1.

When $CH_3CH_2CHCl_2$ is treated with $NaNH_2$, the product formed is

(a) CH_3-CH=CH_2 (b) CH_3-C≡CH

(c) $CH_3CH_2CH<^{NH_2}_{NH_2}$ (d) $CH_3CH_2C<^{Cl}_{NH_2}$

2.

R-CH_2-CCl_2-R $\xrightarrow{\text{Reagent}}$R-C≡C-R. The reagent is

(a) Na (b) HCl in H_2O

(c) KOH in C_2H_5OH (d) Zn in alcohol

3.

Ethyl chloride is converted into diethyl ether by

(a) Wurtz reaction (b) Grignard reaction

(c) Perkin's reaction (d) Williamson's synthesis

4.

The alkyl halide is converted into an alcohol by

(a) addition (b) substitution

(c) dehydrohalogenation (d) elimination

5.

Addition of Br_2 on cis-butene-2 gives:

(a) a racemic mixture of 2,3-dibromobutane

(b) meso form of 2,3-dibromobutane

(c) dextro form of 2,3-dibromobutane

(d) laevo form of 2,3-dibromobutane

6.

The number of different substitution products possible when ethane is allowed to react with bromine in sunlight are:

(a) 9 (b) 6

(c) 8 (d) 5

7.

In S_{N^2} reactions, the correct order of reactivity for the following compounds : CH_3Cl, CH_3CH_2Cl, $(CH_3)_2CHCl$ and $(CH_3)_3CCl$ is :

(a) CH_3Cl>$(CH_3)_2CHCl$>CH_3CH_2Cl>$(CH_3)_3CCl$

(b) CH_3Cl>CH_3CH_2Cl>$(CH_3)_2CHCl$>$(CH_3)_3CCl$

(c) CH_3CH_2Cl>CH_3Cl>$(CH_3)_2CHCl$>$(CH_3)_3CCl$

(d) $(CH_3)_2CHCl$>CH_3CH_2Cl>CH_3Cl>$(CH_3)_3CCl$

8.

Action of RMgX with vinyl chloride gives:

(a) alkane (b) alkyne

(c) alkene (d) all of these

9.

X $\xrightarrow{Cl_2}$ Benzotrichloride $\xrightarrow{\text{Hydrolysis}}$ Y

X and Y respectievely are:

(a) benzene, benzaldehyde

(b) toluene, benzaldehyde

(c) toluene, benzoic acid

(d) benzene, benzoic acid

10.

Benzene on reaction with a mixture of HNO_3 and H_2SO_4 followed by reaction of $Cl_2/FeCl_3$ gives:

(a) 3-chloro -1 -nitrobenzene

(b) 2-chloro -1 -nitrobenzene

(c) 4-chloro -1 -nitrobenzene

(d) a mixture of 2-chloro and 4-chloro -1 -nitrobenzene

11.

Which is gem dihalide?

(a) $CH_3.CHBr_2$ (b) $CH_2Br.CH_2Br$

(c) $CH_3.CHBr.CH_2Br$ (d) None of these

12.

Hydrogenation of benzoyl chloride in the presence of Pd on $BaSO_4$ gives:

(a) benzyl alcohol (b) benzaldehyde

(c) benzoic acid (d) phenol

13.

Friedel-Craft's reaction of bromobenzene with methyl iodide gives:

(a) o-bromotoluene

(b) p-bromotoluene

(c) o-and p-bromotoluenes

(d) m-bromotoluene

14.

When vinyl chloride is passed through alcoholic KOH solution:

(a) it dissolves

(b) it forms vinyl alcohol

(c) it forms acetylene

(d) it has no action

15.

The reaction, RCl +NaI $\xrightarrow{\text{Acetone}}$ $\mathrm{R-I}$ + NaCl is known as:

(a) Wurtz reaction (b) Fittig reaction

(c) Frankland's reaction (d) Finkelstein's reaction

16.

$(CH_3)_3CMgCl$ on reaction with D_2O gives:

(a) $(CH_3)_3CD$

(b) $(CH_3)_3OD$

(c) $(CD_3)_3CD$

(d) $(CD_3)_3OD$

17.

Benzoyl Chloride is prepared from benzonic acid by:

(a) Cl_2, hv

(b) SO_2Cl_2

(c) $SOCl_2$

(d) Cl_2, H_2O

18.

