

FIRST TERMINAL EXAMINATION (2025-26)

CLASS - X

SUBJECT : SCIENCE

Time : 3 Hours

Max. Marks : 80

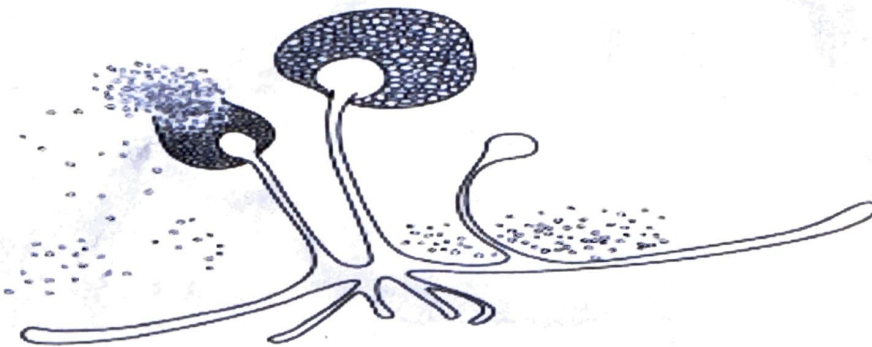
SECTION -A (BIOLOGY)

MCQS

- Q1. What are the products obtained by anaerobic respiration in plants? (1)
- (a) Lactic acid + Energy
 - (b) Carbon dioxide + Water + Energy
 - (c) Ethanol + Carbon dioxide + Energy
 - (d) Pyruvate.
- Q2. The uptake of water and minerals in a tall plant is because of (1)
- (a) Transpiration pull
 - (b) Root pressure
 - (c) Both a and b
 - (d) Translocation
- Q3. Which of the following option shows the order of events correctly when a bright light is focused on our eyes? (1)
- (a) Bright light → receptors in eyes → sensory neuron → spinal cord---motor neurons → eyelid closes.
 - (b) Bright light → receptors in eyes → spinal cord → sensory neuron → motor neurons → eyelid closes.
 - (c) Bright light → receptors in eyes → sensory neuron → motor neurons → spinal cord → eyelid closes.
 - (d) Bright light → receptors in eyes → spinal cord → motor neurons → sensory neuron → eyelid closes.

Q4. Factors responsible for the rapid spread of bread mould on slices of bread are

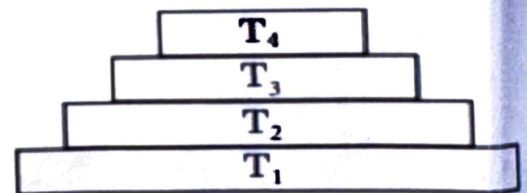
(1)



- (i) large number of spores.
 - (ii) availability of moisture and nutrients in bread.
 - (iii) presence of tubular branched hyphae.
 - (iv) formation of round shaped sporangia.
- (a) (i) and (iii)
 - (b) (ii) and (iv)
 - (c) (i) and (ii)
 - (d) (iii) and (iv)

Q5. In the given figure, various trophic levels are shown in a pyramid. At which trophic level maximum energy is available? (1)

- (a) T₁
- (b) T₂
- (c) T₃
- (d) T₄.



Q6. A Planaria worm is cut horizontally in the middle into two halves P and Q such that the part P contains the whole head of the worm. Another Planaria worm is cut vertically into two halves R and S in such a way that both the cut pieces R and S contain half head each. Which of the cut pieces of the two Planaria worms could regenerate to form the complete respective worms? (1)

- (a) Only P
- (b) Only R and S
- (c) P, R and S
- (d) P, Q, R and S.

ASSERTION REASON QUESTION

Directions:

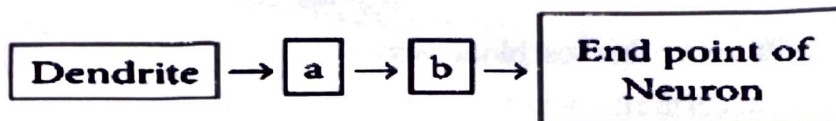
- (a) Both A and R are true and R is correct explanation of the assertion.
- (b) Both A and R are true but R is not the correct explanation of the assertion.
- (c) A is true but R is false.
- (d) A is false but R is true.

