TERM-I EXAMINATION 2025-26
SCIENCE (086)

Class: X | Time: 3 hours
Date: 15.09.25 | Max Marks: 80
Admission no: | Roll no:

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 (Biology) **Marks**

1 During cellular oxidation of Glucose, ATP is produced along with formation of other products in this reaction. Which of the following events is associated with production of maximum ATP molecules per molecule of Glucose during this process? Synthesis of — 1

A. ethanol in yeast
B. lactic acid in muscle cells
C. carbon dioxide in yeast cells
D. carbon dioxide in human cells

2 Select the group in which all organisms have the same mode of nutrition. — 1

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

3 Growth of pollen tube towards ovule during fertilisation is an example of: — 1

A. Phototropism B. Geotropism
C. Chemotropism D. Hydrotropism

4 Which of the following statements about transmission of nerve impulse is incorrect? — 1

A. Nerve impulse travels from dendritic end towards axonal end
B. At the dendritic end electrical impulses bring about the release of some chemicals which generate an electrical impulse at the axonal end of another neuron
C. The chemicals released from the axonal end of one neuron cross the synapse and generate a similar electrical impulse in a dendrite of another neuron
D. A neuron transmits electrical impulses not only to another neuron but also to muscle and gland cells

5 A farmer wants to grow banana plants genetically similar enough to the plants already available in his field. Which one of the following methods would you suggest for this purpose? 1

A. Regeneration B. Budding

C. Vegetative propagation D. Sexual reproduction

6 The correct sequence of reproductive stages seen in flowering plants is 1

A. gametes, zygote, embryo, seedling

B. zygote, gametes, embryo, seedling

C. seedling, embryo, zygote, gametes

D. gametes, embryo, zygote, seedling

7 If a tall pea plant is crossed with a pure dwarf pea plant then, what percentage of F1 and F2 generation respectively will be tall? 1

A. 25%, 25% B. 50%, 50%

C. 75%,100% D. 100%, 75%

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): Positive phototropism means movement towards light. 1
Reason (R): When sunlight falls on one side of plant, the auxin diffuses towards the sunny side of shoot. Auxin concentration stimulates cells to grow longer.

9 Assertion(A): Spores are unicellular bodies. 1
Reason (R): The parent body simply breaks up into smaller pieces on maturation.

10 i) Differentiate between self-pollination and cross-pollination. 2
ii) What is the fate of ovules and ovary after fertilization in a flower?

11 <u>Students to attempt either option A or B.</u> 2

A. What is the purpose of making urine in the human body? Name the organs that stores and releases the urine.

OR

B. Why do arteries have thick and elastic walls whereas veins have valves? How is septum useful for efficient working of human heart?

12 Why did Mendel select pea plant for his experiments? 2

13 Plants have neither a nervous system nor muscles, even then they respond to stimuli. For example, the leaves of chhui-mui (touch-me-not) plant when touched begin to fold up and droop. 3

(i) How is the information communicated in “touch-me-not” plants?

(ii) What enables the plant cells to bring out the observable response?

(iii) Differentiate the movement mentioned above from the movement of tendrils in a pea plant?

14 In a genetic experiment, plants with pure round green seeds (RRyy) were crossed with plants with wrinkled yellow seeds (rrYY). 3

(i) Show the gametes formed when F1 was self-pollinated.

(ii) A total of 3200 seeds were produced in F2 which developed into saplings. Show the ratio in which these traits are independently inherited in these 3200 sapling.

15 Given below are certain situations. Analyze and describe its possible impact on a person: 4

Attempt either subpart A or B.

A.Testes of a male boy are not able to descend into scrotum during his embryonic development.

OR

B. Prostate and seminal vesicles are not functional.

C. Placenta does not attach to the uterus optimally.

D. Egg is not fertilised in a human female.

16 Attempt either option A or B. 5

A. (i) State the role of ATP in cellular respiration. What is the internal energy reserve in plants and animals.

(ii) How does desert plants perform photosynthesis if their stomata remain closed during the day? The transport system in plants is relatively slower than in animals.Give reason.

OR

B. (i) Explain giving any two reasons the significance of transpiration in plants.

(ii) Give an experiment to prove that chlorophyll is essential for photosynthesis.

