ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

WORKSHEET-03(SOLUTION)

TOPIC- ALKYL AND ARYL HALIDE

SUBTOPIC-CHEMICAL REACTIONS OF ALKYL AND ARYL HALIDE

SUBJECT – CHEMISTRY **F.M. - 15**

DURATION – 30 mins **DATE -05.05.20**

1.1 Which of the following statements about a S_N1 mechanism is true?

a) The reaction is the fastest with 3^O halides b) the rate of reaction changes when the solvent is changed from acetone to ethanol c) The identity of the leaving group does not affect the reaction rate

d) Both a and b

Ans. **d) Both a and b**

1.2 Which of the following undergoes E1 reaction most readily?

a) 1-chloropentane b) 2-chloropentane c) 2-chloro-2-methyl butane d) 2,2-dimethyl 1-chloropropane

Ans. **d) 2,2-dimethyl 1-chloropropane**

1.3 Which of the following compounds is most rapidly hydrolyzed by S_N1 mechanism?

a) C_6H_5Cl b) $CH_2=CH-CH_2Cl$ c) $(C_6H_5)_3CCl$ d) $C_6H_5CH_2Cl$

Ans. **c) $(C_6H_5)_3CCl$**

1.4 Grignard reagent when exposed to moisture-

a) Gets oxidized b) gets hydrolyzed c) gets decomposed to give hydrocarbon d) remains unaffected

Ans. **c) gets decomposed to give hydrocarbon**

1.5 Which of the following compound gives positive iodoform test-

a) Formaldehyde b) Methanol c) Pentanone d) Acetone

Ans. **d) Acetone**

1.6 Which of the following alkyl halides mentioned below undergoes dehydrohalogenation in the presence of a strong base to give 2-pentene as the only alkene product?

a) 1-chloropentane b) 2-chloropentane c) 3-chloropentane d) 1-chloro-2-methylbutane

Ans. **c) 3-chloropentane**

1.7 Pick out the compound which reacts fastest in the presence of $AgNO_3$-

a) $(CH_3)_3CCl$ b) $(CH_3)_2CHCH_2Cl$ c) $(CH_3)_2CHCl$ d) CH_3CH_2Cl

Ans. **a) $(CH_3)_3CCl$**

1.8 Which one of the following would react most rapidly with sodium ethoxide to produce an ether?

a) Chlorobenzene b) 2-nitrotoluene c) p-nitro chlorobenzene d) m-(chloromethyl)-toluene

Ans. **d) m-(chloromethyl)-toluene**

1.9 Which of the following is an ambident nucleophile?

a) CN^- b) –OMe c) -Cl d) $–CH_3$

Ans**. a) CN^-**

1.10 Alkane can be prepared on reaction of Grignard reagent with

a) HCN b) NH_3 c) H_2O d) All of these

Ans. **d) All of these**

1.11 CH_3MgBr on treatment with $^{14}CO_2$ generates-

a) CH_3COOH b) $CH_3{}^{14}COOH$ c) $^{14}CH_3{}^{14}COOH$ d) $^{14}CH_3COOH$

Ans.**b) $CH_3{}^{14}COOH$**

1.12 CH_3CH_2Cl reacts with $AgNO_2$ to form-

a) Nitro ethane b) Ethane nitrite c) Both a and b d) None of these

Ans. **a) Nitro ethane**

1.13 C_2H_5MgBr reacts with CH_3COCl, followed by hydrolysis to form-

a) 1^o alcohol b) 2^o alcohol c) 3^o alcohol d) Carboxylic acid

Ans**. c) 3^o alcohol**

1.14 Which among the following can't be considered as an organometallic compound-

a) CH_3Li b) CH_3MgBr c) CH_3ONa d) $(CH_3)_2CuLi$

Ans. **c) CH_3ONa**

1.15 $(CH_3)_2CuLi$ on reaction with C_2H_5Br forms-

a) $CH_3CH_2CH_3$ b) CH_3CH_3 c) $CH_3CH_2CH_2CH_3$ d) CH_4

Ans. **a) $CH_3CH_2CH_3$**

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