CLASS XI CHE CH: 9

SET 2 – Alkenes (MCQs)

1. Alkenes are –
   a) Saturated hydrocarbons
   b) Unsaturated hydrocarbons
   c) Aromatic compounds
   d) Alcohols

2. The general formula of alkenes is –
   a) CnH2n+2
   b) CnH2n
   c) CnH2n–2
   d) CnHn

3. The first stable member of alkene series is –
   a) Methene
   b) Ethene
   c) Propene
   d) Butene

4. The common name of ethene is –
   a) Acetylene
   b) Ethylene
   c) Olefin
   d) Ethanol

5. The suffix used in IUPAC nomenclature of alkenes is –
   a) –ane
   b) –ene
   c) –yne
   d) –ol

6. The double bond in alkenes consists of –
   a) One σ and one π bond
   b) Two σ bonds
   c) Two π bonds
   d) One δ bond

7. The C=C bond length in alkenes is approximately –
   a) 120 pm
   b) 134 pm
   c) 154 pm
   d) 180 pm

8. The hybridisation of carbon in ethene is –
   a) sp^3
   b) sp^2

c) sp
d) dsp^2

9. The bond angle in ethene molecule is about –
a) 90°
b) 109.5°
c) 120°
d) 180°

10. The π bond in ethene is formed by –
a) End-on overlap of sp^2 orbitals
b) Lateral overlap of p orbitals
c) Overlap of s orbitals
d) Overlap of sp orbitals

11. Alkenes are also known as –
a) Paraffins
b) Olefins
c) Aromatics
d) Alkynes

12. The general formula C_4H_8 may represent –
a) Only one compound
b) Two compounds
c) Three compounds
d) Four compounds

13. 1-Butene and 2-butene are examples of –
a) Chain isomers
b) Position isomers
c) Functional isomers
d) Metamers

14. 1-Butene and 2-methylprop-1-ene are –
a) Chain isomers
b) Geometrical isomers
c) Functional isomers
d) Tautomers

15. Geometrical isomerism is shown by compounds having –
a) Single bond
b) Double bond
c) Triple bond
d) Aromatic ring

16. The two forms of geometrical isomerism are –
a) Chain and position
b) Cis and trans

c) Optical and structural
d) Tautomeric and mesomeric

17. In cis isomer, identical groups are –
a) On the same side
b) On opposite sides
c) At right angles
d) At the ends

18. The compound $CH_3CH=CHCH_3$ shows –
a) Chain isomerism
b) Cis-trans isomerism
c) Functional isomerism
d) None

19. The trans isomer of but-2-ene is –
a) More polar
b) Less polar
c) More reactive
d) Unstable

20. Dipole moment of trans-but-2-ene is –
a) Zero
b) 0.33 D
c) 1.0 D
d) 3.3 D

21. Which compound will not show geometrical isomerism?
a) 2-butene
b) 2-pentene
c) 1-butene
d) 2-hexene

22. The addition of H_2 to alkenes gives –
a) Alkanes
b) Alkynes
c) Aromatics
d) Alcohols

23. The catalyst used for hydrogenation of alkenes is –
a) $AlCl_3$
b) Ni, Pd or Pt
c) H_2SO_4
d) $ZnCl_2$

24. The addition of H_2 across C=C bond is –
a) Dehydration
b) Oxidation

c) Reduction
d) Polymerisation

25. The test for unsaturation is –
a) Bromine water test
b) Lime water test
c) Tollen's test
d) Iodine test

26. Bromine water decolorises with alkenes due to –
a) Oxidation
b) Substitution
c) Addition
d) Elimination

27. The reddish-brown color of bromine solution in CCl_4 disappears with –
a) Alkanes
b) Alkenes
c) Aromatics only
d) None

28. When HBr is added to propene, the major product is –
a) 1-bromopropane
b) 2-bromopropane
c) 3-bromopropane
d) 1,2-dibromopropane

29. The above reaction follows –
a) Markovnikov's rule
b) Peroxide rule
c) Kharash rule
d) Saytzeff rule

30. According to Markovnikov's rule, the negative part of adding molecule goes to –
a) More hydrogenated carbon
b) Less hydrogenated carbon
c) Both equally
d) None

31. In presence of peroxide, addition of HBr to propene gives –
a) 2-bromopropane
b) 1-bromopropane
c) 1,2-dibromopropane
d) Propanol

32. The peroxide effect is also called –
a) Markovnikov effect
b) Anti-Markovnikov effect

c) Addition effect
d) Inductive effect

33. Peroxide effect occurs only with –
a) HCl
b) HI
c) HBr
d) HF

34. In anti-Markovnikov addition, the mechanism is –
a) Ionic
b) Free radical
c) Electrophilic
d) Nucleophilic

35. Cold dilute $KMnO_4$ oxidises alkenes to –
a) Dihalides
b) Glycols
c) Acids
d) Aldehydes

36. The above reaction (Q35) is used as –
a) Test for saturation
b) Test for unsaturation
c) Test for alcohol
d) Test for aldehyde

37. Oxidation of but-2-ene with acidified $KMnO_4$ gives –
a) Acetone
b) Acetic acid
c) Ethanol
d) CO_2

38. Addition of ozone to alkenes forms –
a) Peroxides
b) Ozonides
c) Alcohols
d) Ethers

39. Ozonolysis of ethene gives –
a) Methanal
b) Ethanal
c) Ethanol
d) Acetone

40. The polymer formed from ethene is –
a) Polyethylene
b) Polypropene

c) PVC
d) Teflon

41. Polymerisation of ethene occurs under –
a) Low temperature
b) High temperature and pressure
c) Room temperature
d) No catalyst

42. Catalyst used in polymerisation of ethene is –
a) Ni
b) $AlCl_3$
c) Zeigler–Natta or peroxide
d) $FeCl_3$

43. Polypropylene is obtained from –
a) Propene
b) Ethene
c) Benzene
d) Methane

44. Alkenes are more reactive than alkanes because –
a) They are saturated
b) They contain π bond
c) They have σ bond only
d) They are aromatic

45. The π-bond electrons in alkenes make them –
a) Electron-deficient
b) Electron-rich
c) Unreactive
d) Ionic

46. Electrophilic addition reactions involve attack by –
a) Electron-rich reagents
b) Electron-deficient reagents
c) Neutral reagents
d) Bases

47. The reactivity order of hydrogen halides towards alkenes is –
a) HCl > HBr > HI
b) HI > HBr > HCl
c) HBr > HCl > HI
d) HCl > HI > HBr

48. The reaction of ethene with cold, concentrated H_2SO_4 gives –
a) Ethanol
b) Ethyl hydrogen sulfate

c) Diethyl ether
d) Acetone

49. Alkenes on oxidation with hot, concentrated $KMnO_4$ undergo –
a) Cleavage of double bond
b) Dehydrogenation
c) Dehydration
d) Isomerisation

50. Which reaction produces aldehydes or ketones from alkenes?
a) Polymerisation
b) Ozonolysis
c) Hydrogenation
d) Nitration

✅ Answers – SET 2

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