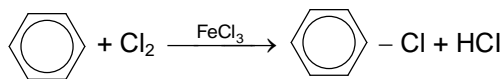
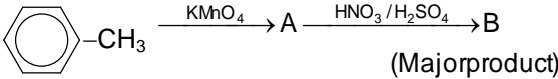


TOPIC : CHEMISTRY OF HYDROCARBONS

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|---|---|
| <p>1. Propene + HBr gives
 (a) 1, 3-Dibromopropane
 (b) 2-Bromopropane
 (c) 1-Bromopropane
 (d) 1, 2-Dibromopropane</p> <p>2. sec-Butyl chloride on boiling with alc. KOH gives..... as the main product.
 (a) 1-Butene (b) 2-Butene
 (c) 1-Butanol (d) 2-Butanol</p> <p>3. Allylic bromination of an olefin is
 (a) Nucleophilic substitution
 (b) Electrophilic substitution
 (c) Free radical substitution
 (d) Electrophilic addition</p> <p>4. Ozonolysis of acetylene gives
 (a) Oxalic acid (b) Ethylene glycol
 (c) Glyoxal (d) CH₃CHO</p> <p>5. Which of the following is most acidic ?
 (a) Ethyne (b) Propyne
 (c) 1-Butyne (d) 2-Butyne</p> <p>6. Octane number of iso-octane is
 (a) Zero (b) 100
 (c) 80 (d) 20</p> <p>7. Isopropyl bromide on Wurtz reaction gives
 (a) Hexane (b) Propane
 (c) 2, 3-Dimethylbutane (d) Neohexane</p> <p>8. A war gas Lewisite is formed by reaction of arsenic chloride with
 (a) CH₄ (b) C₆H₆
 (c) C₂H₂ (d) C₂H₄</p> <p>9. Major constituent of light oil is
 (a) Benzene (b) Phenol
 (c) Aniline (d) Anthracene</p> <p>10. Propene when heated with chlorine at about 800 K forms
 (a) ClCH₂ – CH = CH₂
 (b) CH₃ – CHCl – CH₂Cl
 (c) CH₂Cl – CHCl – CH₂Cl
 (d) All of these</p> | <p>11. In its reaction with silver nitrate, acetylene shows
 (a) Oxidizing property (b) Reducing property
 (c) Basic property (d) Acidic property</p> <p>12. Which of the following derivatives of benzene would undergo nitration most readily ?
 (a) Nitrobenzene (b) Chlorobenzene
 (c) Toluene (d) Benzoic acid</p> <p>13. Which of the following compounds has the highest boiling point
 (a) n-Hexane
 (b) n-Pentane
 (c) 2, 2-Dimethylpropane
 (d) 2-Methylbutane</p> <p>14. When propyne is treated with aqueous H₂SO₄ in the presence of HgSO₄, the major product is
 (a) Acetaldehyde (b) Propanal
 (c) 2-Propanol (d) Propanone</p> <p>15. When HBr adds to 1-butene in the presence of benzoyl peroxide, the product is
 (a) 1-Bromobutane (b) 2-Bromobutane
 (c) 1-Bromobutene (d) 2-Bromobutene</p> <p>16. Benzene reacts with excess of chlorine in sunlight to form
 (a) Hexachlorobenzene
 (b) m-Dichlorobenzene
 (c) Chlorobenzene
 (d) Benzene hexachloride</p> <p>17. On chlorination, nitrobenzene gives.... as the major product
 (a) o-Chloro nitrobenzene
 (b) p-Chloro nitrobenzene
 (c) m-Chloro nitrobenzene
 (d) All the three</p> <p>18. A group which deactivates the benzene ring towards electrophilic substitution but directs the incoming group towards o- and p-positions is
 (a) –NH₂ (b) –Cl
 (c) –NO₂ (d) –C₂H₅</p> |
|---|---|

19. Propene can be converted into 1-propanol by
 (a) Hydration
 (b) Hydroboration-oxidation
 (c) Reaction with alkaline KMnO_4
 (d) Reaction with dil. NaOH solution
20. m-Xylene on oxidation with acidified KMnO_4 yields
 (a) Phthalic acid
 (b) Benzoic acid
 (c) Terephthalic acid
 (d) Isophthalic acid
21. On ozonolysis, an alkene gave acetone and acetaldehyde along with H_2O_2 . The alkene is
 (a) 2, 3-Dimethyl-2-butene
 (b) 2-Methyl-2-butene
 (c) 3-Methyl-2-butene
 (d) 2-Butene
22. During electrophilic substitution in benzene, the intermediate species involved is
 (a) Carbocation (b) Carbanion
 (c) Free radical (d) None of these
23. In the reaction,


