

Instructions

- * First 15 minutes is cool of time.
- * This time is to be spent for reading and understanding 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 (1 Score each)

1. Atomic number means the number ofin an atom
2. Which allotrope of carbon is used as a solid lubricant?
3. Which among the following substances is used for bleaching?
(Oxygen, Hydrogen, Chlorine, Nitrogen)
4. The catalyst used in industrial production of Sulphuric acid is.....
5. Which is the Cation present in $MgCl_2$ solution ?

Answer any 4 questions from 6 to 10 (2 Scores each)

6. A neutralisation reaction is given



- a) Which among the above substances has the lowest p^H value? (1)
- b) What is the p^H value of NaCl solution? (1)

7. A few facts regarding a gas is given

- i) It is a poisonous gas
- ii) It is formed by the incomplete burning of fuels.
 - a) Which is this gas? (1)
 - b) What is the name of the mixture of this gas and Nitrogen? (1)

8. Equation showing the reaction between Zinc and Hydrochloric acid is given



- a) What is the oxidation state (x) of Zinc in $ZnCl_2$? (1)
- b) Which is the oxidizing agent in this reaction? (1)

9. Analyse the symbol of the element given. (Symbol is not real)



- a) Write down its electronic configuration? (1)
- b) How many neutrons are present in this atom? (1)

10. Choose the statements suitable to CO_2 from those given below. (2)
- i) Used for making soft drinks.
 - ii) Used as a reducing agent in metallurgy
 - iii) Causes formation of Carboxy hemoglobin.
 - iv) Used for making dry ice.

Answer any 4 questions from 11 to 15 (3 Scores each)

11. Molecular formulae of some compounds are given.

P) C_3H_8 Q) C_3H_4 R) C_3H_6 S) $\text{C}_3\text{H}_8\text{O}$

- a) Which among the above is an alkane? (1)
- b) Write the general formula of the category of hydrocarbons to which Q belongs? (1)
- c) Write down the formula of the next homologue of R? (1)

12. Hydrogen is an important fuel of future.

- a) What are the chemicals used to prepare Hydrogen in the laboratory? (1)
- b) Write any one advantage of Hydrogen as a fuel? (1)
- c) Which chemical compound is known as heavy water? (1)

13. Which property of sulphuric acid is exhibited in each of the reactions given below.

- a) A few drops of Con. H_2SO_4 is added to sugar. (1)
- b) Cu is heated with Con. H_2SO_4 . (1)
- c) Chlorine gas is collected in the laboratory by passing through Conc. H_2SO_4 . (1)

14. White curdy precipitate is formed when Silver nitrate is added to a salt solution.

- a) Which salt can be identified by using this experiment? (1)
- b) Which is the precipitate formed? (1)
- c) What will happen if a few drops of Ammonium hydroxide solution are added to this precipitate? (1)

15. Electronic configurations of elements P, Q and R are given

P - 2, 1

Q - 2, 8, 2

R - 2, 8, 6

- a) Which of the above elements belong to the same period? (1)
- b) Which among the elements has the highest electronegativity? (1)
- c) Write down the chemical formula of the compound formed by P and R. (1)

Answer 4 questions from 16 to 20 (4 Scores each)

16. A few hints regarding a hydrocarbon are given.

- i) Has 3 Carbon atoms
- ii) A triple bond is present between two carbon atoms
 - a) To which category does this compound belong? (1)
 - b) Write down the molecular formula of the compound (1)
 - c) Represent the structure of the compound. (1)
 - d) Write down the IUPAC name of the compound. (1)

17. a) What are the chemicals used to prepare Nitric acid in laboratory? (1)
- b) Name the process used for the industrial production of Nitric acid. (1)
- c) Which is the gas formed by the reaction between Zinc and Concentrated Nitric acid? (1)
- d) Pure Nitric acid is colourless. But the Nitric acid used in laboratories often has a pale yellow colour. Give reason? (1)

18. a) What is the minimum number of Carbon atoms required to form a cyclic compound? (1)
- b) Represent the structure of the cyclic compound with molecular formula of C_4H_8 . (1)
- c) Represent the structure and IUPAC name of an unsaturated hydrocarbon having the same molecular formula (C_4H_8). (1)

19. White thick fumes are formed when a glass rod dipped in ammonia solution is shown into a jar containing a gas.

- a) Which is the gas contained in the jar? (1)
- b) Which is the product formed? (1)
- c) What are the chemicals needed for the laboratory preparation of the gas.? (1)
- d) Write down the name for the water solution of this gas. (1)

20. Sodium carbonate and Sodium bicarbonate are two salts used in daily life.

- a) Write down the chemical formula of sodium bicarbonate? (1)
- b) Write down any one use of Sodium carbonate. (1)
- c) Which is the gas formed by the reaction of carbonates with acids? (1)
- d) Write down any one consequence of the increase in the concentration of this gas in the atmosphere? (1)