

Time : 2 Hrs

M. M. 50

General Instructions : Read the following instructions very carefully and strictly follow them :

- I) This question paper comprises four Sections - A, B, C and D. There are 30 questions in the question paper. All questions are compulsory.
- II) Section A - Questions no. 1 to 20 are very short answer type questions, carry 1 mark each.
- III) Section B - Questions no. 21 to 24 are short answer type questions, carry 2 marks each.
- IV) Section C - Questions no. 25 to 28 are long answer type - I questions, carry 3 marks each.
- V) Section D - Questions no. 29 and 30 are long answer type -II questions, carry 5 marks each.

SECTION - A

Read the given passage and answer the questions no. 1 to 5 that follow :

The halogen derivatives of hydrocarbons constitute an important class of organic compounds and find several applications in laboratory and in industry. They are the starting materials for a large number of organic compounds which find a variety of applications in our daily life as well as in industry and medicine. Some of them act as good solvents also.

1. Why is dichloromethane used as extraction solvent in food and pharmaceutical industries?
2. Which haloalkane is generally used for the preservation of anatomical specimens ?
3. Name the haloalkane used for the preparation of barbiturate drugs .
4. Which alkyl halide is used as the starting material for the preparation of silicone polymers ?
5. How is methyl cellulose prepared and why is it used for the treatment of constipation ?

Questions no. 6 to 10 are one word answers :

6. Write structures of different dihalogen derivatives of propane.
7. Which out of benzene and chlorobenzene undergoes electrophilic substitution more readily?
8. What is meant by specific rotation ?
9. Why the boiling point of ethyl bromide is higher than that of ethyl chloride ?
10. What is meant by racemic mixture?

Questions no. 11 to 15 are multiple choice questions :

11. Methyl bromide is converted into ethane by heating it in ether medium with
a) Al b) Zn c) Na. d) Cu.
12. The product of reaction of HBr with propene is
a) 1- bromopropane b) 2- bromopropane c) 3 - bromopropane d) no reaction occurs
13. Which of the following is liquid at room temperature?
14. The organic halogen compound used as refrigerent in refrigerators and air conditioners is.
a) DDT. b) Freon c) BHC d) BFC
15. How many chiral stereoisomers can be drawn for 2- bromo - 3- chlorobutane?
a) 2. b) 3. c) 4. d) 5.

For questions no. 16 to 20 ,two statements are given - one labelled Assertion (A) and the other labelled Reason (R) .

Select the correct answer to these questions from the codes (a), (b) , (c) and (d) as given below :

(a) Both Assertion (A) and Reason (R) are correct statements, and Reason (R) is the correct explanation of the Assertion (A).

(b) Both Assertion (A) and Reason (R) are correct statement, but Reason (R) is not the correct explanation of the Assertion (A).

(c) Assertion (A) is correct, but Reason (R) is incorrect statement.

(d) Assertion (A) is incorrect, but Reason (R) is correct statement.

16. Assertion (A) : Alkyl halide are soluble in water .
halides form hydrogen bonds with water.

Reason (R) : Due to their polar nature, alkyl

17. Assertion (A) : Chloral reacts with phenyl chloride to form D.D.T.
substitution reaction.

Reason (R) : It is an electrophilic

18. Assertion (A) : C_2H_5MgBr is an organometallic compound.
carbon atom and Mg atom.

Reason (R) : There is a direct bond between

19. Assertion (A) : TEL is used as an antiknock compound .
presence of TEL.

Reason (R) : Petrol burns very rapidly in

20. Assertion (A) : Grignard reagents are generally used in the form of their solution in ether.
(R) : Grignard reagents are explosive in solid state.

Reason

SECTION - B

21. What happens when $\text{CH}_2=\text{CH}_2$ is treated with zinc and water ?
22. What are the IUPAC names of the insecticide DDT and benzene hexachloride ?
23. Allyl chloride is hydrolysed more readily than n-propyl chloride. Why?
24. Why is the solubility of haloalkanes in water very low ?

SECTION - C

25. Write the structures of the following is :
(a) 2-Chloro - 3-methyl pentane (b) 4-tert. - Butyl -3- iodoheptane.
26. Write structures of different dihalogen derivatives of propane.
27. How will you bring out the following conversions ?
(a) Ethanol to but -1- yne (b) Ethane to bromoethane.
28. Why iodoform has appreciable antiseptic property ?
29. Write short notes on : (a) Markownikoff 's rule (b) Finkelstein reaction.
30. Write any five general methods of preparation of haloalkanes .