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**Department of Chemistry**

**B.Sc.III Chemistry, Organic Chemistry Paper- XV Sem-VI**

**Question Bank**

**Topic –Electrophilic Addition to C=C bond and Carbon Carbon Triple bond**

Select the most correct alternative of the following and rewrite the statement with correct alternative once.

- Catalytic hydrogenation of alkynes produces-----  
a)Alkanes    b) alcohols    c) aldehydes and ketones    d) benzene
- compound containing carbon carbon double bond on ozonolysis forms-----  
a)tetra haloalkane    b) alcohols    c) aldehydes and ketones    d) diol
- Addition of halogens to compoundcontaining carbon carbon triple bond produces-----  
a)dihaloalkanes    b) vicinal halide    c) alkyl halide    d) Tetra haloalkanes
- Calalytic hadrogenation of alkynes produces finally-----  
a)mixture of alkanes and alkenes    b) alkanes    c) benzene    d) alkenes
- Addition of halogen acid to alkynes produces-----  
a)Geminal dihalide    b) vicinal dihalide    c) benzene    d) cyclohexanone
- Symmetrical and unsymmetrical triple bonded compounds undergo addition of water and forms-  
a)Aldehydes and ketones    b) cyclohexene    c) carboxylic acid    d) cyclohexanone
- Acetylene reacts with sodamide and forms-----  
a)Sodium alkynide    b) sodium acetylde    c) sodium acetylde and alkyn    d) non of these
- Compound containing C=C on treatment with -----form alcohol  
a)Dil-H<sub>2</sub>SO<sub>4</sub>    b) Cold aq. KMNO<sub>4</sub> solution    c)ozone    d) dilute alkali
- is used to convert an alkene into alcohol  
a) Borane and H<sub>2</sub>O<sub>2</sub>    b) Ozone    c) Cold aq, KMNO<sub>4</sub>    d) dilute alkali
- Oubl bond compound to form 1:2 dilos with-----  
a) Dilute H<sub>2</sub>SO<sub>4</sub>    b)BH<sub>3</sub> and H<sub>2</sub>O<sub>2</sub>    c) Cold aq, KMNO<sub>4</sub> solution    d) dilute HCl
- Unsaturated compound on treatment with -----form halohydrin  
a) hypohalous acid    b)BH<sub>3</sub> and H<sub>2</sub>O<sub>2</sub>    c) halogen    d) dilute HCl
- Addition of water across a double bond is termed as-----  
a) Hydration    b)hydrogenation    c) dehydration    d) reduction
- Addition of halogen across C=C bond produces-----  
a) Vicinal dihalide    b) germinal dihalide    c) alkyl halide    d) alkyl chloride
- Compound containing C=C bond undergo----- reaction  
a) Substitution    b) addition    c) replacement    d) elimination

15. Compound containing carbon- carbon triple bond undergo----- reactions  
 a) Substitution b elimination c) replacement d) addition
16. Propylene is treated with  $O_3$  to form-----  
 a) Propylene ozonide b ethylene ozonide c) butyl ozonide d) all of these
17. 2-butene is converted into butane in presence of -----  
 a) Ni/heat b  $H_2$ /Ni/heat c) KOH/Ni d) NaOH/Ni
18. Propylene is converted into 1,2 dihydroxy ethane in presence of-----  
 a) NBS b  $H_2$ /Ni/heat c) cold aq. $KMnO_4$  d) NaOH/Ni
19. Ethene is treated with  $Br_2$  to form-----  
 a) 2-bromo 3methyl butane b butanone c) 2-bromo,2-methyl butane d) 1,2 dibromoethane
20. 3-methyl 1-butene in presence of HBr gives-----as a major product  
 a) 2-bromo 3methyl butane b butanone c) 1,2 dibromoethane d) 2-bromo,2-methyl butane

### Short answer type questions

**Explain the following addition reactions to Carbon-Carbon double bond ( $>C=C<$ ) bond**

1. Hydrohalogenation:-orientation & reactivity,
2. Anti-Markovnikoff's addition (peroxide effect),
3. Rearrangements (support for formation of carbocation),
4. Addition of halogens, Addition of water,
5. Addition of hypohalous acids (HO-X),
6. Hydroxylation (formation of 1,2-diols),
7. Hydroboration-oxidation (formation of alcohol),
8. Hydrogenation (formation of alkane), Ozonolysis (formation of aldehydes & ketones).

**Explain the following addition reaction to Carbon-Carbon triple bond**

1. Addition of halogens,
2. Addition of halogen acids,
3. Addition of hydrogen,
4. Addition of water,
5. Formation of metal acetylides.

### Long answer type questions

**Explain in detail general reaction and mechanism of following reactions to Carbon-Carbon double bond ( $>C=C<$ ) bond**

1. Hydrohalogenation:-
2. Anti-Markovnikoff's addition (peroxide effect),
3. Rearrangements (support for formation of carbocation),
4. Addition of halogens,
5. Addition of water,

6. Addition of hypohalous acids (HO-X),
7. Hydroxylation (formation of 1,2-diols),
8. Hydroboration-oxidation (formation of alcohol),
9. Hydrogenation (formation of alkane), Ozonolysis (formation of aldehydes & ketones).

**Explain in detail general reaction and mechanism of following reactions to Carbon-Carbon triple bond**

1. Addition of halogens,
2. Addition of halogen acids,
3. Addition of hydrogen,
4. Addition of water,
5. Formation of metal acetylides.

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