

PRAADIS EDUCATION
CHAPTER – 10
HALOALKANES AND HALOARENES
CHEMISTRY-XII

MULTIPLE CHOICE QUESTION (MCQs)

1). Identify the following compounds as primary halide:

- (i) 1-Bromobut-2-ene
- (ii) 4-Bromopent-2-ene
- (iii) 2-Bromo-2-methylpropane

Ans : (i) 1-Bromobut-2-ene (1° alkyl halide)

2). Which of the following compounds are gem-dihalides ?

- (a) Ethylidene chloride (b) Ethylene dichloride
- (c) Methyl chloride (d) Benzyl chloride

Ans : Option (a) is correct . In gem-dihalides both the halogens are attached to the same carbon atom.

3). Which is the correct IUPAC name for

- i) 1-Bromo-2-ethylpropane ii) 1-Bromo-2-ethyl-2-methylethane
- iii) 1-Bromo-2-methylbutane iv) 2-Methyl-1-bromobutane

Ans. iii) 1-Bromo-2-methylbutane

4). What should be the correct IUPAC name for diethylbromomethane?

- i) 1-Bromo-1,1-diethylmethane ii) 3-Bromopentane
- iii) 1-Bromo-1-ethylpropane iv) 1-Bromopentane

Ans. ii). 3-Bromopentane

5). Which of the following is /are secondary bromide?

- (i) $\text{CH}_3\text{CH}_2\text{Br}$

- (ii) $(\text{CH}_3)_3\text{CCH}_2\text{Br}$
(iii) $\text{CH}_3\text{CH}(\text{Br})\text{CH}_2\text{CH}_3$
(iv) $(\text{CH}_3)_2\text{CBrCH}_2\text{CH}_3$
Ans. (iii) $\text{CH}_3\text{CH}(\text{Br})\text{CH}_2\text{CH}_3$

6.) Pure chloroform is obtained by treating
(i) Ethanol with bleaching powder (ii) Acetone with bleaching powder
(iii) Chloral with Sodium hydroxide (iv) CCl_4 with moist Iron
Ans : (iii) Chloral with Sodium hydroxide

7.) 1,1-Dichloropropane on hydrolysis gives

- a) Propanone
b) Propanal
c) Ethanal
d) 1,1-Propanediol

Ans : b) Propanal

8.). Among the following , the molecule with the highest dipole moment is :

- a) CH_3Cl
b) CH_2Cl_2
c) CHCl_3
d) CCl_4

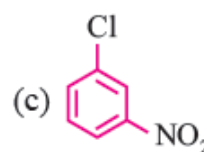
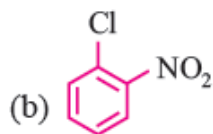
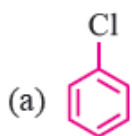
Ans : a) CH_3Cl

9.) Which of the following represents Freon?

- a) Ethylene dichloride
b) Ethylidene dichloride
c) Tetrafluoro ethylene
d) Dichlorodifluoromethane

Ans: d). Dichlorodifluoromethane

10.) 1. Arrange the following compounds in increasing order of rate of reaction towards nucleophilic substitution:



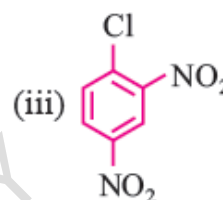
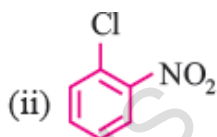
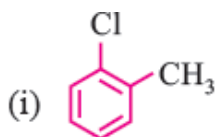
(a) $a < b < c$

(b) $a < b < a$

(c) $a < c < b$

(d) $c < a < b$

11.) Arrange the following compound in increasing order of rate of reaction towards nucleophilic substitution.



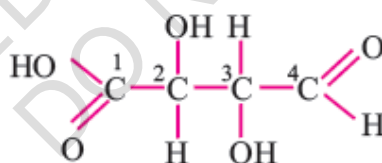
(a) $i < ii < iii$

(b) $i < iii < ii$

(c) $ii < i < iii$

(d) $iii < ii < i$

12.) Which of the carbon atom present in the molecule given below are asymmetric.



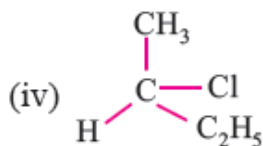
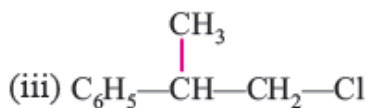
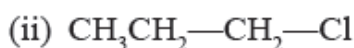
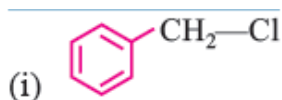
(a) 1, 2, 3, 4

(b) 2, 3

(c) 1, 4

(d) 1, 2, 3

13.) Which of the following compound will undergo racemisation when solution of KOH hydrolyses?



