

BHARATH COACHING CENTRE

10th CBSE

Science

Total: 60

Chemistry

Time: 2.00 hrs

SECTION – A

8 x 1 = 8

1. Draw the electron dot structure for an alkane having molecular formula C_6H_{14} .
2. Draw the electron dot structure of nitrogen molecule.
3. Draw the structure of ethene molecule C_2H_4 .
4. Give any two tests to identify whether a compound with formula $C_2H_4O_2$ is an acid.
5. Name the process used for preparation of soap. Write the chemical equation involved in this process.
6. Atomic radius of hydrogen is 37 pm. Express it in meters.
7. Why are isotopes of an element having different atomic masses placed at the same position in the periodic table?
8. Why do all the elements of the same period have different properties?

SECTION – B

6 X 2 = 12

9. Draw the structure of: (i) Ethanoic acid (ii) Propanal (iii) Propene (iv) Chloropropane
10. Write a chemical equation to represent the following: (i) Combustion of alcohol (ii) Dehydration of alcohol.
11. Write chemical test to distinguish between ethanol and ethanoic acid.
12. Elements in periodic table show periodicity of properties. List any four such properties.
13. An element X belongs to 13th group of the Periodic table. Find its valency. What will be the formula of its sulphate?
14. Account for the following: (i) Noble gases are placed in a separate group. (ii) All the elements of the same group have similar chemical properties.

SECTION – C

5 X 3 = 15

15. Define isomers. Write two isomers of butane with their structural formula.
16. What happens when: (i) ethanol burnt in air (ii) it is oxidized? Write the corresponding reaction equations.
17. Name the product formed when an organic acid and alcohol react in the presence of acid catalyst. Write the equation and give two uses of the product formed.
18. Atoms of seven elements A, B, C, D, E, F and G have a different number of electronic shells but have the same number of electrons in their outermost shells. How will the following property vary as we move from A to G? (i) Metallic character (ii) Atomic radii (iii) Valency
19. State modern periodic law. List the characteristics that are determined by knowing the position of an element in the periodic table.

SECTION – D

6 X 5 = 25

20. a. Why does carbon form the largest number of compounds? Give two reasons.

- b. Why are some of these called saturated and the other unsaturated compounds?
- c. Which of these two is more reactive and why?
- d. Draw the structures of the following compounds: (i) Bromopentane (ii) Hexanal
21. a. Explain the given reaction with examples: (i) Addition reaction (ii) Oxidation reaction (iii) Substitution reaction.
- b. State the common name of addition reaction used in vegetable oil industry.
22. a. Write chemical equation of the reaction of ethanoic acid with (i) sodium (ii) sodium carbonate (iii) ethanol in the presence of conc. H_2SO_4 .
- b. State the role of concentrated sulphuric acid in the esterification reaction.
- c. Write one use of ethanoic acid.
23. Compare the elements of 1st group with elements of 17th group in the modern periodic table.
24. a. Why did Mendeleev have gaps in his periodic table?
- b. State any three limitations of Mendeleev's classification.
- c. How does electronic configuration of atoms change in a period with increase in atomic number?