answer.	3
Q36.	Study the circuit of Figure and find out: (i)Equivalent resistance across the circuit. (ii) Current in 12-ohm resistor. (ii)Difference in the readings of A_1 and A_2 if any. 	3
Q37.	(a)Draw the patterns of magnetic field lines due to magnetic field through and around a current carrying circular loop. (b)Name and state the rule to find out the direction of magnetic field inside and around the loop.	3
Q38	Ravi wanted to fix the rearview mirror of his scooter. He knows that rear view mirror is an essential safety device in the vehicle and allows him to see objects at the backside of his vehicle. He bought two mirrors M1 and M2 out of which M1 is curved inwards and M2 is curved outwards. (A)Based on the given situation which mirror should Ravi need to fix as his rear-view mirror and why? (B) Ravi did some preliminary experiment with the mirror M1 and found that magnification of the real image of an object placed at 10 cm in front of it is 3, at what distance is the image located? <u>Attempt either subpart C or D.</u> (C) An object is placed at the centre of curvature of M1. Find the distance between its image and pole. OR (D)An object is placed 60CM in front of M2. The image found by the mirror is located 30 Cm behind the mirror. What is the object's	4

	magnification?	
Q39	<u>Attempt either option A or B</u> A. (i) Define electric power. Express it in terms of potential difference (V) and resistance (R) (ii) An electric oven is designed to work on Voltage of 220 volt. This oven consumes 11 units of electrical energy in 5 hours. Calculate (a)Power rating of the oven (b) Current drawn by the oven (c) Resistance of the oven when it is red hot OR B. (i)What is the heating effect of electric current? (ii) Write an expression for the amount of heat produced in a resistor when an electric current is passed through it stating the meanings of the symbols used. (iii) Name two appliances based on heating effect of electric current. (iv) Calculate the total cost of running an electric heater of 1000 W for 5 hours daily in one month, if the rate of one unit of electricity is 6.	5