CBSE TEST PAPER 11

CLASS XI CHEMISTRY

(Hydrocarbons)

General Instruction:

- All questions are compulsory.
- Marks are given alongwith their questions.

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1. How is benzene prepared from aromatic acids? [2]

2. How is phenol reduced to benzene? [2]

3. How would you convert ethanoic acid into benzene? [3]

4. How will you convert the following compounds to benzene?

(i) Acetylene (ii) Benzoic acid

(iii) Cyclohexane (iv) Benzene diazonium chloride. [8]

5. How will you convert the following compounds into benzene?

(i) ethene (ii) hexane. [1]

6. Why is benzene extra ordinarily stable though it contains three double bounds? [2]

7. How would you prepare benzene from lime? [4]

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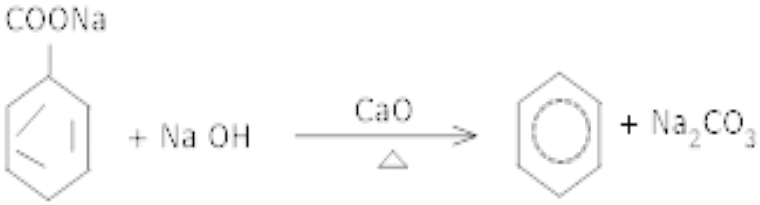
CLASS XI CHEMISTRY (Hydrocarbons)

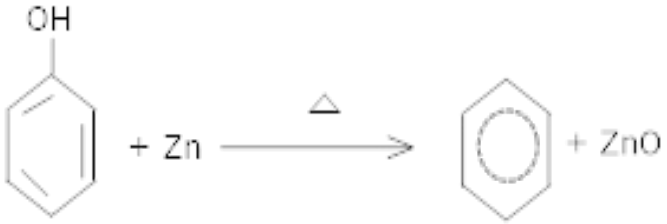
[ANSWERS]

Ans 01. Sodium salt of benzoic acid on heating with soda lime gives benzene and sodium carbonate.

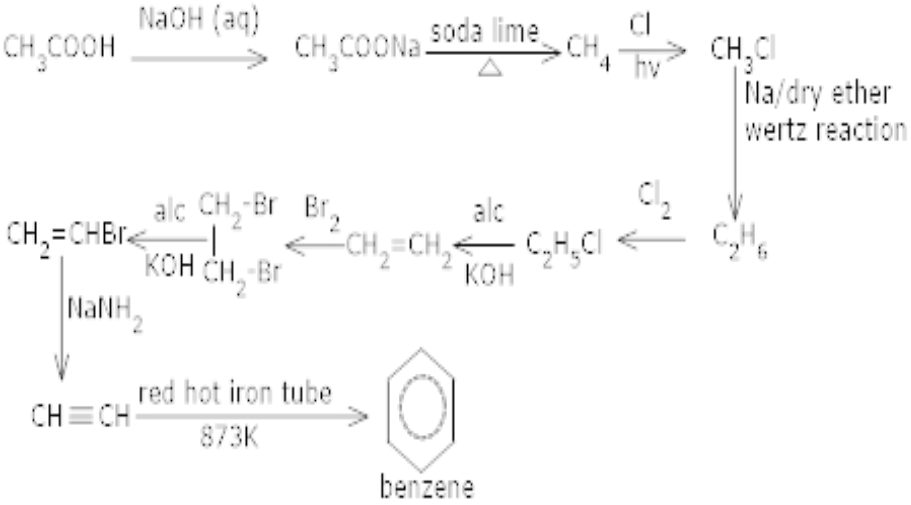


Ans 02. Phenol is reduced to benzene by passing its vapours over heated zinc dust.Z

Zn is obtained as oxide at the end.



Ans 03.



Ans 04. (i) When ethyne is heated at a higher temperature it polymerizes to give benzene when passed over organo nickel catalyst at 70°C or iron tune at 500°C or 773K.

