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Class: 11
Subject: Chemistry
Topic: Hydrocarbons
No. of Questions: 25

Q1. Give any two methods for the preparation of methane.

Q2. What are the terms ortho, meta and para stands for?

Q3. Compare the rate of nitration under similar conditions of Ph-O-Me and Ph-S-Me. Explain.

Q4. Write equations for the following chemical conditions:
a) When alkynes burns in air or oxygen.
b) When ethyne reacts with hydrogen in the presence of catalyst (Pt or Ni) at $250^{o}C$.
c) When ethyne reacts with chlorine.
d) When ethyne reacts with water in the presence of suitable reagent.

Q5. Why is Wurtz reaction not preferred for the preparation of alkanes containing odd number of carbon atoms? Illustrate your answer by taking one example.

Q6. Why is Friedel-Crafts acylation but not alkylation of naphthalene practical?

Q7. How will you prepare ethane from ethyl iodide? Give the reaction.

Q8. Is it possible to isolate pure staggered ethane or pure eclipsed ethane at room temperature?

Q9. Give the IUPAC name of the following compound:

$CH_2 = CH - CH = CH_2$

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Q10. What is cracking process? Explain catalytic cracking

Q11. Which salt on treatment with soda lime gives ethane?

Q12. Define the following:

(a)Structural isomers

(b)Chain isomers

Q13. Write the IUPAC names of the products obtained by the ozonolysis of the following compounds:
(i) Pent-2-ene
(ii) 1-Phenylbut-1-ene

Q14. The hydrocarbon 'A' adds on mole of hydrogen in the presence of platinum to form n-hexane. When 'A' is oxidized vigorously with $KMnO_4$, a single carboxylic acid containing three carbon atoms is isolated. Give the structure of 'A' and explain.

Q15. Complete the following reactions:

Q16. Give three methods for preparation of alkenes.

Q17. Account for the greater reactivity and the o, p-orientation in electrophilic substitution of biphenyl despite the electron-attracting inductive effect of the phenyl group.

Q18. What effect does the branching of an alkane has on its melting point?

Q19. What types of isomerism is shown by alkenes?

Q20. What are uses of alkynes?

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Q21. What is Huckel's rule?

Q22. What are polynuclear aromatic hydrocarbons?

Q23. Name the two extreme type of conformation of ethane.

Q24. Trans form of alkene is:

a) More polar than cis form

b) Less polar than cis form

c) Less dipole moment

d) Both (2) and (3)

Q25. Aromatic compound containing Benzene Ring are known as:

a) Non-Benzenoids

b) Arenes

c) Alkynes

d) Benzenoids