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Daily Practice Problems

JEE CHEMISTRY

Topic: Alkyl Halide

1. Toluene when heated with Br_2/Fe, gives p – bromo toluene as the major product because the methyl group is

(A) p – directing
(B) m – directing
(C) stabilising group
(D) deactivating group

2. Aryl halides are less reactive towards SN reactions as compared to alkyl halide due to

(A) formation of more stable carbocation
B) resonance stabilization
(C) long carbon – halogen bond
(D) can not be predicted

3. $R—OH + HX \longrightarrow R—X + H_2O$

In the above reaction, the reactivity of different alcohol is

(A) $3^0 > 1^0 > 2^0$
(B) $3^0 > 2^0 > 1$
(C) $1^0 < 2^0 > 3^0$
(D) $2^0 < 1^0 < 3^0$

4. Which of the following does not occur during the formation of $CHCl_3$ from C_2H_5OH & $CaOCl_2$?

(A) hydrolysis
(B) oxidation
(C) reduction
(D) chlorination

5. SN^1 reaction of alkyl halides leads to

(A) retention of configuration
(B) inversion of configuration
(C) reacemisation
(D) none of the above

6. Of the following alkyl halides one with lowest boiling point is

(A) ethyl bromide (B) isopropyl bromide

(C) n – butyl bromide (D) methyl bromide

7. Amongst the following the most reactive alkyl halide is

(A) C_2H_5F (B) C_2H_5Cl

(C) C_2H_5Br (D) C_2H_5I

8. n – propyl bromide on treatment with ethanolic KOH produces

(A) propane (B) propene

(C) propyne (D) propanol

9. Iodoform test is given by

(A) all types of alcohols

(B) all types of ketones

(C) all types of aldehydes

(D) only methtyl ketones & those alcohols which contain CH_3CHOH group.

10. When chloroform reacts with acetone the product is

(A) ethylidenedichloride (B) mesitylene

(C) chloretone (D) chloral

11. Phenol gives Reimer tiemann reaction with

(A) $CHCl_3$ (B) CCl_4

(C) $CHCl_3$ & CCl_4 (D) C_6H_5CHCl

12. Which of the following is tertiary alkyl halide?

(A) 2 – chloro – 2 – methyl butane (B) 1 – chloro propane

(C) 2 – chloro propane (D) cyclohexyl chloride

13. Which of the following is least reactive for nucleophilic substitution?

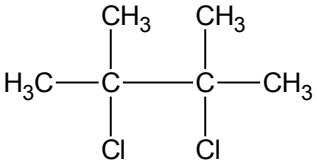
(A) $CH_3 — CH_2 — CH_2 — Br$

(B) $CH_2 = CH — Br$

(C) $C_6H_5 — CH_2 — Br$

(D) $C_6H_5 — Br$

14. Which one of following compounds on dehalogenation gives, 2, 3 – dimethyl – 2 – butene?

(A) 

(B) $CH_3 — (CH_2)_4 — CHCl_2$

(C) $CH_3 — CH_2 — CHCl_2$

(D) $CH_2Cl — (CH_2)_4 — CH_2Cl$

15. In the given reaction

$CHCl_3 \xrightarrow{Zn/HCl} [X]$, [X] will be

(A) CH_4

(B) CH_2Cl_2

(C) CCl_4

(D) CH_3Cl

16. Alkyl halide on heating with dry Ag_2O gives

(A) ester

(B) ether

(C) alcohol

(D) alkane

17. Alkyl halide is converted into alcohol by

(A) addition reaction

(B) substitution reaction

(C) dehydrogenation

(D) dehydrohalogenation

18. When an alkyl halide reacts with an alkoxide the product is

(A) alkene

(B) alkane

(C) ether

(D) mixture of alkene & ether

19. The conversion of 2, 3 – dibromobutane to 2-butene with Zn & C_2H_5OH is

(A) redox reaction

(B) α - elimination

(C) β - elimination

(D)both α - elimination and redox reaction

20. The order of reactivity of following alkyl halides for SN^1 reaction is

(A) RF > RCl > RBr > RI

(B) RF > RBr > RCl > RI

(C) RCl > RBr > RF > RI

(D) RI > RBr > RCl > RF

21. Identify 'Z' in following sequence of reactions

$$C_3H_7I \xrightarrow[(alc)]{KOH} X \xrightarrow[\Delta]{NBS,h\nu} Y \xrightarrow[(alc)]{KCN} Z$$