(a) i and iv

(b) ii and iv

(c) iii and iv

(d) iv

14. In a SN^1

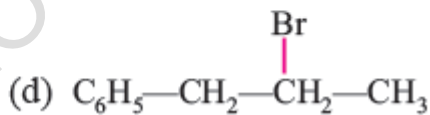
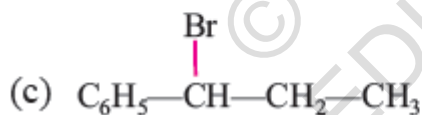
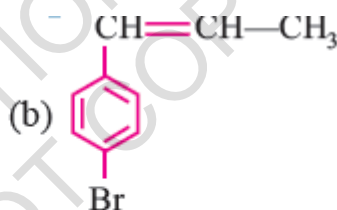
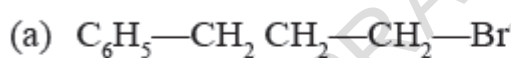
1 reaction on chiral centres, there is

(a) 100 % retention (b) 100 % inversion

(c) 100 % racemisation

(d) inversion is more than retention leading to racemisation

15.) The reaction of $\text{C}_6\text{H}_5\text{—CH=CH—CH}_3$ with HBr produces



16. In SN^2

reactions, the correct order of reactivity for the following compounds:

(i) CH_3Cl (ii) $(\text{CH}_3)_3\text{CCl}$

(iii) $(\text{CH}_3)_2\text{CHCl}$ (iv) $\text{CH}_3\text{CH}_2\text{—Cl}$

(a) $i > ii > iii > iv$ (b) $iv > iii > ii > i$

(c) $i > iv > iii > ii$ (d) $iv > i > ii > iii$

17.) **Good conductor of electricity and heat is**

(a) **Anthracite coke**

(b) **Diamond**

(c) **Graphite**

(d) **Charcoal**

18.) Bromination of methane in presence of sunlight is a

- (a) nucleophilic substitution
- (b) free radical substitution
- (c) electrophilic substitution
- (d) nucleophilic addition

19. Arrange the following compounds in increasing order of their boiling point

(i) $(\text{CH}_3)_2\text{CH}_2\text{CH}_2\text{—Br}$ (ii) $\text{CH}_3\text{—}(\text{CH}_2)_3\text{—Br}$ (iii) $(\text{CH}_3)_3\text{C—Br}$

- (a) $\text{ii} < \text{i} < \text{iii}$ (b) $\text{i} < \text{ii} < \text{iii}$
- (c) $\text{iii} < \text{i} < \text{ii}$ (d) $\text{iii} < \text{ii} < \text{i}$

20. Toluene reacts with halogen in the presence of FeCl_3 giving ortho and para compound. The reaction is

(a) electrophilic elimination reaction (b) electrophilic substitution

(c) free radical addition reaction (d) nucleophilic substitution

21. The order of reactivity of following alcohols with halogen acid (HX) is

(i) $\text{CH}_3\text{—CH}_2\text{—CH}_2\text{—OH}$

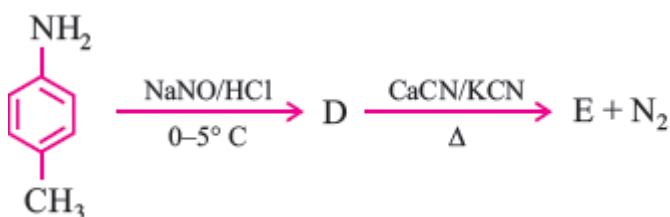
(ii) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}_3\text{—CH}_2\text{—CH—OH} \end{array}$

(iii) $\begin{array}{c} \text{CH}_3 \\ | \\ \text{C}_6\text{H}_5\text{—CH}_2\text{—CH}_2\text{—OH} \\ | \\ \text{CH}_3 \end{array}$

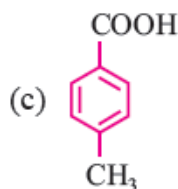
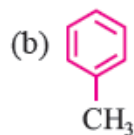
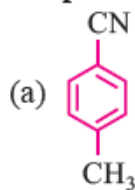
(a) $\text{i} > \text{ii} > \text{iii}$ (b) $\text{iii} > \text{ii} > \text{i}$

(c) $\text{ii} > \text{i} > \text{iii}$ (d) $\text{i} > \text{iii} > \text{ii}$

22. In the reaction



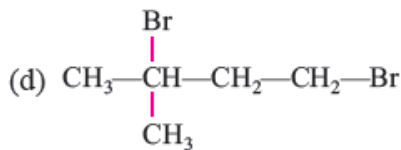
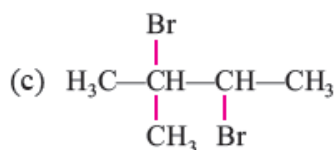
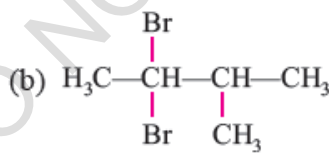
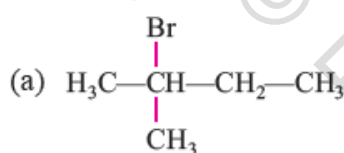
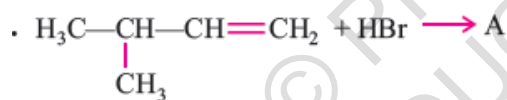
the product is:



23. 13. Chlorobenzene is formed by reaction of chlorine with benzene in presence of AlCl_3 . Which of the following species attacks the benzene ring in this reaction.

