



CHEMISTRY

BOOKS - ICSE

SPECIMEN PAPER 3

Section I

1. Write the equations for the following and balance them

Iron reacts with steam to produce triferric tetraoxide and hydrogen.



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2. Write the equations for the following and balance them

Ammonium dichromate on heating decomposes into chromium oxide, water vapour and nitrogen.



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3. Write the equations for the following and balance them

Iron (III) chloride dissolves in water producing Iron (III) hydroxide and hydrochloric acid.



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4. Write the equations for the following and balance them

Magnesium reacts with nitrogen to give magnesium nitride.



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5. Write the equations for the following and balance them

Phosphorus burns in oxygen to give phosphorus pentoxide.



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6. Choose the correct word or letter from the brackets to complete the sentences.

Separation of hydrogen from carbondioxide is

achieved by passing the mixture through _____ (ammoniacal cuprous chloride, potassium hydroxide solution).



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7. Choose the correct word or letter from the brackets to complete the sentences.

Copper oxide reacts with hydrogen to produce copper and water. Copper oxide is _____ (reduced/oxidised) in this reaction.



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8. Choose the correct word or letter from the brackets to complete the sentences.

Potassium is placed in _____ group and _____ period of periodic table (first, second, third, fourth).



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9. Choose the correct word or letter from the brackets to complete the sentences.

Atomic number is equal to the number of

_____ (protons, electrons, neutrons) in an atom.



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10. Choose the correct word or letter from the brackets to complete the sentences.

The solubility of a gas in a liquid _____
(decreases, increases) with rise in
temperature.



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11. Name

An element which reacts with alkali to produce hydrogen.



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12. Name

Substances responsible for green house effect.



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13. Name

Inert gas of third period.



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14. Brown gas having an irritating odour.



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15. The ion formed when hydrogen loses one electron.



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16. Give reasons for the following

Nitric acid is not preferred in lab. preparation of hydrogen.



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17. Give reasons for the following

Dilute hydrochloric acid reacts with magnesium liberating hydrogen, but the same

is not liberated when the acid reacts with copper.



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18. Give reasons for the following

Boiled water tastes flat.



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19. Give reasons for the following

Carbon monoxide is a slow poison.



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20. Give reasons for the following

Chlorine displaces bromine from potassium bromide.



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21. State two methods to remove temporary hardness.



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22. A certain amount of a gas at $27^{\circ}C$ and 1 atmospheric pressure occupies a volume of $25dm^3$. If the pressure is kept constant and the temperature is raised to $77^{\circ}C$, what would be the volume of the gas ?



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23. Match the column A with column B

Column A

- (i) Elements at the bottom of periodic table
- (ii) Alkaline earth metal
- (iii) An element without neutron
- (iv) Liquid metal
- (v) Has 5 electrons in its valence shell

Column B

- A. Hydrogen
- B. Mercury
- C. Calcium
- D. Lanthanides
- E. Nitrogen



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24. An atom of an element X has 2 electrons in its N shell.

State its electronic configuration



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25. An atom of an element X has 2 electrons in its N shell.

Is it a metal or non-metal ?



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26. An atom of an element X has 2 electrons in its N shell.

State the number of protons in X.



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27. An atom of an element X has 2 electrons in its N shell.

Write the formula of its chloride.



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28. An atom of an element X has 2 electrons in its N shell.

Where is this element placed in the periodic table ?



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Section II

1. Copper sulphate crystals are heated strongly in a hard glass test tube. Write three observations noticed.



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2. What do you understand by
Hard water



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3. What are the causes for

Permanent hardness



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4. Explain one method of removing permanent

hardness.



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5. Give the equation for the lab preparation of hydrogen.



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6. Why the solid reactant is used in granulated form ?



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7. How is the gas recognised ?



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8. Mention any two impurities present in hydrogen prepared in laboratory.



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9. How are these impurities removed ?



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10. State three precautions taken in preparing hydrogen.



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11. Give three main characteristics of representative elements.



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12. Give the physical state of the last group members of the modern periodic table. State their valency.



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13. Elements X, Y and Z have atomic numbers 6, 9 and 12 respectively. Which one :
forms an anion



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14. Account for the following :

Though lead is above hydrogen in the activity series, it is not used to prepare hydrogen.



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15. Account for the following :

Potassium and sodium are not used to react with dil. HCl or dil. H_2SO_4 in the lab. preparation of hydrogen



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16. Account for the following :

Isotopes of an element possess identical chemical properties.



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17. Distinguish by flame test : Sodium chloride and potassium chloride.



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18. State the effect of temperature on solubility of the following:

Calcium sulphate



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19. State the effect of temperature on solubility of the following:

Potassium nitrate



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20. State the effect of temperature on solubility of the following:

Sodium chloride



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21. Define 'decomposition reaction'. Write an equation in each case

Thermal decomposition



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22. Define 'decomposition reaction'. Write an equation in each case

Decomposition by electricity



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23. Elements A, B and C have atomic numbers 9, 10 and 20 respectively. State which one is

(i) a metal

(ii) non-metal

(iii) chemically inert.

Explain the formation of bond between any

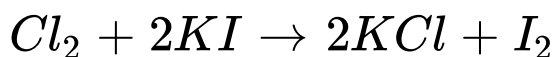
two elements. Draw its orbital diagram. Name the type of bond.



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24. Reactions can be classified as follows:

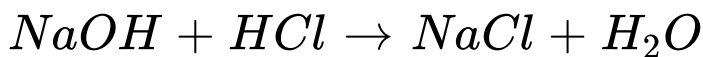
Direct combination, decomposition, simple displacement, double decomposition and neutralisation. State which of the above types takes place in the reactions given below.



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25. Reactions can be classified as follows:

Direct combination, decomposition, simple displacement, double decomposition and neutralisation. State which of the above types takes place in the reactions given below.

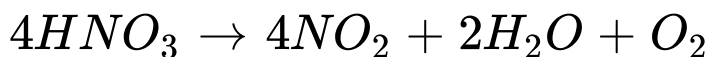


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26. Reactions can be classified as follows:

Direct combination, decomposition, simple

displacement, double decomposition and neutralisation. State which of the above types takes place in the reactions given below.

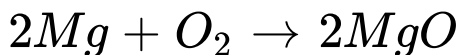


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27. Reactions can be classified as follows:

Direct combination, decomposition, simple displacement, double decomposition and neutralisation. State which of the above types

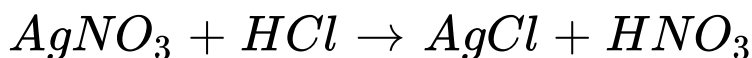
takes place in the reactions given below.



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28. Reactions can be classified as follows:

Direct combination, decomposition, simple displacement, double decomposition and neutralisation. State which of the above types takes place in the reactions given below.



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29. Name the substance responsible for the depletion of ozone layer.



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30. Give an example of an endothermic reaction.



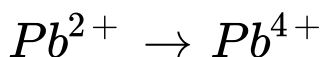
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31. Distinguish : zinc nitrate and lead nitrate, by heating.



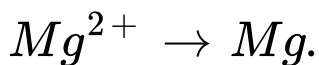
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32. Complete the following equations and state in each case if the reaction represents oxidation or reduction.



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33. Complete the following equations and state in each case if the reaction represents oxidation or reduction.



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34. Draw orbital diagrams for the formation of the following compounds.

Sodium chloride



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35. Draw orbital diagrams for the formation of the following compounds.

Water



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