

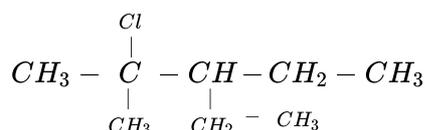
HALOALKANES AND HALOARENES

Class 12 - Chemistry

Time Allowed: 1 hour and 29 minutes

Maximum Marks: 45

1. Give IUPAC names of: [1]



2. Write the structure of 1-bromo-4-chlorobut-2-ene. [1]

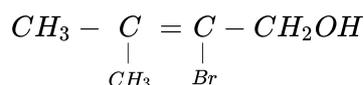
3. What happens when ethyl chloride is treated with aqueous KOH? [1]

4. What is meant by plane-polarised light? [1]

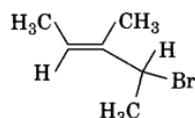
5. Draw the structure of 2-(2-bromophenyl) butane. [1]

6. A hydrocarbon C_5H_{12} gives only one monochlorination product. Identify the hydrocarbon. [1]

7. Give the IUPAC name of the following compound: [1]

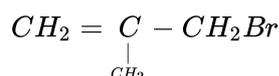


8. Give the IUPAC name of the following compound: [1]

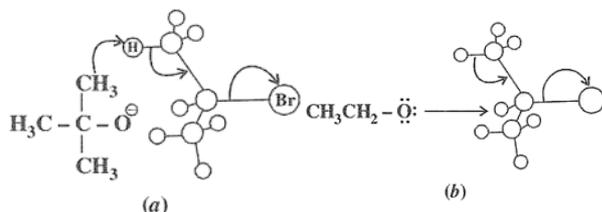


9. Write a chemical reaction in which the iodide ion replaces the diazonium group in a diazonium salt. [1]

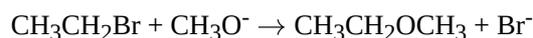
10. Give the IUPAC name of the following compound: [1]



11. One of the two figures given below represents substitution and the other represents elimination. Indicate which is substitution and which is elimination. [3]



12. Propose the mechanism of the following reaction: [3]



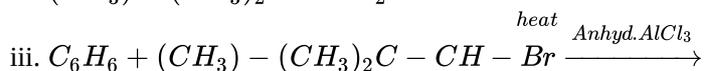
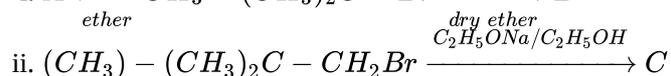
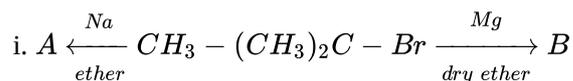
13. Arrange the compounds of each set in order of reactivity towards S_N2 displacement: [3]

- 2-bromo-2-methyl butane, 1-bromopentane, 2-bromopentane.
- 1-bromo-3-methylbutane, 2-bromo-2-methylbutane, 3-bromo-2-methylbutane.
- 1-bromobutane, 1-bromo-2, 2-dimethylpropane, 1-bromo-2-methylbutane, 1-bromo-3-methylbutane.

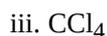
14. Predict the order of reactivity of the following compounds in S_N1 and S_N2 reactions: [3]

- i. The four isomeric bromobutanes
 ii. $C_6H_5CH_2Br$, $C_6H_5CH(C_6H_5)Br$, $C_6H_5CH(CH_3)Br$, $C_6H_5C(CH_3)(C_6H_5)Br$

15. Complete the following giving the structures of major organic products. [3]

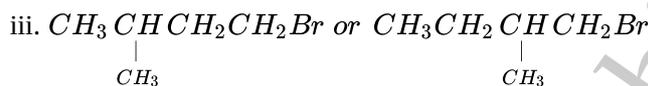
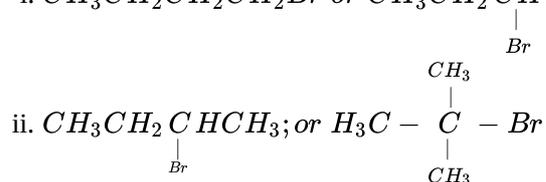


16. Which one of the following has the highest dipole moment? [5]



17. Which alkyl halide from the following pairs would you expect to react more rapidly by an S_N2 mechanism? [5]

Explain your answer.



18. Write structures of different dihalogen derivatives of propane. [5]

19. Primary alkyl halide C_4H_9Br (a) reacted with alcoholic KOH to give compound (b). Compound (b) is reacted with HBr to give (c) which is an isomer of (a). When (a) is reacted with sodium metal it gives compound (d), C_8H_{18} which is different from the compound formed when n-butyl bromide is reacted with sodium. Give the structural formula of (a) and write the equations for all the reactions. [5]

Scan for Key