In the following sequences of reactions;

$\mathrm{CH_3\,CH_2\,CH_2\,Br} \xrightarrow{\mathrm{KOH(alc.)}} \mathrm{(A)} \xrightarrow{\mathrm{HBr}} \mathrm{(B)} \xrightarrow{\mathrm{KOH(aq)}} \mathrm{(C)}$

the product (C) is:

(a) propene

(b) propyne

(c) propan-1-ol

(d) propan-2-ol

19.

Iodoform can be prepared from all except :

(a) isopropyl alcohol

(b) 3-methyl-2-butanone

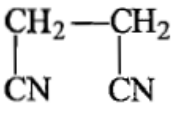
(c) isobutyl alcohol

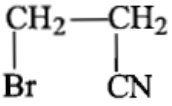
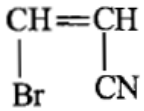
(d) ethyl methyl ketone

20.

Identify (Z) in the following reaction reaction series,

$C_2H_5I \xrightarrow[\text{KOH}]{\text{Alcoholic}} (X) \xrightarrow{Br_2} (Y) \xrightarrow{KCN} (Z)$:

(a) CH_3-CH_2-CN (b) 

(c)  (d) 

21.

The reaction of toluene with Cl_2 in presence of $FeCl_3$ gives predominantly :

(a) m- chlorobenzene

(b) benzoylchloride

(c) benzyl chloride

(d) O^- and p-chlorotoluene

22.

Arrange the following halides in the decreasing order of S_N1 reactivity

(I) $\mathrm{CH_3\,CH_2\,CH_2\,Cl}$

(II) $\mathrm{CH_2 = CHCH(Cl)\,CH_3}$

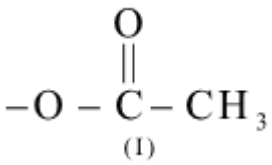
(III) $\mathrm{CH_3\,CH_2\,CH(Cl)\,CH_3}$

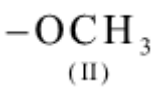
1. I>II>III 2. II>I>III

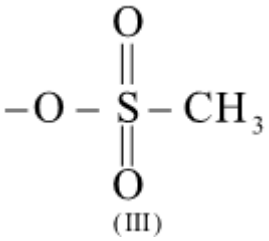
3. II>III>I 4. III>II>I

23.

Arrange the following compouds in the order of leaving group ability


(I)


(II)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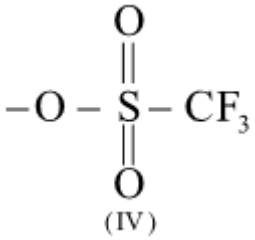
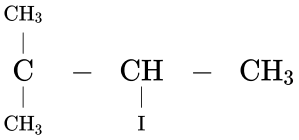
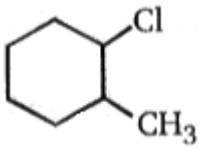

(IV)

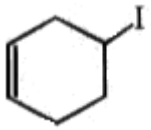
1. I > II > III > IV
2. IV > III > I > II
3. III > II > I > IV
4. II > III > IV > I

24.

Which of the following alkyl halide undergo rearrangement in SN1 reaction?

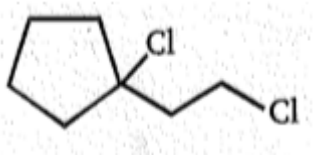
(a) 

(b) 

(c) 

(d) All of these

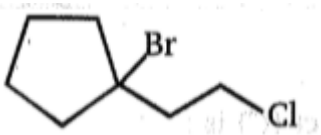
25.

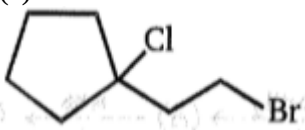


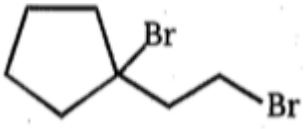
Major product (X)

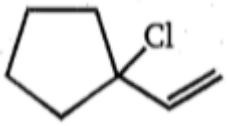
S_N2 conditions

The product X is :-

(a) 

(b) 

(c) 

(d) 

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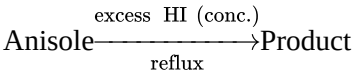
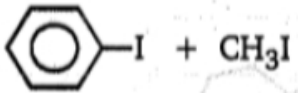
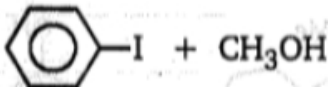


1. 
2. 
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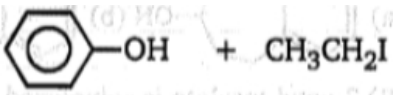
4. 

