

CHEMISTRY STUDY MATERIALS FOR CLASS 10

(NCERT Based notes of Chapter -04)

GANESH KUMAR

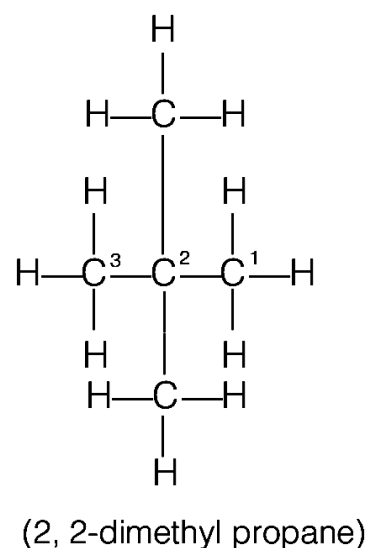
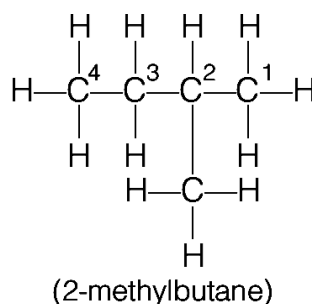
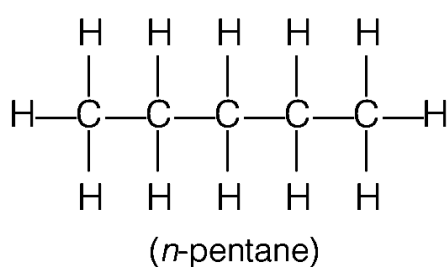
DATE:- 28/06/2021

CARBON AND ITS COMPOUND

INTEXT QUESTIONS PAGE NO. 68

Q1. How many structural isomers can you draw for pentane?

Answer: Pentane (C_5H_{12}) has a skeleton of five carbon atoms. It can exist as straight chain as well as two branched chains. The possible structural isomers have been shown below.



Q2. What are the two properties of carbon which lead to the huge number of carbon compounds we see around us?

Answer: The two features of carbon that give rise to a large number of compounds are as follows:

- Catenation – It is the ability to form bonds with other atoms of carbon.
- Tetravalency – with the valency of four, carbon is capable of bonding with four other atoms.

Q3. What will be the formula and electron dot structure of cyclopentane?

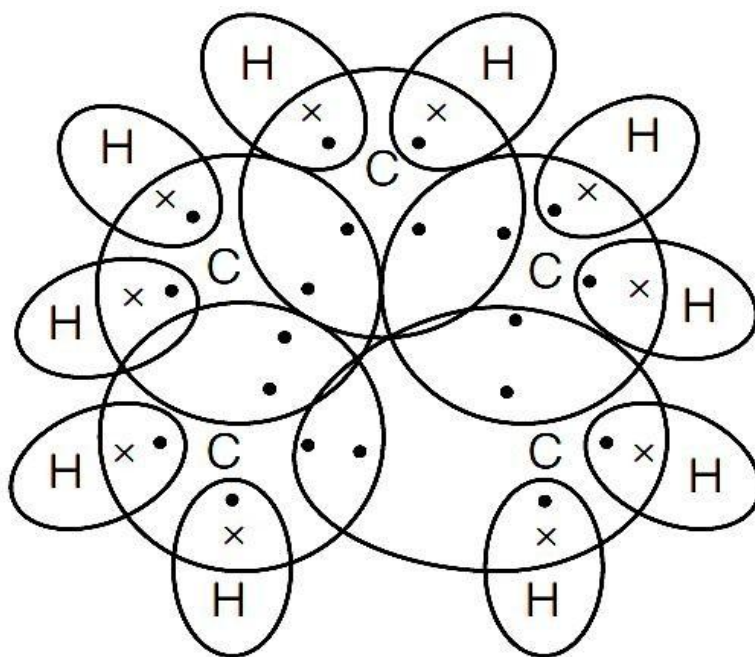
Answer:

General formula of cycloalkane = C_nH_{2n}

In cyclopentane $n = 5$,

Formula of cyclopentane, $C_5H_{5 \times 2} = C_5H_{10}$

Electron dot structure of cyclopentane



Q4. Draw the structures for the following compounds.

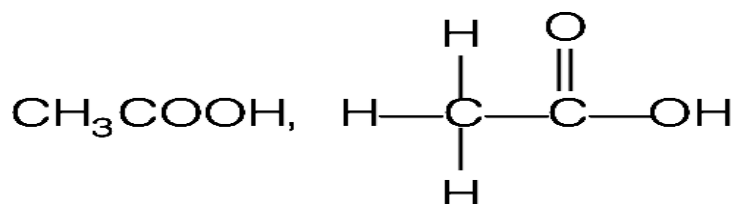
(i) Ethanoic acid (ii) Bromopentane*

(iii) Butanone (iv) Hexanal.