(A) $(CH_3)_2CH—CN$

(B) $Br—CH=CH—CN$

(C) $CH_2=CH—CH_2CN$

(D) $CH_2=CH—CHBr—CN$

22. The well known insecticide gammaxene is one of the stereoisomers of hexachlorocyclohexane. The reagent useful for conversion of benzene into hexachloro cyclo hexane is

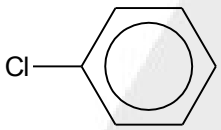
(A) HCl

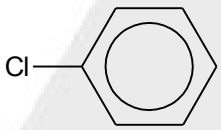
(B) $Cl_2(AlCl_3)$

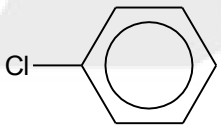
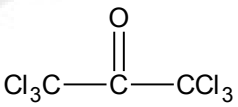
(C) $Cl_2(ZnCl_2)$

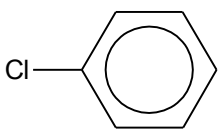
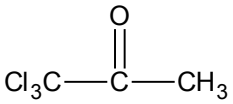
(D) $Cl_2(h\nu)$

23. Which of the following pair gives DDT when treated with conc. H_2SO_4?

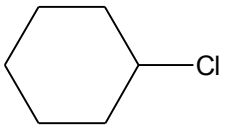
(A)  & CH_3CHO

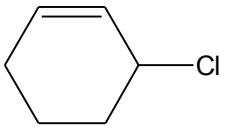
(B  & $Cl_3C—CHO$

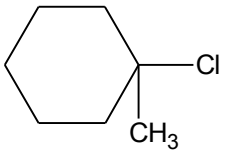
(C)  & 

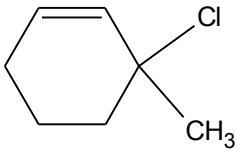
(D)  & 

24. Which of the following compounds will be most reactive for SN1 reactions?

(A) 

(B) 

(C) 

(D) 

25. In the reaction,

$C_2H_5OH \xrightarrow{[X]} C_2H_5Cl$, [X] will be

(A) NaCl

(B) $SOCl_2$

(C) Cl_2

(D) KCl

26. Iodoform test is not given by

(A) acetone

(B) ethyl alcohol

(C) 1 – propanol

(D) 2 – propanol

27. Which of the following will not form iodoform with I_2/OH^-?

(A) ethanol

(B) ethanal

(C) isopropyl alcohol

(D) benzyl alcohol

28. Compound [X] gives very unpleasant odour with $CHCl_3$/alc. KOH. [X] is

(A) $C_6H_5NHCH_3$

(B) C_6H_5— $CONH_2$

(C) $C_6H_5NH_2$

(D) C_6H_5—NH—C_2H_5

29. In chloroination of benzene with $Cl_2/FeCl_3$, the reactive species is

(A) $Cl^{\oplus}$

(B) $FeCl_4^{\oplus}$

(C) $Cl^{\ominus}$

(D) Cl_2

30. Which of the following compounds is used as tear gas?

(A) BHC

(B) DDT

(C) chloropicrine

(D) chloretone

ANSWER KEY

Que.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Ans.	C	B	B	C	C	D	D	B	D	C
Que.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Ans.	C	A	D	A	B	B	B	D	C	D
Que.	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Ans.	C	D	B	D	B	C	D	C	A	C