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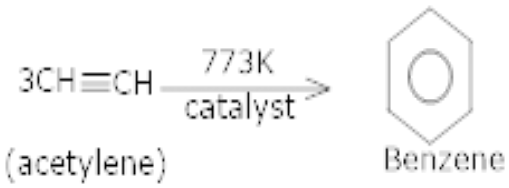
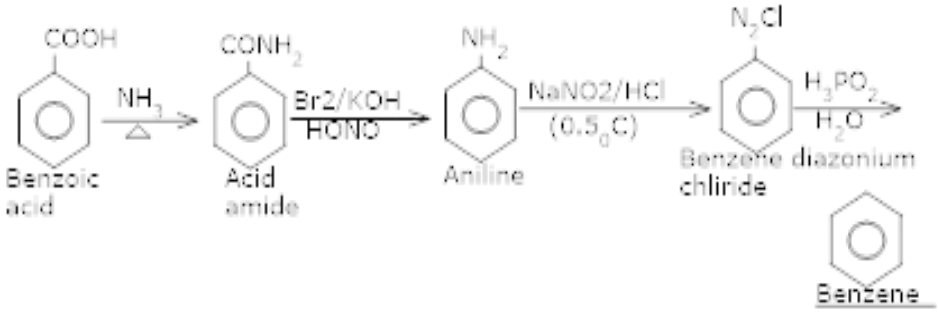
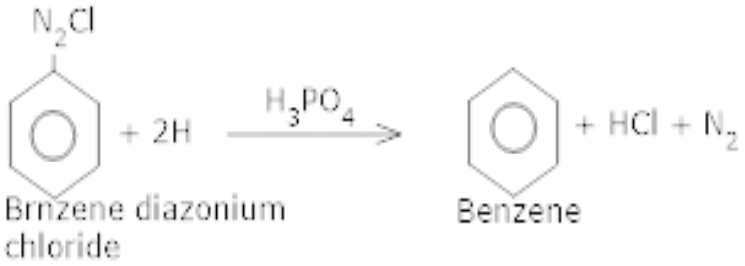


(ii) Benzoic acid when treated with NH_3 and heat changes to amide which on treatment with Br_2 / KOH gives aniline. Aniline converts to diazonium salt which on acid hydrolysis gives benzene.

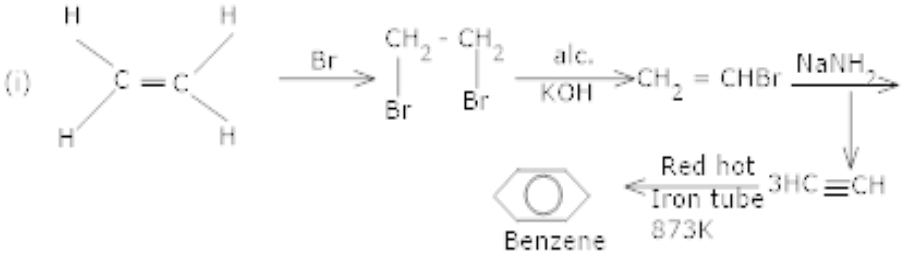


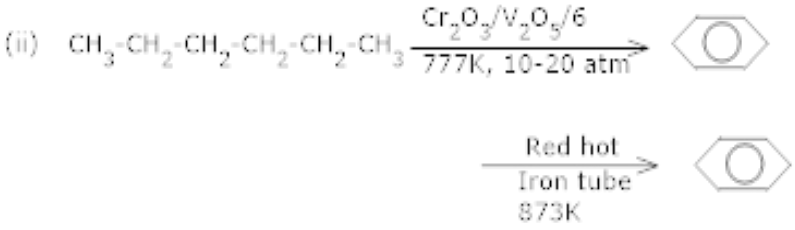
(iii) Cyclohexane when treated with iron or quartz in a red hot tube under goes oxidation to form benzene.

(iv) In the presence of hypoposphorus acid benzene diazonium chloride is converted into benzene. (diazo group is replaced by H)



Ans 05.





Ans 06. Due to resonance.

Ans 07. Benzene can be prepared from lime by the following methods: