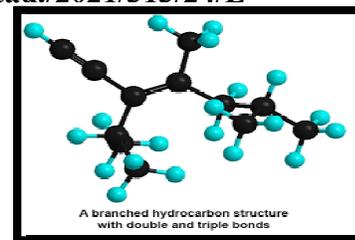


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Lesson24 : Hydrocarbons
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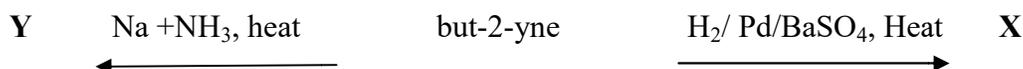


1. Benzene is the one of the most basic petrochemicals. It is the simplest and ideal aromatic compound. It is mainly used to prepare a number of important chemicals such as toluene, phenol, aniline, biphenyl etc which are used in the manufacture of dyes, detergents, drugs, explosives, pesticides, rubbers and lubricants. But it is carcinogenic (likely to cause cancer). Explain the following questions.
 - (a) Why benzene is used as additive in gasoline?
 - (b) Mention 3 uses of benzene in petrochemical industry.
 - (c) Comment on the bad effects and carcinogenicity of benzene.
 - (d) In view of toxicity and carcinogenicity of benzene, should its production be banned? Give your suggestions.

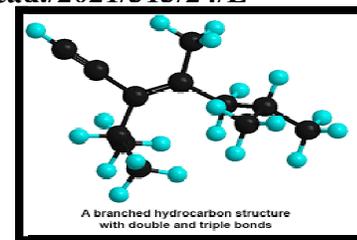
2. Saturated aliphatic hydrocarbons are called alkanes. They are mainly used as fuels. Depending upon their physical properties such as boiling point, density, solubility, they have many other uses. Now answer the following questions.
 - (a) Which alkane is used in cigarette lighters?
 - (b) What is mineral oil? Give its uses.
 - (c) Out of propane and butane why is propane used as fuel for barbecue grill?
 - (d) What are the uses of solid alkanes?
 - (e) What is Vaseline? What are its uses?

3. Amit and Saumya are best friends. One evening Amit went to Saumya's house and found her in the kitchen. She saw that the burner was emitting yellow flame and a black soot was getting deposited on the bottom of the cooking vessel. She advised Amit to put off the gas and helped her in cleaning the holes of the burner. The gas was then switched on and they found that the burner was now emitting clean blue flame.
 - (a) What was the purpose of cleaning the holes of the burner?
 - (b) Why was the burner emitting yellow flame?
 - (c) What value is expressed by Amit?

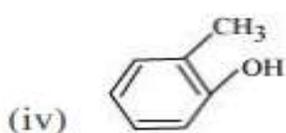
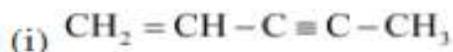
4. Identify the products X and Y of the following reactions:



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5. Write IUPAC names of the following compounds:



6. Which is more acidic among the following compounds, benzene, n-hexane or ethyne. Arrange them in the decreasing order of acidic behaviour. Also give reason for this behaviour.

विद्याधनम् सर्वधर्म प्रदानम्

7. An alkene 'A' on ozonolysis gives a mixture of ethanal and pentan-3-one. Write the structure and IUPAC name of alkene 'A'.

8. Out of benzene, m-dinitrobenzene and toluene which will undergo nitration most easily and why? 3

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

(b) State Huckel's rule. Draw the structure of Pyridine and Furan. Are these aromatic?

10. Explain whether the following systems are aromatic or not?