27.

$HC\equiv CNa + Cl\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}I \rightarrow (A)$; Major product (A) is:

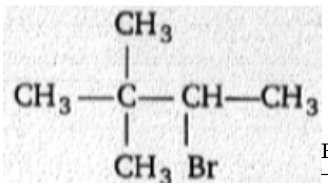
(a) $H\text{-}C\equiv C\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}I$

(b) $CH_2 = CH\text{-}CH_2\text{-}I$

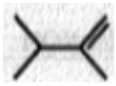
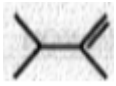
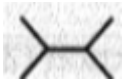
(c) $H\text{-}C \equiv C\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}Cl$

(d) $CH_2 = CH\text{-}CH_2\text{-}Cl$

28.



Major product (A) is:

1. 
2. 
3. 
4. 

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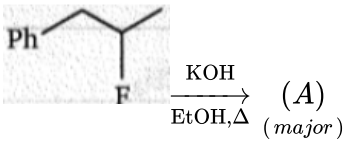
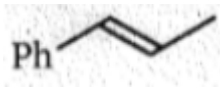
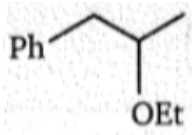
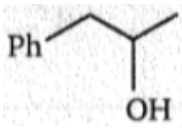
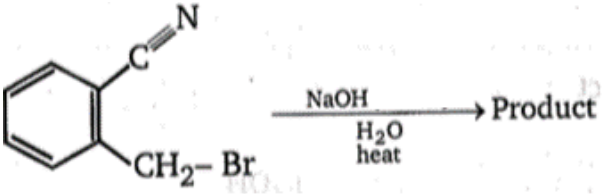


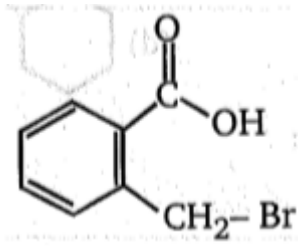
Product (A) is:

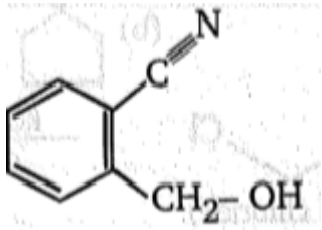
1. 
2. 
3. 
4. 

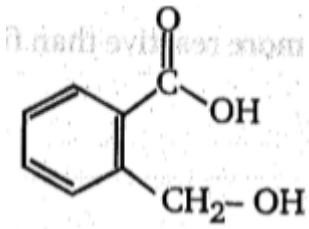
30.

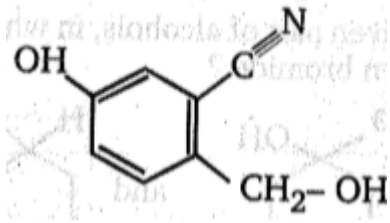
Which is the major product of the following reaction?



1. 

2. 

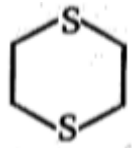
3. 

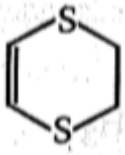
4. 

31.

1-2-dichloro ethane + $NaSCH_2CH_2SNa \rightarrow C_4H_8S_2$ + (P)

Unknown product (p) of the above reaction is:

(a) 

(b) 

(c) H-S-  -CH=CH-S-H

(d) H-  -CH-S-H

32.

Which alkyl halide has maximum density?

(a) C_3H_7I

(b) C_2H_5I

(c) CH_3I

(d) CH_3Br

33.

Grignard reagent shows addition on:

(a) >C=O (b) -C≡N

(c) >C=S (d) all of these

34.

Pick up the correct statement about alkyl halides:-

(a) They show H-bonding.
(b) They are soluble in water.
(c) They are soluble in organic solvents.
(d) They do not contain any polar bond.

35.

Sodium ethoxide reacts with ethyl iodide to yield:

(a) CH_3CH_3 (b) $C_2H_5OCH_3$

(c) $C_2H_5OC_2H_5$ (d) none of these

36.

Which set of reagents will produce freon (CCl_2F_2)?