Section-B (Chemistry)

17 Which of the following is a displacement reaction? 1

A. $Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ B. $NaOH + HCl \rightarrow NaCl + H_2O$

C. $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$ D. $CaCO_3 \rightarrow CaO + CO_2$

18 Which of the following gases is evolved during the thermal decomposition of calcium carbonate? 1

A. Oxygen B. Carbon dioxide

C. Hydrogen D. Nitrogen

19 Which of the following is a basic salt? 1

A. Sodium chloride B. Ammonium chloride

C. Sodium carbonate D. Potassium nitrate

20 Which acid is present in curd? 1

A. Acetic acid B. Oxalic acid

C. Citric acid D. Lactic acid

21 What happens when an acid reacts with a metal carbonate? 1

A. Only salt and water are formed

B. Salt and hydrogen gas are formed

C. Salt, water and carbon dioxide are formed

D. Only carbon dioxide is formed

22 Which of the following pairs will give displacement reactions? 1

A. $FeSO_4 + Cu$ B. $ZnSO_4 + Fe$

C. $CuSO_4 + Zn$ D. $AgNO_3 + CuSO_4$

23 Which of the following is NOT a physical property of metals? 1

A. Malleability B. Ductility

C. Brittleness D. Electrical conductivity

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.

C. A is true but R is false.

D. A is false but R is true.

24 Assertion (A): Sodium and potassium are stored under kerosene. 1

Reason (R): They are highly reactive and react vigorously with air and water.

25 Write the balanced chemical equation for the reaction between: 2

A. Hydrogen and chlorine to form hydrogen chloride

B. Aluminium and copper sulphate solution.

26 Attempt either option A or B. 3

A. Explain the formation of NaCl and MgO (at no. of Na=11 and Mg=12)

OR

B. Explain the formation of Na_2O and $MgCl_2$ (at no. of Na=11 and Mg=12)

27 What happens when 3

A. Zinc granules are added to dilute sulphuric acid?

B. Iron nails are placed in copper sulphate solution?

C. A piece of magnesium is burnt in the air?

28 Read the following passage and answer the questions: 4

While cleaning the school laboratory, a student found an old iron nail. He noticed that the nail had turned reddish-brown and had flakes around it. His teacher explained that this is due to the corrosion of iron, which is a chemical reaction between iron, water, and oxygen present in the air.

Based on this information, answer the following questions:

A. What is the chemical name of the reddish-brown substance formed on the iron nail?

B. Name the type of chemical reaction involved in rusting.

C. Mention two ways to prevent rusting.

OR

D. Name the conditions by which rusting will take place.

29 Attempt either option A or B. 5

A. What happens when:

(i) Dry HCl gas is passed through litmus paper?

(ii) HCl is dissolved in water?

(iii) A base reacts with a non-metallic oxide?

(iv) write any two importance of pH in our daily life.

OR

B. Explain the preparation and uses of baking soda (sodium hydrogen carbonate). Write the chemical equation involved in its preparation. What happens when it is heated? Write the balanced chemical equation. Also mention any two uses of baking soda in daily life.

Section-C (Physics)

30 A concave mirror forms a real and inverted image when the object is placed: 1

A. Between the mirror and the focus B. At the centre of curvature

C. At infinity D. Both B and C

31 The sky appears blue because: 1

A. Blue light is absorbed most by the atmosphere

B. Blue light is scattered the most

C. Red light is scattered the most

D. Blue light travels fastest

The following question consists of two statements – **Assertion** (A) and **Reason** (R). Answer these questions by selecting the appropriate option given below:

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C. A is true but R is false.

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32 Assertion (A): A real image cannot be seen on a screen. 1

Reason (R): A real image is formed by converging rays.

33 Stars twinkle but planets do not why? 2

34 Attempt either option A or B. 2

A. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the nature and position of the image.

OR

B.The magnification produced by a spherical mirror is +1.5.

(i) Is the image real or virtual?

(ii) What type of mirror is used?

(iii) If the object is 20 cm in front of the mirror, calculate the image distance.

(iv) Find the focal length of the mirror.

35 Define the refractive index of a medium. If the speed of light in vacuum is 3×10^8 m/s and in a medium is 2×10^8 m/s, calculate its refractive index. 3

36 Explain why. 3

(i) A convex mirror is preferred as a rear-view mirror in vehicles.

(ii) A concave mirror use by dentists.

37 How is a rainbow formed in the sky? Write the three phenomena that happen in the formation of the rainbow by a labelled diagram. 3

38 Read the passage and answer the questions below: 4

Amit visited an eye specialist as he had trouble reading books. After examination, the doctor prescribed him convex lenses. The doctor also explained how the eye changes its focal length.

Questions:

A. What eye defect is Amit suffering from?

B. Which part of the eye controls its focal length?

Attempt either subpart C or D.

C. How do convex lenses help?

OR

D. What is meant by power of accommodation?

39 Attempt either option A or B. 5

A. (i) State and explain the laws of refraction of light. Draw a neat diagram showing refraction through a rectangular glass slab.

(ii) An object is placed at a distance of 12 cm from a convex lens of focal length 8 cm.

(a) Find the image distance using the lens formula.

(b) State the nature and size of the image.

OR

B. (i) Write rules for image formation by concave mirrors.

(ii)An object 5 cm high is placed at a distance of 20 cm from a convex mirror of focal length 15 cm. Find the position, nature, and height of the image.

**********ALL THE BEST**********