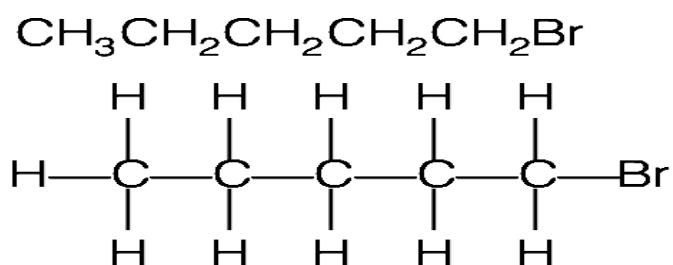
Are structural isomers possible for Bromopentane?

Answer:

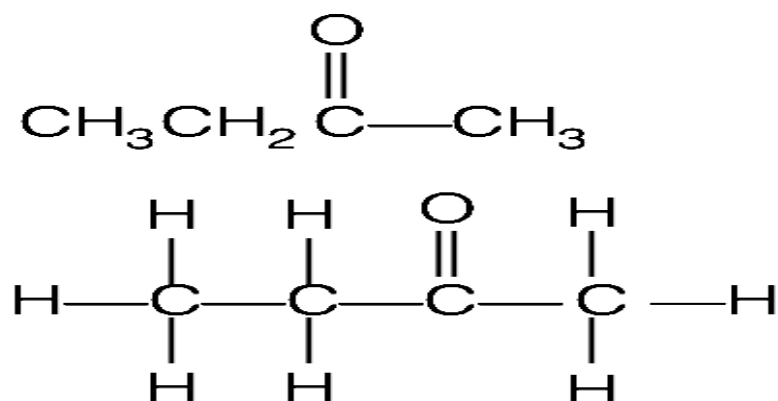
(i) Ethanoic acid



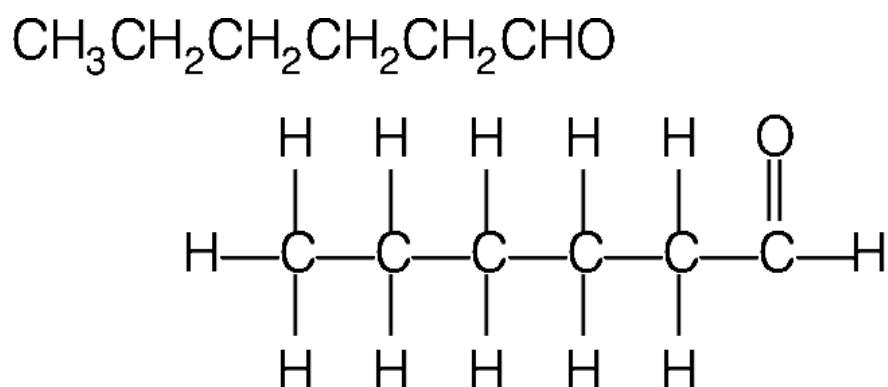
(ii) Bromopentane



(iii) Butanone



(iv) Hexanal.



Yes, isomers of Bromopentane are

(i) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{Br}$

1-bromopentane

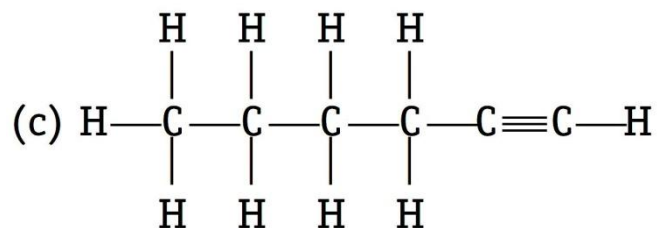
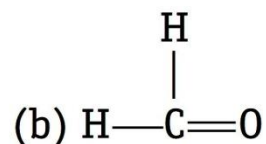
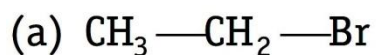
(ii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}(\text{Br})\text{CH}_3$

2-bromopentane

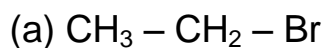
(iii) $\text{CH}_3\text{CH}_2\text{CH}(\text{Br})\text{CH}_2\text{CH}_3$

3-bromopentane

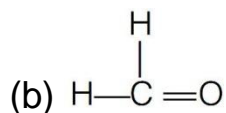
Q5. How would you name the following compounds?



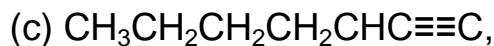
Answer:



Bromoethane (because for two carbons, root word is 'eth')



Formaldehyde or methanal (because for single carbon, root word is 'meth')



1-hexyne (because for 6 carbons, root word is 'hex' and for triple bond suffix is 'yne')