$$\text{C}_6\text{H}_6 + \text{Cl}_2 \xrightarrow{\text{FeCl}_3} \text{C}_6\text{H}_5\text{Cl} + \text{HCl}$$
 the attacking species is
 (a) Cl_2 (b) Cl^+
 (c) Cl^- (d) FeCl_4^-
24. Towards electrophilic substitution the most reactive will be
 (a) Nitrobenzene (b) Aniline
 (c) Aniline hydrochloride (d) N-Acetylaniline
25. Which of the following reactions would yield 2, 2-dibromopropane ?
 (a) $\text{HC} \equiv \text{CH} + 2\text{HBr} \rightarrow$
 (b) $\text{CH}_3\text{C} \equiv \text{CH} + 2\text{HBr} \rightarrow$
 (c) $\text{CH}_3\text{CH} = \text{CH}_2 + \text{HBr} \rightarrow$
 (d) $\text{CH}_3\text{CH} = \text{CHBr} + \text{HBr} \rightarrow$
26. Acetylene reacts with HOCl to form
 (a) Dichloroacetaldehyde
 (b) Ethylene chlorohydrin
 (c) Chloroacetaldehyde
 (d) Acetaldehyde
27. 1-Butyne reacts with cold alkaline KMnO_4 to yield
 (a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$
 (b) $\text{CH}_3\text{CH}_2\text{COOH}$
 (c) $\text{CH}_3\text{CH}_2\text{COOH} + \text{CO}_2$
 (d) $\text{CH}_3\text{CH}_2\text{COOH} + \text{HCOOH}$
28. An aromatic compound among other things should have a π -electron cloud containing $(4n + 2)$ π -electrons where n can't be
 (a) $1/2$ (b) 3
 (c) 2 (d) 1
29. 1-Butene and 2-butene can be distinguished by their reaction with
 (a) Ammonical solution of AgNO_3
 (b) Ammonical solution of Cu_2Cl_2
 (c) Alkaline solution of KMnO_4
 (d) None of these
30. A hydrocarbon of formula C_6H_6 decolourizes bromine water. It also gives precipitate with ammonical AgNO_3 solution. The hydrocarbon can possibly be
 (a) 1, 3, 5-Cyclohexatriene
 (b) 1, 5-Hexadiyne
 (c) 2, 4-Hexadiyne
 (d) None of these
31. Upon oxidation with acidified KMnO_4 ethyl benzene gives
 (a) Benzyl alcohol (b) Phenyl acetic acid
 (c) Benzoic acid (d) 1-Phenyl ethanol
32. In n is the number of carbon atoms in the potassium salt of a carboxylic acid, then the alkane formed on electrolysis of aqueous solution of this salt would have carbon atoms equal to
 (a) n (b) $n - 1$
 (c) $2n - 1$ (d) $2(n - 1)$
33. Benzene on ozonolysis yields
 (a) Glyoxal (b) Acetone
 (c) Ethanal (d) Methanal
34. sec-Butyl bromide is subjected to Wurtz reaction. The alkane formed is
 (a) Octane (b) 3, 4-Dimethylhexane
 (c) 3, 4-Dimethyloctane (d) 2, 5-Dimethylhexane

35. The correct order of melting points of isomeric pentanes is
 (a) n-Pentane > iso-Pentane > neo-Pentane
 (b) neo-Pentane > iso-Pentane > n-Pentane
 (c) neo-Pentane > n-Pentane > iso-Pentane
 (d) n-Pentane > neo-Pentane > iso-Pentane
36. Cyclohexene on ozonolysis yields
 (a) $\text{CH}_3\text{CH}_2\text{CHO}$ (2 moles)
 (b) $\text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{CH}_3$ (2 moles)
 (c) $\text{CH}_3\text{CH}_2\text{CHO} + \text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{CH}_3$
 (d) $\text{OHC} - (\text{CH}_2)_4 - \text{CHO}$
37. In the acid catalyzed dehydration of alcohol to alkenes, the intermediate species formed is
 (a) Free radical (b) Carbocation
 (c) Carbanion (d) Carbene
38. The olefin which on ozonolysis gives $\text{CH}_3\text{CH}_2\text{CHO}$ and CH_3CHO is
 (a) 1-Butene (b) 2-Butene
 (c) 1-Pentene (d) 2-Pentene
39. Which one of the followings has the smallest heat of hydrogenation per mole ?
 (a) 1-Butene
 (b) trans-2-Butene
 (c) cis-2-Butene
 (d) 1, 3-Butadiene
40. 
 The product B is
 (a) 4-Nitrotoluene (b) 3-Nitrotoluene
 (c) 3-Nitrobenzoic acid (d) 4-Nitrobenzoic acid
41. In the reaction
 $\text{C}_6\text{H}_5\text{CH}_3 \xrightarrow{\text{Oxidation}} \text{A} \xrightarrow{\text{NaOH}} \text{B} \xrightarrow{\text{Sodalime}} \text{C}$,
 The product C is
 (a) $\text{C}_6\text{H}_5\text{OH}$ (b) C_6H_6
 (c) $\text{C}_6\text{H}_5\text{COONa}$ (d) $\text{C}_6\text{H}_5\text{ONa}$
42. Which set of products is expected on reductive ozonolysis of the following diolefin ?

$$\text{CH}_3 - \text{CH} = \overset{\text{CH}_3}{\underset{|}{\text{C}}} - \text{CH} = \text{CH}_2$$