- Q7. **ASSERTION :** Capillaries are the thinnest blood vessels.
REASON : Capillaries connect the branches of arteries and veins. (1)
- Q8. **ASSERTION :** The stomach performs both mechanical and chemical digestion.
REASON : The stomach churns food and mixes it with gastric juice. (1)
- Q9. How do the plant hormones promote the growth of tendrils around support? (2)
- Q10. Lata wanted to grow banana plants.
(i) Based on your knowledge on plant reproduction should she opt for seeds? Why or why not? Justify your answer.
(ii) Give one more advantage of the method of reproduction Lata has chosen. (2)
- Q11. Name the causative agent of the disease "kala- azar" and name its mode of asexual reproduction. What step of reproduction of the above causative agent is different from reproduction in *Amoeba*? Draw a suitable diagram of the reproduction of the causative agent. (3)
- Q12. One of the important circulating fluid in body is Lymph
(a) Why do we also call Lymph as a Tissue fluid?
(b) How does the circulation of blood is different in the fish as compared to a human being?
(c) Lungs do not collapse even after forceful expiration. Comment. (3)
- Q13. (a) From the following group of organisms create a food chain which is most advantageous for human beings in terms of energy.
{Hawk, Rat, Cereal plant, Goat, Snake, Human being}
(b) State the possible disadvantage if the cereal plant is growing in soil rich in pesticides .
What scientific term is used to explain it?
(c) Construct a food web using the organisms mentioned above (a). (3)

Q14. a) A man got an injury on the head during motorbike accident on the road. Later he faced a problem in maintaining balance of the body while walking or sitting. Which part of the brain do you think is affected?

b) (i) Which receptor is responsible for giving us stimulus of taste.

(ii) Write a and b in the given flow chart of neuron through which information travels as an electrical impulse.



c) One of the endocrine gland prepares the body for fight and flight during the emergency. Name the gland and also explain its action ?

d) How are lungs designed in human beings to maximize the area of exchange of gases ? (5)

CASE STUDY

Q15. Read the given passage and answer the questions based on passage and related studied concepts. (5)

Hemodialysis it removes waste products from the blood. Such as excess salts, and urea which are insufficiently removed by the kidney in patients with kidney failure. During the procedure, the patient's blood is cleaned by filtration through a series of semipermeable membranes before being returned to the blood of the patient. On the basis of this, answer the following questions:

(a) Where are the kidneys located in human beings?

(b) Name the main excretory waste removed by kidneys from blood?

(c) Selective Reabsorption is the major step in the urine formation" Explain?

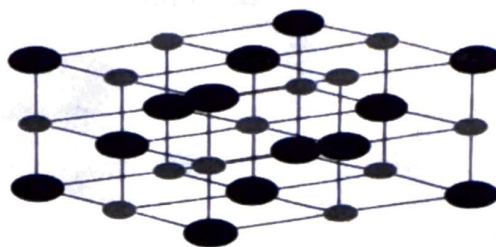
(d) Mention any two ways how plants get rid of waste products. (4)

SECTION -B (CHEMISTRY)

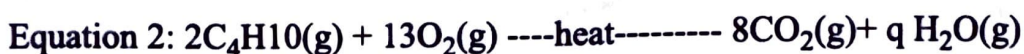
Q16. Which of the following salts has no water of crystallization?

(1)

- (a) Blue vitriol
- (b) Washing soda
- (c) Baking soda
- (d) Gypsum



Q17. Which of the following equations represents redox reactions and what are the values for 'p' and 'q' in these equations? (1)



- (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 $q = 10$.

Q18. 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)

Q19. The electronic configuration of three elements A, B and C are as follows: (1)

A = 2, 4, B = 2, 7, C = 2, 1

Which two elements will combine to form an ionic compound and write the correct formula,

- (a) A_2B
- (b) CB
- (c) Ac_3
- (d) B_2C

Q20. Which of the following substances when dissolved in equal volume of water, will have the highest pH value? (1)

- (a.) Sulphuric acid
- (b). Acetic acid
- (c). Magnesium hydroxide
- (d). Sodium hydroxide

ASSERTION REASON QUESTIONS-

Directions: In the following questions, two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- (a) Both (A) and (R) are true and (R) is correct explanation of the assertion.
- (b) Both (A) and (R) are true but (R) is not the correct explanation of the assertion.
- (c) (A) is true but (R) is false.
- (d) (A) is false but (R) is true.

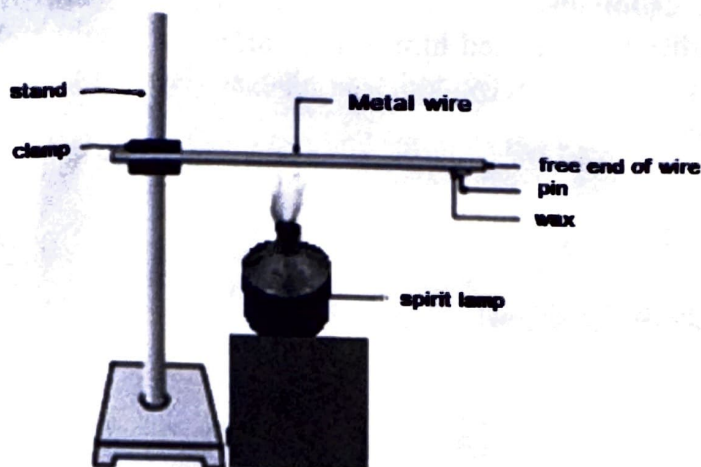
Q21. Assertion (A): Metals above hydrogen in the activity series can displace hydrogen from dilute acids. (1)

Reason (R): Metals occur in nature only in the form of their compounds.

Q22. An element X on reacting with oxygen forms an oxide X_2O . The oxide dissolves in water to give a compound Y and turns red litmus blue. Predict whether the element is metal or nonmetal. Give a chemical reaction of the formation of Y.

(b) A solution of copper sulphate was kept in an iron pot. After few days the pot developed some holes in it. How will you account for this? Give possible chemical reaction. (2)

- Q23. 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)
- Q24. Common salt is a raw material for many of the chemicals. Write any two products which are formed during 'Chlor-alkali process'? Write one commercial or industrial material that can be prepared from each product. Draw a labelled diagram of this process to show the formation of these products. (3)
- Q25. Write balanced chemical equations based on the following clues or the statements :
- (a) A white compound on heating gives brown fumes and yellow mass.
- (b) Green coloured crystals when heated gives gases of pungent smell and a reddish brown residue.
- (c) A metal when heated in air strongly , gives a black mass. (3)
- Q26. a) When CO_2 gas is passed through a saturated solution of ammonical brine, two compounds 'X' and 'Y' are formed. 'Y' is used as antacid and decomposes to form another solid 'Z'. Identify 'X', 'Y' and 'Z' and write chemical equations involved.
- b) Show the formation of Aluminium chloride by electron transfer method.
- c) "Dry HCl gas does not show acidic properties" why? (5)

CASE STUDY

- Q27. Reena's father was suffering from severe stomach pain. He was showing symptoms of heartburn and indigestion and tooth ache she consulted a doctor who told her that she was suffering from acidity and advised him to take an antacid tablet after each meal. Reena's father followed the advice strictly and was also advised to visit dentist. Now answer the following questions:



- Why is Milk of magnesia an antacid ?
- Justify the statement that "pH is the cause of tooth decay."
- How is the concentration of $(\text{H}_3\text{O}^+)/\text{H}^+$ ions affected when a solution of acid is diluted?
- What is the nature of salt Sodium acetate ? and why ?

SECTION -C (PHYSICS)

- Q28. Select the correct options from the following.

