

Carbon and its compounds

MCQ's

How many unshared pairs of electrons are present on a nitrogen atom in a molecule of ammonia?

- 1
- 2
- 0
- 3

What is the estimated number of carbon compounds whose formulae are known?

- One million
- Two million
- Three million
- One billion

Which of the following compounds is not a hydrocarbon?

- Benzene
- Sodium carbonate
- Butyne
- Butene

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How many double bonds are present in the structure of a molecule of water?

1. 0
2. 1
3. 2
4. 3

How many double bonds are present in a compound with chemical formula C_2H_4 ?

1. 0
2. 1

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3. 2

4. 3

Carbon reacts to attain an electronic configuration similar to which noble gas?

1. Helium

2. Neon

3. Argon

4. Krypton

How many double bonds are present in a molecule of ammonia?

1. 0

2. 1

3. 2

4. 3

Which of the following compounds is the simplest hydrocarbon?

1. Benzene

2. Ethyne

3. Propyne

4. Methane

Which of the following carbon compounds has the highest melting point?

1. Acetic acid

2. Calcium carbonate

3. Ethanol

4. Methane

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Which of the following statements is true with regard to hydrogen?

- (i) Hydrogen reacts to attain a duplet of electrons in its K shell.
- (ii) Hydrogen always forms a single covalent bond.
- (iii) Hydrogen can form a single and a double covalent bond.

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1. (i)
2. (i) and (ii)
3. (i), (ii) and (iii)
4. (i) and (iii)

Two or more different forms of an element in the same physical state are called _____.

1. isomers
2. isotopes
3. allotropes
4. isobars

How many unshared pairs of electrons are present on oxygen atom in a molecule of water?

1. 0
2. 1
3. 2
4. 3

Which of the following molecules consists of a triple covalent bond?

1. H_2
2. O_2
3. N_2
4. NH_3

How many single bonds are present in a compound with formula C_2H_4 ?

1. 0
2. 1

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3.3

4.4

How are covalent compounds formed?

1. By gain of electrons
2. By loss of electrons

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3. By transfer of electrons

4. By sharing of electrons

Which of the following compounds of carbon does not consist of ions?

1. CHCl_3

2. CaCO_3

3. NaHCO_3

4. Ca_2C

Which of the following gas is produced when carbon compounds are burnt in air?

1. CO

2. CO_2

3. NO_2

4. NO

What is the combining capacity of nitrogen in its molecules?

1. 1

2. 2

3. 3

4. 4

Hydrogen gas consists of _____ and helium gas consists of _____.

1. hydrogen atoms; helium atoms

2. hydrogen molecules; helium molecules

3. hydrogen molecules; helium atoms

4. hydrogen atoms; helium molecules

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Diamond and graphite have _____ chemical properties and _____ physical properties.

1. same, same
2. same, different
3. different, different
4. different, same

How many triple bonds are present in a compound with a formula C_2H_2 ?

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1. 1
2. 0
3. 2
4. 3

Which of the following statements is not true?

- (i) In the earth's crust carbon is present in the form of minerals.
- (ii) In the atmosphere very less amount of carbon is present.
- (iii) In the earth's crust very large amount of carbon is present.

1. (i)
2. (i) and (iii)
3. (iii)
4. (ii) and (iii)

How many triple bonds are present in a molecule of water?

1. 0
2. 1
3. 2
4. 3

Which of the following compounds of carbon is not a covalent compound?

1. CH_4
2. C_2H_4
3. C_2H_2
4. Ca_2C

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How many electrons are shared between two oxygen atoms in an oxygen molecule?

1. 2
2. 1
3. 3
4. 4

Hydrogen achieves a _____ of electrons when forms bond with oxygen to form a molecule of water.

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1. triplet
2. octet
3. duplet
4. quartet

The carbon atoms may be linked by which of the following types of bonds?

1. Single bonds only
2. Single bonds and triple bonds only
3. Double bond and triple bonds only
4. Single bonds, double bonds and triple bonds

How many single bonds are present in a compound with a formula C_2H_2 ?

1. 0
2. 1
3. 2
4. 3

Which of the following nutrients is not based on carbon?

