SET-A

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ANNUAL EVALUATION 2024-25

E 906-Ch

Std: IX

CHEMISTRY

Score : 40
Time : 1 ½Hours

Instructions

- First 15 minutes is given as cool offtime. This time is to be spent for reading and understanding the questions.
- Answer the questions according to the directions.
- Score and time are to be considered while answering.

Answer any 4 questions from 1 to 5. Each carries 1 score. **(4 x 1 = 4)**

1. Which allotrope of carbon is known as bucky balls? (1)
2. Find the relation and fill up the following

   Soda water : solvent – water

   Atmospheric air : solvent - .....(a)..... (1)
3. Examine the following statement and correct the portion underlined, if necessary. (1)

   The catalyst used in the manufacture of sulphuric acid is MnO_2
4. The isotopes of hydrogen are protium, deuterium and tritium. Identify the isotope whose oxide is heavy water. (1)
5. Which is the main component of CNG and LNG? (1)

Answer any 4 questions from 6 to 10. Each carries 2 scores. **(4 x 2 = 8)**

6. Write any two merits of using organic fertilizers. (2)
7. 96g of potassium nitrate is dissolved in 200g water at 30°C.

   [Hint: This is the maximum amount of potassium nitrate that can be dissolved in water at this temperature]

   a) What is meant by solubility? (1)

   b) What is the solubility of potassium nitrate in water at 30°C? (1)
8. Coal is formed as a result of the carbonisation of plant remains that lie buried in the soil for years.

   a) What is meant by carbonisation? (1)

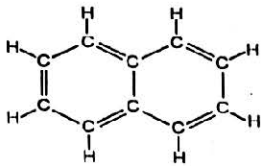
   b) Which form of coal has the highest carbon content? (1)

   [Peat, Bituminous coal, Anthracite, Lignite]
9. Hydrogen was discovered by Henry Cavendish, a British scientist.

   a) In the preparation of hydrogen in the laboratory, the reactants used are zinc and ---------- (1)

   b) Balloons filled with hydrogen rise up in the air. Give reason. (1)

10. The structure of an aromatic hydrocarbon is given.



a) What is the name of this compound? (1)

b) Write its molecular formula. (1)

Answer any 4 questions from 11 to 15. Each carries 3 scores. (4 x 3 = 12)

11. Substances can be mixed together to prepare mixtures.

a) Which of the following are examples of suspension? (1)

[Milk, Sugar solution, Chalk powder + water, Muddy water]

b) Write any two characteristics of suspension. (2)

12. An acid and an alkali undergo neutralisation reaction to form salt and water.

a) Represent the positive ion in magnesium hydroxide ($Mg(OH)_2$) using symbols. (1)

b) Represent the negative ion in hydrochloric acid [HCl] using symbol. What is the basicity of HCl? (1)

c) Write the chemical formula of the salt formed by the reaction between magnesium hydroxide and hydrochloric acid. (1)

13. The ozone layer depletion is harmful to living things and environment. Chlorofluorocarbons cause the depletion of ozone layer.

a) How does the excess use of chlorofluorocarbons result in the depletion of ozone layer? (2)

b) Choose the suitable statements related to ozone from the following. (1)

i) Ozone is a diatomic molecule.

ii) Ozone is found more commonly in the stratosphere.

iii) This is a green house gas.

14. C_2H_2, A, C_4H_6, ... belong to the same homologous series.

a) Write the molecular formula of the compound A. (1)

b) Write its structural formula. (1)

c) To which homologous series do these compounds belong? (1)

15. Chlorine is a gas used for bleaching purposes. Bleaching action of chlorine takesplace in the presence of moisture.

a) Which is the unstable compound formed by the reaction of chlorine with moisture? (1)

b) Which are the products formed by the decomposition of this unstable compound? (1)

c) How is bleaching powder prepared? (1)

Answer any 4 questions from 16 to 20. Each carries 4 scores. **(4 x 4 = 16)**

16. Take 10mL of concentrated hydrochloric acid in one test tube and 10mL of dilute hydrochloric acid in another test tube. Put 2g magnesium each in both test tubes.

    a) In which test tube the reaction takes place faster? (1)

    b) Identify the factor which influenced the rate of reaction in this case. (1)

    c) How does this factor influence the rate of reaction? (1)

    d) Write the balanced chemical equation of the reaction between magnesium and hydrochloric acid. (1)

17. The atoms of the elements X and Y have 3 shells each. (Symbols are not real). X and Y belong to group 2 and group 15 respectively.

    a) Write the electron configuration of element X. (1)

    b) To which family does the element Y belong? (1)

    c) Which of these elements has bigger atoms? (1)

    d) Write the electron configuration of the noble gas present in the same period as that of X and Y. (1)

18. Carbon monoxide and carbon dioxide are two compounds formed by the combination of carbon and oxygen.

    a) Write the balanced chemical equation of the formation of carbon monoxide. (1)

    b) Which of these gases turns clear lime water milky? (1)

    c) Write the components of water gas and producer gas? (2)

19. Sulphur dioxide (SO_2) reacts with oxygen to form sulphur trioxide(SO_3).

    a) Write the balanced chemical equation of this reaction. (1)

    b) Calculate the mass of sulphur trioxide formed when 128 g Sulphur dioxide reacts with 32 g oxygen. (1)

    c) Find the oxidation number of sulphur in the following compounds. (2)

    i) SO_2 ii) SO_3

    [Hint: Oxidation number O = -2]

20. The IUPAC name of an organic compound is cyclopentane.

    a) Draw the structure of this compound. (1)

    b) Write its molecular formula. (1)

    c) Write any one structural formula and IUPAC name of the open chain hydrocarbon having the same molecular formula. (2)