- (a) Cl^-
- (b) Cl^+
- (c) AlCl_3
- (d) AlCl_4^-

24.



25. The reaction of toluene with Cl_2 in the presence of FeCl_3 gives 'X' and the reaction with Cl_2 in presence of light gives 'Y'. Thus 'X' and 'Y' are:

- (a) 'X' = benzyl chloride and 'Y' = m-chlorotoluene
- (b) 'X' = benzyl chloride and 'Y' = o-chlorotoluene
- (c) 'X' = m-chlorotoluene and 'Y' = p-chlorotoluene
- (d) 'X' = p-chlorotoluene and 'Y' = benzyl chloride.

26. Anyl halides are less reactive toward nucleophilic substitution reaction than alkyl halides due to

- (a) the formation of stable carbonimion
- (b) resonance stabilization
- (c) longer carbon-halogen bond
- (d) sp² hybridised carbon attached to halogen

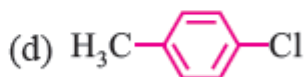
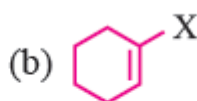
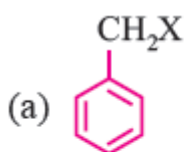
27. A new carbon carbon bond is possible in the following reaction reactions:

- (a) $C_6H_6 + CH_3Cl \xrightarrow{\text{anhy. AlCl}_3}$
- (b) $CH_3CH_2Br + CH_3CH_2NH_2 \longrightarrow$
- (c) $CH_3-Br + CH_3CH_2-ONa \longrightarrow$
- (d) $CH_3CH_2-Br + KCN(\text{alc}) \longrightarrow$

28. Which of the following state are correct

- (a) Benzyl halides are more reactive than vinyl and anyl halides
- (b) Vinyl/halides are more reactive than alkyl halides
- (c) Aryl halides are less reactive than alkylhalide
- (d) Aryl halides are more reactive than benzyl halides

29. . Which of the following contain sp² hybridised carbon bonded to X?



30. The IUPAC name of the following compound are



- (a) 1-chloro-4-methyl benzene
- (b) 4-chlorotoluene

(c) 1-methyl-4-chlorobenzene (d) 4-methylchlorobenzene

31. Which of the following are secondary bromides?

(a) $\text{CH}_3\text{CH}_2\text{Br}$ (b) $(\text{CH}_3)_3\text{CCH}_2\text{Br}$ (c) $\text{CH}_3\text{CH}(\text{Br})\text{CH}_2\text{CH}_3$
(d) $(\text{CH}_3)_2\text{CBr}$

32. IUPAC name of $(\text{CH}_3)_3\text{CCl}$

(a) 3-Chlorobutane (b) 2-Chloro-2-methylpropane
(c) *t*-butyl chloride (d) *n*-butyl chloride

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33. C – X bond is strongest in
(a) CH₃F (b) CH₃Cl (c) CH₃Br (d) CH₃I
34. The best method for the conversion of an alcohol into an alkyl chloride is by treating the alcohol with :
(a) PCl₅
(b) dry HCl in the presence of anhydrous ZnCl₂
(c) SOCl₂ in presence of pyridine
(d) None of these
35. A Grignard reagent may be made by reacting magnesium with
(a) CH₃COOH (b) CH₃ CH₃ (c) CH₃CH₂ I (d) CH₃CH₂OH
36. Reaction used to prepare alkyl iodide from alkyl bromide by using NaI in acetone is
(a) Williamson's reaction (b) Swart reaction
(c) Finkelstein reaction (d) Wurtz reaction
37. Which of the reaction given below is an example of Swart Reaction
a) C₂H₅Cl + KOH + H₂O → C₂H₅OH
b) C₂H₅Br + AgF → C₂H₅F
c) C₂H₅Br + Na (dry ether) → n- butane
d) CH₃CH=CH₂ + HBr → CH₃CH(Br)CH₃
38. A hydrocarbon that does not give only one monochloro product on photo chlorination is
(a) Propane (b) Ethane (c) Methane (d) Cyclopentane
39. Which of the following are secondary bromides?
(a) CH₃CH₂Br (b) (CH₃)₃CCH₂Br (c) CH₃CH(Br)CH₂CH₃
(d) (CH₃)₂CBr

40. IUPAC name of $(\text{CH}_3)_3\text{CCl}$

(a) 3-Chlorobutane (b) 2-Chloro-2-methylpropane

(c) *t*-butyl chloride (d) *n*-butyl chloride

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