1. The order of reactivity of following alcohols with halogen acids is \_\_\_\_\_\_\_\_\_\_\_.

2. Which of the following alcohols will yield the corresponding alkyl chloride on reaction with concentrated HCl at room temperature?

3. Identify the compound Y in the following reaction.

4. Toluene reacts with a halogen in the presence of iron (III) chloride giving ortho and para halo compounds. The reaction is
	* (i) Electrophilic elimination reaction
	* (ii) Electrophilic substitution reaction
	* (iii) Free radical addition reaction
	* (iv) Nucleophilic substitution reaction
5. Which of the following is halogen exchange reaction?

6. Which reagent will you use for the following reaction ?

	* (i) Cl2/UV light
	* (ii) NaCl + H2SO4
	* (iii) Cl2 gas in dark
	* (iv) Cl2 gas in the presence of iron in dark
7. Arrange the following compounds in the increasing order of their densities.

8. Arrange the following compounds in increasing order of their boiling points

9. In which of the following molecules carbon atom marked with asterisk (\*) is asymmetric?

	* (i) (a), (b), (c), (d)
	* (ii) (a), (b), (c)
	* (iii) (b), (c), (d)
	* (iv) (a), (c), (d)
10. Which of the following structures is enantiomeric with the molecule (A) given below :


11. Which of the following is an example of vic-dihalide?
	* (i) Dichloromethane
	* (ii) 1,2-dichloroethane
	* (iii) Ethylidene chloride
	* (iv) Allyl chloride
12. The position of –Br in the compound in CH3CH == CHC (Br)(CH3)2 can be classified as \_\_\_\_\_\_\_\_\_\_\_\_.
	* (i) Allyl
	* (ii) Aryl
	* (iii) Vinyl
	* (iv) Secondary
13. Chlorobenzene is formed by reaction of chlorine with benzene in the presence of AlCl3. Which of the following species attacks the benzene ring in this reaction ?
	* (i) Cl–
	* (ii) Cl+
	* (iii) AlCl3
	* (iv) [AlCl4]–
14. Ethylidene chloride is a/an \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	* (i) vic-dihalide
	* (ii) gem-dihalide
	* (iii) allylic halide
	* (iv) vinylic halide
15. What is ‘A’ in the following reaction?


16. A primary alkyl halide would prefer to undergo \_\_\_\_\_\_\_\_\_\_\_\_\_.
	* (i) SN1 reaction
	* (ii) SN2 reaction
	* (iii) α–Elimination
	* (iv) Racemisation
17. Which of the following alkyl halides will undergo SN1 reaction most readily?
	* (i) (CH3)3C—F
	* (ii) (CH3)3C—Cl
	* (iii) (CH3)3C—Br
	* (iv) (CH3)3C—I
18. 
	* (i) 1-Bromo-2-ethylpropane
	* (ii) 1-Bromo-2-ethyl-2-methyl ethane
	* (iii) 1-Bromo-2-methylbutane
	* (iv) 2-Methyl-1-bromobutane
19. What should be the correct IUPAC name for diethyl bromomethane?
	* (i) 1-Bromo-1,1-diethoxyethane
	* (ii) 3-Bromopentane
	* (iii) 1-Bromo-1-ethyl propane
	* (iv) 1-Bromopentane
20. The reaction of toluene with chlorine in the presence of iron and in the absence of light yields \_\_\_\_\_\_\_\_\_\_\_\_.

21. Chloromethane on treatment with excess of ammonia yields mainly

22. Molecules whose mirror image is non superimposable over them are known as chiral. Which of the following molecules is chiral in nature?
	* (i) 2-Bromobutane
	* (ii) 1-Bromobutane
	* (iii) 2-Bromopropane
	* (iv) 2-Bromopropan-2-ol
23. Reaction of C6H5CH2Br with aqueous sodium hydroxide follows \_\_\_\_\_\_\_\_\_\_\_\_.
	* (i) SN1 mechanism
	* (ii) SN2 mechanism
	* (iii) Any of the above two depending upon the temperature of reaction
	* (iv) Saytzeff rule
24. Which of the carbon atoms present in the molecule given below are asymmetric

	* (i) a, b, c, d
	* (ii) b, c
	* (iii) a, d
	* (iv) a, b, c
25. Which of the following compounds will give racemic mixture on nucleophilic substitution by OH– ion?
	* (i) (a)
	* (ii) (a), (b), (c)
	* (iii) (b), (c)
	* (iv) (a), (c)

**Note : In the questions 26 to 29 arrange the compounds in increasing order of rate of reaction towards nucleophilic substitution**

1. 
	* (i) (a) < (b) < (c)
	* (ii) (c) < (b) < (a)
	* (iii) (a) < (c) < (b)
	* (iv) (c) < (a) < (b)
2. 
	* (i) (a) < (b) < (c)
	* (ii) (c) < (b) < (a)
	* (iii) (a) < (c) < (b)
	* (iv) (c) < (a) < (b)
3. 
	* (i) (a) < (b) < (c)
	* (ii) (a) < (c) < (b)
	* (iii) (c) < (b) < (a)
	* (iv) (b) < (c) < (a)
4. 
	* (i) (c) < (b) < (a)
	* (ii) (b) < (c) < (a)
	* (iii) (a) < (c) < (b)
	* (iv) (a) < (b) < (c)
5. 
	* (i) (a) < (b) < (c)
	* (ii) (b) < (a) < (c)
	* (iii) (c) < (b) < (a)
	* (iv) (a) < (c) < (b)
6. Which is the correct increasing order of boiling points of the following compounds?
1-Iodobutane, 1-Bromobutane, 1-Chlorobutane, Butane
	* (i) Butane < 1-Chlorobutane < 1-Bromobutane < 1-Iodobutane
	* (ii) 1-Iodobutane < 1-Bromobutane < 1-Chlorobutane < Butane
	* (iii) Butane < 1-Iodobutane < 1-Bromobutane < 1-Chlorobutane
	* (iv) Butane < 1-Chlorobutane < 1-Iodobutane < 1-Bromobutane
7. Which is the correct increasing order of boiling points of the following compounds?
1-Bromoethane, 1-Bromopropane, 1-Bromobutane, Bromobenzene
	* (i) Bromobenzene < 1-Bromobutane < 1-Bromopropane < 1-Bromoethane
	* (ii) Bromobenzene < 1-Bromoethane < 1-Bromopropane < 1-Bromobutane
	* (iii) 1-Bromopropane < 1-Bromobutane < 1-Bromoethane < Bromobenzene
	* (iv) 1-Bromoethane < 1-Bromopropane < 1-Bromobutane < Bromobenzene

33. The correct order of increasing the reactivity of C—X bond towards nucleophile in following compounds



(a) IV < III < I < II
(c) I < II < IV < III
(b) III < II < I < IV
(d) II < III < I < IV