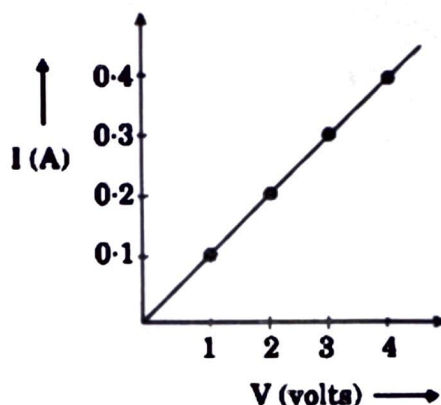
- Consider these indices of refraction: glass: 1.52; air: 1.0003; water: 1.333. Based on the refractive indices of three materials, arrange the speed of light through them in decreasing order.
 - The speed of light in water > the speed of light in air > the speed of light in glass.
 - The speed of light in glass > the speed of light in water > the speed of light in air.
 - The speed of light in air > the speed of light in water > the speed of light in glass.
 - The speed of light in glass > the speed of light in air > the speed of light in water.
- A wire of length l is gradually stretched so that its length increases to $2l$. If its original resistance was R , then new resistance will be

(a) $R/2$	(b) $2R$
(c) $4R$	(d) $R/4$

- (iii) When a ray of light passes through a glass prism it suffers two refractions. During these refractions, the ray bends: (1)
- Away from the base in both cases
 - Towards the base in both cases
 - Towards the base in the first case and away from the base in the second case
 - Away from the base in the first case and towards the base in the second case
- (iv) When a beam of white light passes through a region having very fine dust particles, the colour of light mainly scattered in that region is: (1)
- Red
 - Blue
 - Orange
 - Yellow
- (v) The expression that relate (1)
- A. Q, I and t
 B. Q, V and W respectively are
- $A \ I = Q/t, B. \ W = V/Q$
 - $A \ Q = I \times t, B. \ W = V \times Q$
 - $A \ Q = I/t, B. \ V = W/Q$
 - $A \ I = Q/t, B. \ Q = V/W$
- (vi) Select the correct answer to these questions from the following (1)
- Both A and R are true and R is the correct explanation of A.
 - Both A and R are true but R is not the correct explanation of A.
 - A is true but R is false.
 - A is false but R is true.
- Assertion(A):** A normal human eye can clearly see the object placed at different distances.
Reason (R) : The human eye has capacity of adjusting the focal length of eye lens.
- Q29. (a) What is meant by the spectrum of white light? (2)
 (b) Two triangular glass prisms are kept together connected through their rectangular side. A light beam is passed through one side of the combination. Will there be any dispersion? Justify your answer.
- Q30. A needle is placed 12cm away from a convex mirror of focal length 15cm. Find the position and magnification of the image formed. (2)

- Q31. (a) State and define unit of power. (3)
- (b) A convex lens of focal length 18 cm and a concave lens of focal length 24 cm are placed in contact such that they have a common principal axis. Find the power of the combination. Will the combination act as a convex lens or a concave lens?

- Q32. (a) State Ohm's law. (3)
- (b) (a) In the experiment to study the dependence of current (I) on the potential difference (V) across a resistor, a student obtained a graph as shown.



- (i) What does the graph predict about the dependence of current on the potential difference?
- (ii) Find the current that flows through the resistor when the potential difference across it is 2.5V.

(1+1+2)

- Q33. Analyse the following observation table showing the variation of image distance (v) with object distance (u) in the case of a convex lens and answer the following questions:

S.No.	Object Distance u(cm)	Image Distance v(cm)
1	-100	+25
2	-60	+30
3	-40	+40
4	-30	+60
5	-25	+100
6	-15	+120

- (a) What is the focal length of the convex lens? Give a reason to justify your answer.

(b) Write the serial number of the observation which is not correct. On what basis have you arrived at this conclusion?

(c) Select an appropriate scale and draw a ray diagram for the observation at S.No. 2. Also find the approximate value of magnification.

Q34. A person has been facing difficulty while reading books or looking at the objects that are close to him. However he sees distant objects clearly.

(a) What kind of defect of vision is he suffering from? What type of lens is used to correct this defect?

(b) State two causes of this defect.

(c) Draw a ray diagram to illustrate the correction of this defect by a suitable lens.

(d) What happens to the image distance in the normal human eye when we decrease the distance of an object, say 10m to 1m? Justify your answer. (5)