

REVISION EXAMINATION : 2025-26

CLASS : X

SUBJECT : SCIENCE

Time Allowed: 3 Hours

Max. Marks : 80

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

- 1. Choose the function of the pancreatic juice from the following : (1)
 - A. trypsin digests proteins and lipase carbohydrates
 - B. trypsin digests emulsified fats and lipase proteins
 - C. trypsin and lipase digest fats
 - D. trypsin digests proteins and lipase emulsified fats

- 2. Energy in the case of higher plants and animals is obtained by (1)
 - A. Breathing
 - B. Tissue respiration
 - C. Organ respiration
 - D. Digestion of food

- 3. The growth of tendrils in pea plants is due to (1)
 - A. effect of light
 - B. effect of gravity
 - C. rapid cell divisions in tendrillar cells that are away from the support
 - D. rapid cell divisions in tendrillar cells in contact with the support

- 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. Height of a plant is regulated by: (1)
- DNA which is directly influenced by growth hormone.
 - Genes which regulate the proteins directly.
 - Growth hormones under the influence of the enzymes coded by a gene.
 - Growth hormones directly under the influence of a gene.
6. In 1987, an agreement was formulated by the United Nations Environment Programme (UNEP) to freeze the production of "X" to prevent depletion of "Y". "X" and "Y" respectively referred here are: (1)
- | | |
|-----------------|-----------------------------|
| A. Ozone; CFCs | B. CFCs; rays UV |
| •C. CFCs; Ozone | D. UV rays; Diatomic oxygen |
7. Identify the incorrect statement 'The energy available to the producers is maximum' because: (1)
- It is the first trophic level which absorbs 1% of light energy directly from the source.
 - It utilizes the most of the chemical energy for its own respiration, growth, reproduction, movement etc.
 - It utilizes 10% of light energy and transfers the rest to the next trophic level.
 - It transfers only 10% of light energy to the next trophic level.

The following two questions consist of two statements – Assertion (A) and Reason (R).

Answer these questions by selecting the appropriate option given below:

- Both A and R are true, and R is the correct explanation of A.
 - Both A and R are true, and R is not the correct explanation of A.
 - A is true but R is false.
 - A is false but R is true.
8. Assertion (A) : Each human trait is influenced by both paternal and maternal DNA.
Reason (R) : As compared to the father, the mother contributes more amount of genetic material to the child. C (1)
9. Assertion (A) : Biodegradable substances result in the formation of compost and natural replenishment. d
Reason (R) : It is due to breakdown of complex inorganic substances into simple organic substances. (1)
10. How will you create an artificial aquatic ecosystem, which is self-sustainable? (2)

11. Students to attempt either option A or B. (2)
- A. Differentiate between xylem and phloem on the basis of the following :
- (i) Direction of transport of the substances
 - (ii) Major driving forces involved in the transport
- OR
- B. Give reasons :
- (i) Ventricles have thicker muscular walls than atria.
 - (ii) Veins have valves whereas arteries do not
12. At which trophic level do we find secondary and tertiary consumers in a food chain? What will happen if all the organisms of a trophic level die? (2)
13. In a germinating seed, which parts are known as future shoot and future root? Mention the function of cotyledon and draw diagram of germinating seed. (3)
14. A blue colour flower plant denoted by BB is crossbred with a white colour flower plant denoted by bb. (3)
- (i) State the colour of flower you expect in their F_1 generation plants.
 - (ii) What must be the percentage of white flower plants in F_2 generation if flowers of F_1 plants are self-pollinated?
 - (iii) State the expected ratio of the genotypes BB and Bb in the F_2 progeny.
15. Green plants are capable of synthesizing their own food using simple inorganic substances like carbon dioxide and water in the presence of sunlight. This process is called photosynthesis. The green pigment chlorophyll present in plant cells traps sunlight and facilitates food production. (4)
- Attempt either subpart A or B :
- A. What are the events that take place during photosynthesis ?
- OR
- B. How is the opening and closing of stomata regulated ?
- C. Why is diffusion insufficient to meet the oxygen requirements of multicellular organisms like humans?
- D. Why are molecular movements needed for life?
16. Attempt either option A or B. (5)
- A. Given below are certain situations. Analyze and describe its possible impact on a person:
- (i) Testes of a male boy are not able to descend into scrotum during his embryonic development.
 - (ii) Vas deferens of a man is plugged.

