केंद्रीय विद्यालय संगठन,अहमदाबाद संभाग **SET-B**

Kendriya Vidyalaya Sangathan, Ahmedabad Region

कक्षा दसवीं प्री-बोर्ड II परीक्षा 2025-26

Pre Board II Examination 2025-26 for Class X

SUBJECT : SCIENCE (086)

MM :80 **TIME:3hrs.**

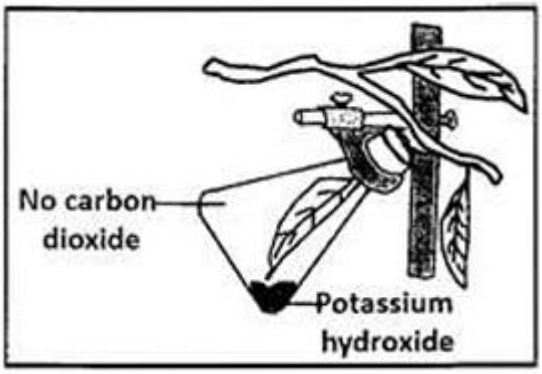
General Instructions:

(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. Identify the aim of given experiment? 1



a) To prove that sun light is essential for photosynthesis
b) To prove that carbon dioxide is essential for photosynthesis
c) To prove that water is essential for photosynthesis
d) To prove that chlorophyll is essential for photosynthesis.

2. What are the final products of proteins, carbohydrates and fats respectively in human digestion 1
a) (i) Amino acids, (ii) glucose and (iii) fatty acids
b) (i) Amino acids, (ii) glucose, (iii) fatty acids and glycerol
c) (i) Glucose, (ii) fatty acids and glycerol, (iii) amino acids
d) (i) Sugar, (ii) amino acids, (iii) fatty acids and glycerol

3. Name the plant hormone that acts as a growth inhibitor and is also responsible for causing leaf wilting. 1
a) Abscisic acid b) Cytokinin c) Auxin d) Gibberellin

4. Which statement shows interaction of an abiotic component with biotic component in an ecosystem? 1
a) A mouse fighting with another mouse for food.
b) An earthworm making a burrow in the soil.
c) A grasshopper feeding on a leaf.
d) Rainwater running down into the lake.

5. What type of energy is transferred from one trophic level to the next in a foodchain? 1
a) Heat energy b) Light energy c) Mechanical energy d) Chemical energy

6. Which one is not a reason for the success of Mendel? 1
(a) Made statistical analysis of the offspring
(b) Kept accurate records
(c) Selection of pea plant
(d) Performed only self-pollination in plants

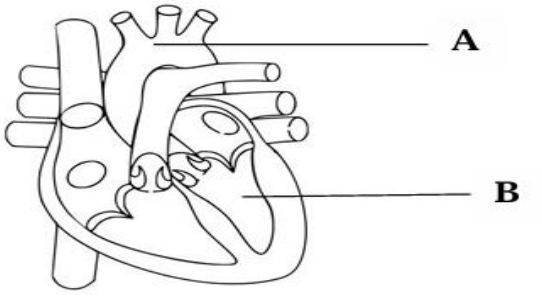
7. The decomposers are not included in the grazing food chain. The correct reason of the same is because decomposers 1
(a) act at every trophic level of the food chain
(b) do not breakdown organic compounds
(c) convert organic material to inorganic forms
(d) release enzymes outside their body to convert organic material to inorganic forms

Below question is Assertion and Reason based question.
These consist of two statements – Assertion (A) and Reason (R).
Answer these questions 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): Most of the plants close their stomata at night. 1
Reason(R): Closing of stomata helps to conserve water as large amount of water evaporates from the leaves.

9 A cross between a tall plant (TT) and dwarf plant (tt) resulted in progeny that were all tall plants as: 1
a) Tallness is the dominant trait b) Shortness is the dominant trait
c) Tallness is the recessive trait d) Height of plant is not governed by gene t or t

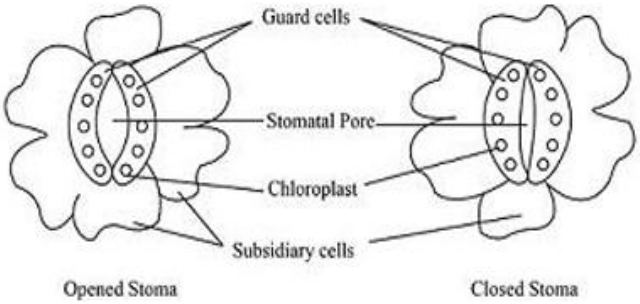
10 a) What are the benefits of having a four-chambered heart in birds and mammals? 2
b) Name the following parts in the given picture



OR

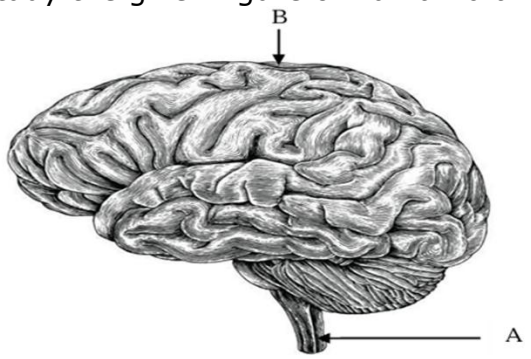
a) Why is there a difference in the rate of breathing between aquatic organisms and terrestrial organisms? Explain.
b) Name the respiratory pigment present in the Human blood.

11 a) State two functions of stomata. 2
b) How do guard cells regulate the opening and closing of stomatal pore?



12 What is the difference between food chain and food web. Draw a simple aquatic food chain. 2

13 Study the given figure of human brain and answer the questions that follow: 3



a) State the role of the spinal cord in reflex action.

OR

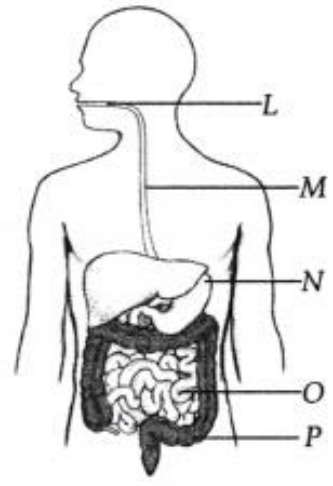
a) State the functions of cerebellum.
b) What is the function of the fluid filled in the brain?
c) Name the parts A and B.

14 (a) Why did Mendel carry out an experiment to study inheritance of two traits in garden pea plant? 3
(b) In a following cross between two heterozygous Round seeds Rr x Rr, What will be the phenotypic ratio and genotypic ratio obtained in F1 generation?

15 Neha consumed boiled sweet potatoes and boiled eggs for breakfast. Help her to understand some steps in the process of digestion of the food taken by her by answering the questions given below. 4
Attempt either subpart A or B.
A. Which of these food items is rich in proteins? In which part of the alimentary canal is the digestion of this component initiated? Name the enzymes, conditions required and the glands associated with the digestion here.

OR

B. Which of these food items contains fats? How is it digested?
C. Which of these food items is rich in starch? How is its digestion initiated?
D. The figure given below represents parts of the human alimentary canal. Which of these parts will have the maximum amount of digested food as soon as the process of digestion is completed?



Human Alimentary Canal

16 a) Name the following parts in human female reproductive system. 5
i) That produces egg
ii) Where fusion of egg and sperm takes place
iii) Where zygote is implanted
b) Name and explain any two methods of contraception

OR

a) Why is fertilization not possible without pollination?
b) State the post-fertilization changes that lead to fruit formation in plant.
c) Write any two advantages of vegetative propagation.

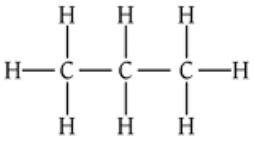
Section – B

17 Out of the following statements, which is correct for the given chemical reaction? 1
$ZnO + CO \rightarrow Zn + CO_2$
a) ZnO is being oxidized
b) CO is being reduced
c) CO_2 is being oxidized
d) ZnO is being reduced

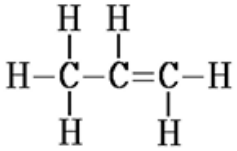
18 Baking powder is a mixture of: 1
a) Sodium carbonate and Acetic acid
b) Sodium carbonate and Tartaric acid
c) Sodium hydrogen carbonate and Tartaric acid
d) Sodium hydrogen carbonate and Acetic acid

19 From the following reactions which one is considered to be endothermic reaction: 1
a) Decomposition of vegetable matter into compost.
b) Decomposition of calcium carbonate to form quick lime and carbon dioxide.
c) Burning of a candle
d) Process of respiration.

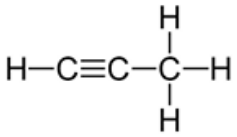
20 Identify the following unsaturated hydrocarbons given below? 1



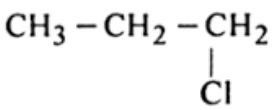
(i)



(ii)



(iii)



(iv)

a) (i) and (ii) b) (i) and (iv) c) (iii) and (iv) d) (ii) and (iii)

21 An aqueous solution 'A' turns phenolphthalein solution pink. On addition of an aqueous solution 'B' to 'A', the pink colour disappears. Which of the following statement is true for solution 'A' and 'B'? 1
a) 'A' is strongly basic and 'B' is a weak base.
b) 'A' is strongly acidic and 'B' is a weak acid.
c) 'A' has pH greater than 7 and 'B' has pH less than 7.
d) 'A' has pH less than 7 and 'B' has pH greater than 7.

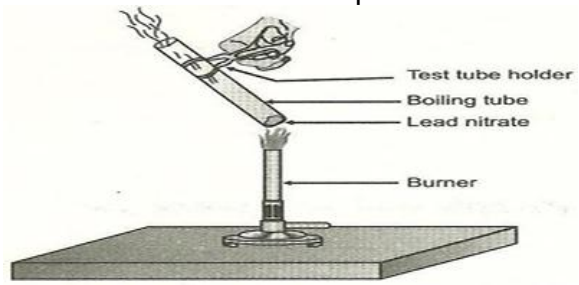
22 Galvanization is a method of protecting Iron from rusting by coating with a thin layer of: 1
a) Gallium b) Aluminium c) Zinc d) Silver

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23 Assertion (A): The extraction of metals from their sulphide ores cannot take place without roasting of the ore. 1
Reason (R): Roasting converts sulphide ores directly into metals.

24 Caustic soda is termed an alkali while ferric hydroxide is not because [1] 1
(a) caustic soda is a strong base, while ferric hydroxide is a weak base
(b) caustic soda is a base which is soluble in water while ferric hydroxide is also a base but it is not soluble in water
(c) caustic soda is a strong base while ferric hydroxide is a strong acid
(d) caustic soda and ferric hydroxide both are strong base but the solubility of sodium hydroxide in water is comparatively higher than that of ferric hydroxide

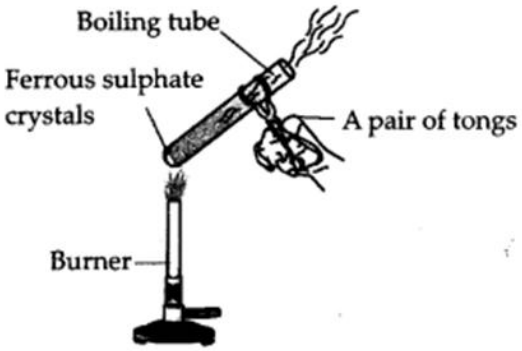
25 Observe the given picture and answer the questions that follow: 2



a) Name the type of chemical reaction that takes place in the above given experiment and Name the products formed during the reaction.
b) Write balanced chemical equation for the reaction.

26 a) Define water of crystallization.
b) Give the chemical formula for two compounds as example.
c) How can it be proved that the water of crystallization makes a difference in the state and colour of the compounds?

27 Observe the figure given below and answer the following questions.

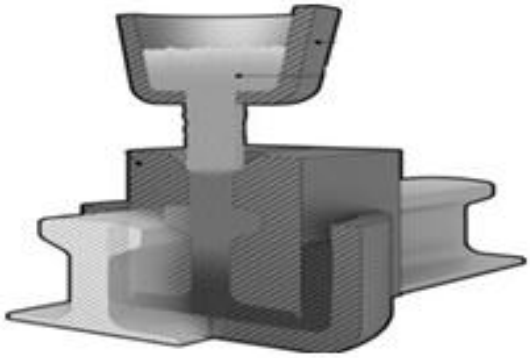


(a) Identify the gases evolved.
(b) Name the type of the reaction shown in figure.
(c) What is the formula of crystalline ferrous sulphate? Write the equation involved.

28 Give reasons: 4
a) Pickles are not stored in tin metal container.
b) Ionic compounds are poor conductor of electricity in solid state.
c) Carbonate and sulphide ores are usually converted into oxides during the process of extraction.
(d) Gold and silver do not react with any form of water.

OR

a) What is thermite reaction? Write balanced chemical equation for the reaction involved.



b) Name the substance that are getting oxidized and reduced in the thermite reaction.

29 a)i) Identify A, B, C and D 5

$$\mathbf{A} \xrightarrow{\text{Alkaline } KMnO_4} \mathbf{B}$$

$$\mathbf{A} + Na_{(s)} \longrightarrow CH_3CH_2ONa + H_{2(g)}$$

$$\mathbf{B} + C_2H_5OH \xrightarrow{\text{Conc. } H_2SO_4} CH_3COOC_2H_5 + H_2O$$

$$\mathbf{B} + NaOH \longrightarrow \mathbf{C}$$

$$\mathbf{B} + \text{Baking soda} \longrightarrow CH_3COONa + H_2O + \mathbf{D}\ (\text{Colourless gas})$$

ii) What is Saponification? Write its Equation.
iii) What change will Ram observe if he adds, soap solution to red and blue litmus paper?

OR

b) A compound 'X' on heating with excess conc. sulphuric acid at 443 K gives an unsaturated compound 'Y'. 'X' also reacts with Sodium metal to evolve a colourless gas 'Z'. Identify
'X', 'Y' and 'Z'. Explain the chemical equation involved in the formation of 'Y' and also Write the role of Sulphuric acid in the reaction.

Section – C

30 Generally, non-metals are not lustrous. Which of the following non-metal is lustrous? 1
a) Sulphur b) Bromine c) Phosphorous d) Iodine

31 An object is positioned 30 cm away from a convex mirror with a focal length of 15 cm. 1
At what distance the image is formed from the pole:
a) +20cm from the pole b) -10cm from the pole
c) +10cm from the pole d) + 60cm from the pole

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32 Assertion(A): Higher the Refractive index of the medium, lesser will be the speed of light in that Medium. 1
Reason(R): Refractive index is inversely proportional to the speed of light

33 A student has focused the image of an object of height 3cm on a white screen using a 2

concave mirror of focal length 12cm. If the distance of the object from the mirror is 18cm, find the values of the following:

a) Distance of the image from the mirror.

b) Height of the image.

34 a) Why is the tungsten used exclusively as filament for almost all electric lamps? 2

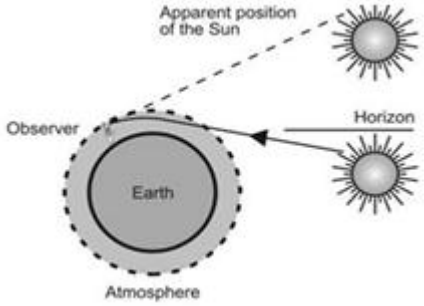
b) Why are the conductors of electric heating devices, such as bread-toasters and electric irons, made of an alloy rather than a pure metal?

OR

a) How does the resistance of a wire vary with its area of cross-section?

b) Why Copper and Aluminium wires are usually used for electricity transmission?

35 a) Identify the natural phenomenon shown in the picture given below. 3



b) Explain with the help of the above labelled diagram that why the position of the star is seen by us is not in its true position.

36 a) State Ohm's Law. 3

b) Two wires A and B of same material, having same lengths and diameters 0.2mm and 0.3 mm respectively, are connected one by one in a circuit. Which one of these two wires will offer more resistance to the flow of current in the circuit? Justify your answer.

37 What is a solenoid? When does a solenoid behave as a magnet? Draw the pattern of the magnetic field produced inside it showing the directions of the magnetic field Lines. 3

38 Read the following passage and answer the questions that follow. 4

A student took three convex lenses of different focal lengths and performed the experiment to see the image formation by placing an object at different distances with these lenses as shown in the following table.

Case No.	Object distance	Focal length
I	40 cm	20 cm
II	25 cm	15 cm
III	20 cm	30 cm

a) List two properties of the image formed in Case I.

b) In which one of the cases given in the table, the lens will form virtual image?

c) Name the type of lens used by dentists. Give reason why do they use such type of lens.

OR

c) Find the power of the lens used in Case I.

39 a) An electrical device of resistance R is connected across a source of voltage V and draws a current I. Derive an expression for power in terms of current and resistance. 5

b) Two electric bulbs rated 100 W, 220 V and 60 W, 220 V are connected in parallel to an electric mains of 220 V. Find the current draws by the bulbs from the mains.

OR

a) Define Power and state its SI unit.

b) A torch bulb is rated 5V and 500 mA. Calculate its

i) Power ii) Resistance

iii) Energy consumed when it is lighted for 2 1/2 hours