 (a) CH_3CHO ; $\text{CH}_3\text{COCH} = \text{CH}_2$
 (b) $\text{CH}_3\text{CH} = \text{C}(\text{CH}_3)\text{CHO}$; CH_2O
 (c) CH_3CHO ; CH_3COCHO ; CH_2O
 (d) CH_3CHO ; CH_3COCH_3 ; CH_2O
43. Formation of polyethene from calcium carbide takes place as follows :
 $\text{CaC}_2 + 2\text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{C}_2\text{H}_2$;
 $\text{C}_2\text{H}_2 + \text{H}_2 \rightarrow \text{C}_2\text{H}_4$;
 $n\text{C}_2\text{H}_4 \rightarrow (-\text{CH}_2 - \text{CH}_2 -)_n$
 The amount of polythene obtained from 64 kg of CaC_2 is
 (a) 7 kg (b) 14 kg
 (c) 21 kg (d) 28 kg
44. An unknown compound A has a molecular formula C_4H_6 . When A is treated with excess of Br_2 a new substance B with formula $\text{C}_4\text{H}_6\text{Br}_4$ is formed. A forms a white ppt. with ammonical silver nitrite solution. A may be
 (a) But-1-yne (b) But-2-yne
 (c) But-1-ene (d) But-2-ene
45. $\text{C}_6\text{H}_6 + \text{CH}_3 - \text{CH} = \text{CH}_2 \xrightarrow{\text{H}_3\text{PO}_4} \text{X}$
 The product 'X' in the above reaction is
 (a) Styrene (b) Cumene
 (c) Mesitylene (d) None of these
46. A compound on ozonolysis gives glyoxal, acetone and formaldehyde as the products. The compound could be
 (a) $\text{CH}_3\text{CH} = \text{CH} - \text{CH} = \overset{\text{CH}_3}{\underset{|}{\text{C}}} - \text{CH}_3$
 (b) $\text{H}_2\text{C} = \text{CH} - \text{CH} = \overset{\text{CH}_3}{\underset{|}{\text{C}}} - \text{CH}_3$
 (c) $\text{CH}_3 - \overset{\text{CH}_3}{\underset{|}{\text{CH}}} - \text{CH} = \text{CH} - \text{CH} = \text{CH}_2$
 (d) $\text{CH}_3 - \overset{\text{CH}_3}{\underset{|}{\text{C}}} = \text{CH} - \overset{\text{CH}_3}{\underset{|}{\text{C}}} = \text{CH}_2$

47. Which of the following represents the correct order of acidic character ?
- (a) $\text{H}_2\text{O} > \text{HC} \equiv \text{CH} > \text{C}_2\text{H}_6 > \text{C}_2\text{H}_4$
 (b) $\text{H}_2\text{O} > \text{HC} \equiv \text{CH} > \text{C}_2\text{H}_4 > \text{C}_2\text{H}_6$
 (c) $\text{HC} \equiv \text{CH} > \text{C}_2\text{H}_4 > \text{C}_2\text{H}_6 > \text{H}_2\text{O}$
 (d) $\text{HC} \equiv \text{CH} > \text{H}_2\text{O} > \text{C}_2\text{H}_4 > \text{C}_2\text{H}_6$
48. Which one of the following statements is not true ?
- (a) Peroxide effect is applicable to HBr and not to other hydrogen halides
 (b) Chlorination of methane follows free radical chain mechanism
 (c) All the meta directing groups on the benzene ring are also deactivating groups
 (d) Propyne is stronger acid than ethyne
49. $\text{CH}_3 - \text{CH}_2 - \text{CH} = \text{CH}_2 \xrightarrow{\text{NBS}} \text{X} \xrightarrow{\text{alc.KOH}} \text{Y}$
 The compound Y is
 (a) But-3-en-2-ol (b) But-3-en-1-ol
 (c) 1, 3-Butadiene (d) 1, 2-Butadiene
50. Ethene is shaken with aqueous solution of Br_2 and NaCl. Which of the following is not the possible product ?
- (a) $\begin{array}{c} \text{CH}_2 - \text{Br} \\ | \\ \text{CH}_2 - \text{Br} \end{array}$ (b) $\begin{array}{c} \text{CH}_2 - \text{Br} \\ | \\ \text{CH}_2 - \text{Cl} \end{array}$
 (c) $\begin{array}{c} \text{CH}_2 - \text{Cl} \\ | \\ \text{CH}_2 - \text{Cl} \end{array}$ (d) $\begin{array}{c} \text{CH}_2 - \text{Br} \\ | \\ \text{CH}_2 - \text{OH} \end{array}$

ANSWERS KEY

1	B	11	D	21	B	31	C	41	B
2	B	12	C	22	A	32	D	42	C
3	C	13	A	23	B	33	A	43	D
4	C	14	D	24	B	34	B	44	A
5	A	15	A	25	B	35	C	45	B
6	B	16	D	26	A	36	D	46	B
7	C	17	C	27	C	37	B	47	B
8	C	18	B	28	A	38	D	48	D
9	A	19	B	29	D	39	D	49	C
10	A	20	D	30	B	40	C	50	C