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

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

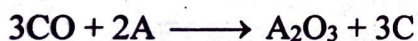
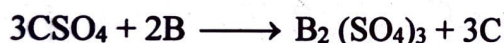
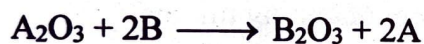
24. Assertion (A) : C_2H_4 is an unsaturated hydrocarbon. (1)

Reason (R) : Unsaturated hydrocarbon can be tested by using Bromine water. ^b

25. i) Write the balanced chemical equation for the reaction that is prevented by storing potassium metal under kerosene.
- ii) Identify the type of chemical reaction that is prevented. (1+1)

26. Attempt either option A or B

A. A, B and C are three elements which undergo chemical reactions according to the following equations : (1+1+1)



- i) Which element is the most reactive ? Give reason.
- ii) Which element is the least reactive ? Explain.
- iii) What is the type of reaction listed above ? Give one example.

OR

B. During the reaction of some metals with dilute HCl , following observations were made. (1+1+1)

- i) Silver metal does not show any change.
- ii) The temperature of the reaction mixture rises when aluminium (Al) is added.
- iii) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.

Give reason for each of the above observations.

27. On heating blue coloured powder of copper (II) nitrate in a boiling tube, a brown gas X is formed. (1+1+1)

- A. Write the balanced chemical equation of the reaction.
- B. Identify the brown gas X is formed.
- C. Identify the type of reaction.

28. Seawater contains many salts dissolved in it. Common salt is separated from these salts. Deposits of solid salt are also found in several parts of the world. These large crystals are often brown due to impurities. This is called rock salt and is mined like coal. The common salt is an important raw material for chemicals of daily use. (1+1+2)

A. Write balanced chemical equations to show the products formed during electrolysis of brine.

B. List two uses of any one product obtained during electrolysis of brine.

Attempt either subpart C or D

C. A mild non-corrosive basic salt 'A', used for faster cooking, is strongly heated to produce a compound 'B', that is used for removing permanent hardness of water. Identify A and B and also write the equation for the reaction that occurs when A is heated.

OR

D. Define water of crystallization. Give two examples of salts that have water of crystallization.

29. Attempt either option A or B.

A. i) A carbon compound X is a good solvent. On reacting with sodium, X forms two products Y and Z. Z is used to convert vegetable oil into vegetable ghee. Identify X, Y and Z. Also write the equation for reaction of X with sodium to justify your answer. (3+2)

ii) Write chemical equation to show what happens when ethanol :

a) burns in air / oxygen.

b) is heated at 443 K in excess conc. H_2SO_4 .

OR

B. i) Draw electron dot structure of chlorine molecule. (1+1+1+2)

ii) What happens when chlorine reacts with methane in the presence of sunlight? Write the name of the reaction.

iii) Name the two oxidising agents used for conversion of alcohols to acids.

iv) List any four differences in properties between covalent compounds and ionic compounds.

SECTION C

30. The refractive index of flint glass is 1.65 and that for alcohol is 1.36 with respect to air. What is the refractive index of the flint glass with respect to alcohol? (1)

A. 0.82

B. 1.21

C. 1.11

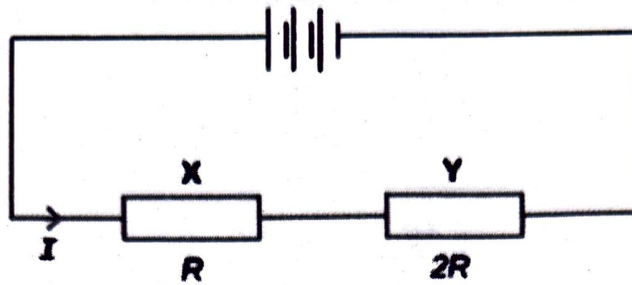
D. 1.01

- (ii) If the resistance of X is double that of Y, calculate the current in heater Y.

OR

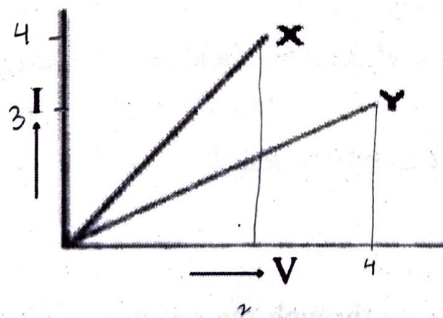
B.