1. Carbohydrates
2. Fats
3. Minerals
4. Proteins

Which of the following is the component of biogas and compressed natural gas (CNG)?

1. C_2H_2
2. CH_4
3. C_2H_6
4. C_2H_4

Which of the following structures correctly represents the electron dot structure of a chlorine molecule?

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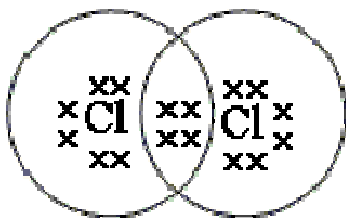
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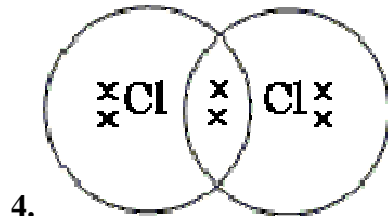
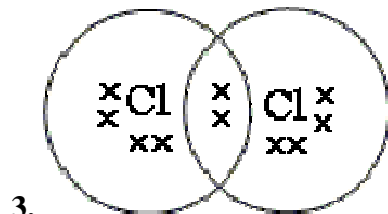
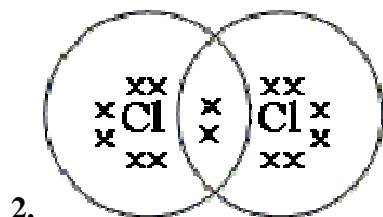
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Which of the following gas is produced when carbon compounds are heated in a limited amount of air?

1. CO
2. CO₂
3. NO₂
4. SO₂

How many electrons does one molecule of ethyne share?

1. 4
2. 6
3. 8
4. 10

What is the maximum number of bonds formed by a single carbon atom?

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1. 1
2. 2
3. 3
4. 4

Food, clothes, medicines, books and all the living structures are based on which of the following elements?

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1. Silicon
2. Carbon
3. Sulphur
4. Nitrogen

Why covalent compounds have low melting and boiling points?

1. Because they do not consist of ions.
2. Because the intramolecular force of attraction is strong.
3. Because the intermolecular force of attraction is weak.
4. Because the covalent bonds are weak.

How many unshared pairs of electrons are present in an oxygen atom in an oxygen molecule?

1. 1
2. 2
3. 3
4. 4

Which of the following structures correctly represents the electron dot structure of a water molecule?

1.

2.

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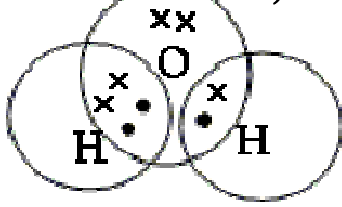
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3.



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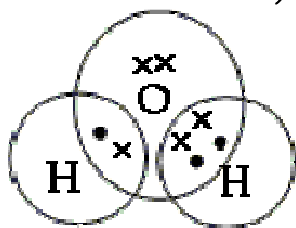
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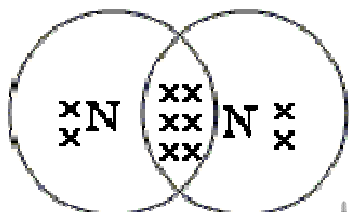
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4.

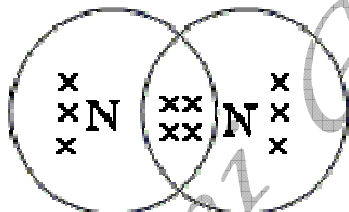


Which of the following structures represents the correct electron dot structure of a molecule of nitrogen?

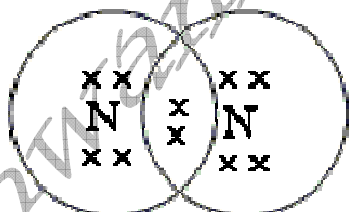
1.



2.



3.



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4.

The compounds of carbon linked by only single bonds between the carbon atoms are known as

1. cyclic compound

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2. aromatic compound
3. saturated compounds
4. unsaturated compounds

How many carbon atoms will be present in an alkyne containing two hydrogen atoms?

1. 0
2. 1
3. 2
4. 3

Two compounds 'A' and 'B' are isomers. