*Cheating Replaces Learning*

**PREBOARD II (Paper 1)**

**MM.50** **BVP/X/SCI/2025-26**

**Time: 2 hours**

***General Instructions:***

***(i) This question paper consists of questions in 2 sections. Section A is Chemistry of 30 marks in total , Section B is Biology of 20 marks in total.***

***(ii) All questions are compulsory.***

## SECTION-A

1. In the equation, $Pb_3O_4 + 8HCl \rightarrow 3PbCl_2 + Cl_2 + 4H_2O$ the substance, $Pb_3O_4$ acts as: (1)
   (a) a dehydrating agent (b) a reducing agent
   (c) an acid ( ) an oxidising agent

2. When dilute HCl is added to zinc pieces taken in a test tube (1)
   (a) No change takes place
   (b) the colour of the solution becomes yellow.
   (c) A pungent smelling gas gets liberated.
   (d) small bubbles of $H_2$ gas appear on the surface of zinc pieces

3. A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue? (1)
   (a) Vinegar (b) An antacid
   (c) Common salt (d) Lemon juice

4. What is formed when zinc reacts with sodium hydroxide? (1)
   (a) Zinc hydroxide and sodium
   ( ) Sodium zincate and hydrogen gas
   ( ) Sodium zincate and water
   (d) Sodium zinc-oxide and hydrogen gas

5. Metal which is always found in free state is: (1)
   ( ) Gold (b) Zinc
   (c) Copper (d) Sodium

6. Oxides of moderately reactive metals are reduced by using (1)
   (a) Electrolytic reduction (b) Simply heating
   ( ) Carbon as reducing agent (d) Calcium as reducing agent

7. While cooking, if the bottom of the vessels is getting blackened on the outside, it means that (1)
   (a) the fuel is an efficient fuel.
   (b) the fuel is made up of saturated hydrocarbons
   (c) the fuel is burning completely.
   ( ) the fuel is not burning completely.

8. Butanone is a four carbon compound with the functional group (1)
   ( ) ketone (b) aldehyde
   (c) carboxylic acid (d) alcohol

9. Which amongst the following will conduct electricity? (1)
(a) $C_6H_{12}O_6$ ( ) NaCl(aq) (c) pure water ( ) KCl(s)

**The following two questions 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

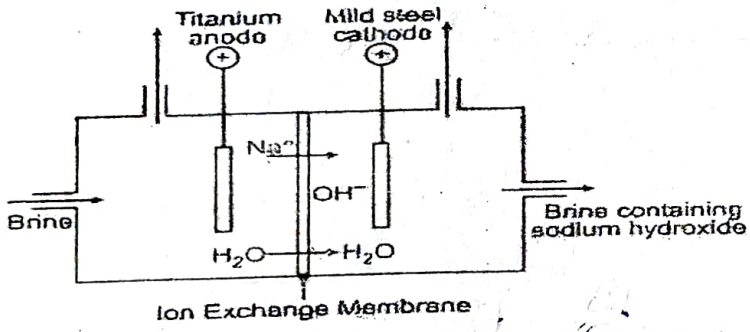
10. **Assertion (A):** Rusting of iron metal is the most common form of corrosion. (1)
**Reason (R):** The effect of rusting of iron can be reversed if they are left open in sunlight.

11. **Assertion(A):** Graphite is a good conductor of electricity. (1)
**Reason (R) :** It has one free valence electron.

12. Salts belonging to the same family share a common positive or negative radical. Consider the salts: (2)
Sodium Sulphate ($Na_2SO_4$), Ammonium Sulphate ($(NH_4)_2SO_4$), and Copper Sulphate ($CuSO_4$).
(a) Identify the family to which these three salts belong.
(b) Classify the salt Ammonium Sulphate into acidic/basic/neutral salt.
(c) What would be the colour of the Copper Sulphate solution?
(d) What visual change would occur if a clean strip of iron metal is placed in it?

13. A metal 'X' is found in nature as its sulphide ore, XS. This metal is used in the galvanising process to protect iron from rusting. (2)
(a) Identify the metal 'X'.
(b) Describe how the metal is extracted from its sulphide ore. Write the relevant chemical equations.

14. (3)




(i) Identify the gases evolved at the anode and cathode in the above experimental set up.
(ii) Name the process that occurs. Why is it called so?
(iii) Illustrate the reaction of the process with the help of a chemical equation.

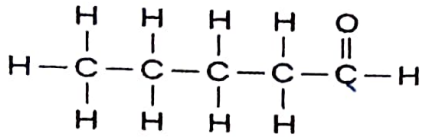
15. Give reasons- (3)
(i) Sodium cannot be obtained from its molten oxide ($Na_2O$) by reduction using carbon.
(ii) Ionic compounds are solids.
(iii) Calcium floats on water. Support your answer by giving a chemical equation.

16. **Read the following passage carefully and give the answer of the following questions:** (4)
Marble has been valued since ancient times, especially in Greek and Roman civilizations, for its strength, beauty, and durability. Large structures such as temples, pillars, and monuments were built using white and off-white marble, while artists carved detailed hand-held sculptures from the same material. Over centuries, many marble monuments have shown signs of damage due to chemical reactions with air pollutants and rainwater. This case highlights how the properties and reactions of materials influence their long-term use, preservation, and environmental impact.

(i) Write the chemical formula for marble.
(ii) Marble statues are corroded or stained when they repeatedly come into contact with polluted rain water. Identify the main reason.
(ii) A student added 10 g of the marble in a rigid container, secured it tightly and started to heat it.
a) Write a chemical equation to represent the reaction taking place.
b) Predict the type of chemical reaction

17. (a) Draw the electron-dot structure for a molecule of ethyne ($C_2H_2$) representing covalent bond formation. (5)
(b) Give the IUPAC names for the following compounds:
(i) $CH_3CH_2CH_2OH$

(ii)



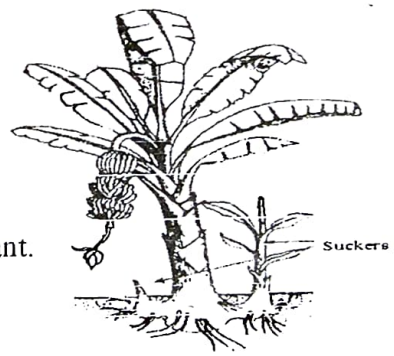
(c) Describe the cleansing action of soap with the help of a labelled diagram of a micelle.

## SECTION-B

18. A big tree falls in a forest, but its roots are still in contact with the soil. The branches of this fallen tree grow straight up (vertically). This happens in response to: (1)
a) Water and light b) Water and minerals
c) Gravity and water d) Light and gravity

19. A person consuming seafood is least likely to develop (1)
a) Diabetes ) Goitre c) Both A and B d) Heart Diseases

20. The image below shows a banana plant which is growing with the help of suckers. These suckers are small plant stem outgrowths which can be separated from the main plant and planted separately and they will grow into a new plant subsequently (1)
Find the INCORRECT statement about above shown mode of reproduction.
a) Plant will bear flowers and fruits earlier.
b) All plants produced will be genetically similar to parent plant.
c) Chances of survival of new plant grown will be more.
d) Number of plants can be produced at a time in less time.




**The following question 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
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21. **Assertion** : Generally, the number of chromosomes in a cell and in a germ cell is not the same in species. (1)
**Reason** : When two germ cells combine, they restore the normal number of chromosomes in a species

22. Annie was conducting research on the number of fruits produced by watermelon under different conditions. She grew 25 watermelon plants each in both glass house A and B. She introduced pollinators in glass house A only. (2)

a) What difference will she observe in the number of fruits produced in the two glass houses? Explain with reason.

b) List any two changes that will occur in a flower once it gets fertilized.

23. a) Folding of leaves of sensitive plants on touching and withdrawing of hand on touching a hot plate are both Quick actions. Explain how they are different in terms of mechanism of control and coordination. (3)

b) Name the receptors, which help us to enjoy:

i) Crispy pakoras ii) Fragrance of Sandal wood

24. Give reason: (3)

a.) Cytokinin is mainly found in fruits and seeds.

b.) Nerve impulse transmission is generally unidirectional (one-way)

c) Cerebrum is the main thinking part of brain.

25. **Read the given passage and answer the questions based on passage.** (4)

Thyroid gland is a bilobed structure situated in our neck region. It secretes a hormone called thyroxine. When there is an excess of thyroxine in the body, a person suffers from Hyperthyroidism and if this gland is under active it results in hypothyroidism. Hyperthyroidism is diagnosed by blood tests that measure the levels of thyroxine and Thyroid Stimulating Hormone (TSH).

a) What is the function of Thyroxine Hormone?

b) Write any one symptom of disease caused due to Hypo secretion of Thyroxine.

c) What is the significance of Hormonal system over Nervous system in our body?

d) Name the gland associated with changes occurring during puberty in case of girls and boys respectively.

26. a) Diagrammatically show Asexual Reproduction in case of Amoeba. (5)

b) How asexual reproduction of Amoeba is different from Asexual reproduction of Leishmania?

c) Identify D,E,F in the image given below and also write their function.