(a) $C + F_2 + Cl_2 \rightarrow$

(b) $CH_3Cl + F_2 \rightarrow$

(c) $CCl_4 + HF \xrightarrow{SbCl_5}$

(d) $CCl_4 + F_2 \rightarrow$

37.

An alkyl iodide on standing darkens, due to:

(a) hydrolysis (b) conversion into ether

(c) liberation of iodine (d) formation of alkanes

38.

In the following sequences of reactions;

$CH_3CH_2CH_2I \rightarrow KOH(alc.)$
$(A) \rightarrow Br2(B) \rightarrow NaNH2/NH3(C)$ the end product (C) is:

(a) alkene

(b) alkanol

(c) alkyne

(d) alkyl amine

39.

PCI_5 reacts with propanone, to give:

(a) gem dichloride

(b) vic dichloride

(c) propanal

(d) propane chloride

40.

Identify (Z) in the following reaction series,

$C_2H_5I \xrightarrow[KOH]{Alcoholic} (x) \xrightarrow{Br_2} (Y) \xrightarrow{KCN} (Z)$:

(a) CH_3-CH_2-CN

(b) $CH_2(CN)-CH_2(CN)$

(c) $CH_2(Br)-CH_2(CN)$

(d) $CH(Br)=CH(CN)$

41.

Identity 'Z' in the following reaction series,

$CH_3.CH_2CH_2Br \rightarrow (X) \xrightarrow{aq.\ NaOH} (Y) \xrightarrow{Al2O3(Heat)} (z) \xrightarrow{HOCl}$

(a)Mixture of
CH_3-CH(Cl)-CH_2(Cl) and CH_3-CH(OH)-CH_2(Cl)

(b)CH_3-CH(OH)-CH_2(Cl)

(c)CH_3-CH(Cl)-CH_2(OH)

(d)CH_3-CH(Cl)-CH_2(Cl)

42.

A compound *A* of formula $C_3H_6Cl_2$ on reaction with alkali can give *B* of formula C_3H_6O or *C* of formula C_3H_4. *B* on oxidation gave a compound of the formula $C_3H_6O_2$. *C* with dilute H_2SO_4 containing Hg^{2+} ion gave *D* of formula C_3H_6O, which with bromine and NaOH gave the sodium salt of $C_2H_4O_2$. Then *A* is:

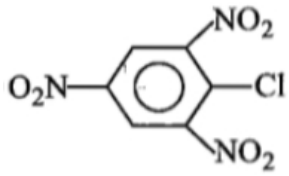
(a) $CH_3CH_2CHCl_2$
(b) $CH_3CCl_2CH_3$

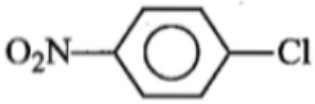
(d) $CH_3CHClCH_2Cl$

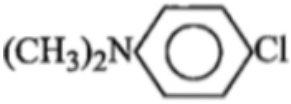
(c) $CH_2ClCH_2CH_2Cl$

43.

Which chloro derivative of benzene among the following would undergo hydrolysis most readily with aqueous NaOH to furnish the corresponding hydroxy derivative?

1. 

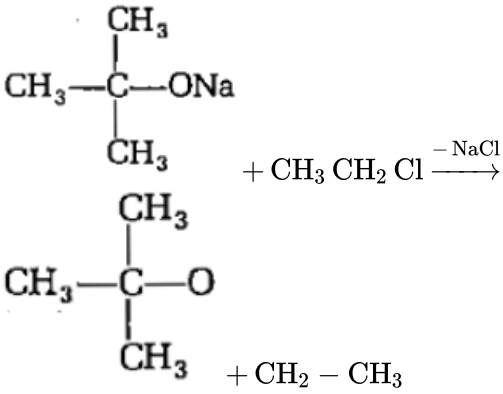
2. 

3. 

4. C_6H_5 Cl

44.

The reaction,



is called

(a) Williamson synthesis

(b) Willamson continuous etherification process

(c) Etard reaction

(d) Gattermann-Koch reaction

45.

Which one is the most reactive toward S_N1 reaction?

(a) $C_6H_5CH(C_6H_5)Br$

(b) $C_6H_5CH(CH_3)Br$

(c) $C_6H_5C(CH_3)(C_6H_5)Br$

(d) $C_6H_5CH_2Br$

Fill OMR Sheet