(2)



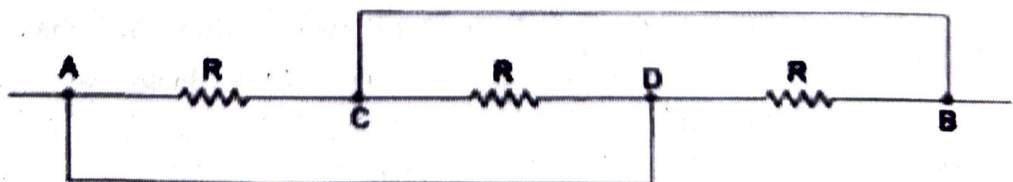
The above figure shows two resistors X and Y connected in series to a battery. The power dissipated for this combination is P_1 . When these resistors are connected in parallel to the same battery then the power dissipated is given by P_2 . Find out the ratio P_1/P_2 .

35. A. If your eye glasses have a focal length of 60 cm, what is your near point? (1+1+1)
 B. Why do we observe random wavering or flicking of objects near a fire or on a very hot day?
 C. Why are we not able to see things clearly when we come out of a dark room?
36. A. Why is an ammeter likely to be burnt out if it is connected in parallel in a circuit? (1+1+1)
 B. I-V graph for the metallic wires X and Y at constant temperature are as shown in figure:

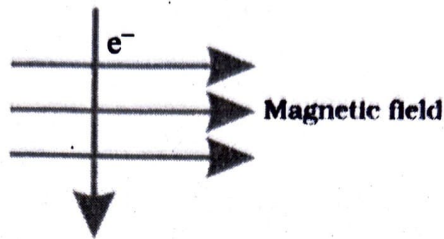


Assuming that the two wires have the same length and same diameter, explain as to which of the two wires has higher resistance and why?

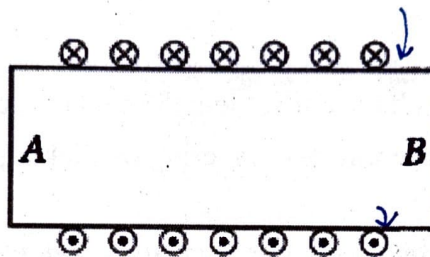
- C. What is the resistance from A to B in the network shown in the figure?



37. A. A straight wire carrying current is moving out of the plane of paper and is perpendicular to it. What is the direction of magnetic field lines of force? (1+1+1)
- B. An electron enters a magnetic field at right angles to it, as shown in the figure. The direction of force acting on the electron will be



- C. Diagram shows the lengthwise section of a current carrying solenoid. \otimes indicates current entering into the page, \odot indicates current emerging out of the page. Decide which end of the solenoid A or B, will behave as the north pole. Give reason for your answer.



38. An object is placed at a distance of 90 cm from a screen. To cast an image of magnification 2 on the screen. (1+1+2)

- A. What type of spherical lens is required ?
- B. Draw the ray diagram for the same.

Attempt either subpart C or D.

- C. Determine the position of the object and its focal length.

OR

- D. What are the uses of this type of lens ?

39. Attempt option A or B.

- A. i. Current I flowing through the resistor results in dissipation of power P . By what percentage will the power dissipated in the resistor increase if the current through the resistor is increased by 50%? Justify your answer with the help of mathematical calculations.
- ii. Heating element of a toaster is made of alloy rather than metal. Why?
- iii. 3×10^{11} electrons flow through a conductor in 2 minutes. Find the current. (3+1+1)

OR

- B. i. Two cubes A and B are made of the same material. The side of B is thrice that of A. Find the ratio of R_A/R_B . (2+1+2)
- ii. What is the possible minimum value of resistance which one can obtain by using resistors of values 2Ω , 3Ω and 6Ω ? Justify your answer.
- iii. Out of two electric bulbs of $50\text{ W} - 220\text{ V}$ and $100\text{ W} - 220\text{ V}$. Which one will glow brighter when they are connected (i) in series, and (ii) in parallel? Explain.