

Reason: Hydrocarbons consist of covalent bonds.

- i) A and R are correct, R explains the A.
- ii) A is correct, R is wrong.
- iii) A is wrong, R is correct.
- iv) A and R are correct, R doesn't explain A.

20. Match the following

Functional group -OH	-	Benzene
Heterocyclic	-	Potassium stearate
Unsaturated	-	Alcohol
Soap	-	Furan
	-	Ethene

21. Name the acid that renders aluminium passive. Why?
22. Calculate the pH of 1×10^{-9} molar solution of NaOH.

PART-III

Answer any seven questions. Questions No.32 is compulsory.

(7 × 4=28)

23. Give the salient features of "Modern atomic theory".
24. The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with con. H₂SO₄ forms C and D along with water. D is a gaseous compound. Find A,B,C and D.
25. Name the acid that renders aluminium passive. Why?
26. Write notes on various factors affecting solubility.
27. Classify the following substances into deliquescent, hygroscopic.
(Conc. Sulphuric acid, Copper sulphate penta hydrate, Silica gel, Calcium chloride, and Gypsum salt)
28. Differentiate reversible and irreversible reactions
29. a) Explain the types of double displacement reactions with examples.
b) Can a nickel spatula be used to stir copper sulphate solution? Justify your answer.
30. Classify the following compounds based on the pattern of carbon chain and give their structural formula: (i) Propane (ii) Benzene (iii) Cyclobutane (iv) Furan
31. Differentiate soaps and detergents.
32. Calculate the % of each element in calcium carbonate (Atomic mass: C-12, O-16, Ca -40)

PART-IV

Answer all the questions

(3 × 7=21)

- 33.a) Derive the relationship between Relative molecular mass and Vapour density **(OR)**
b) Explain smelting process.
34.a) What happens when MgSO₄ · 7H₂O is heated? Write the appropriate equation **(OR)**
b) How does pH play an important role in everyday life?
35.a) How is ethanol manufactured from sugarcane? **(OR)**
b) An organic compound 'A' is widely used as a preservative and has the molecular formula CH₄O₂. This compound reacts with ethanol to form a sweet smelling compound 'B'.
(i) Identify the compound 'A'.
(ii) Write the chemical equation for its reaction with ethanol to form compound 'B'.
(iii) Name the process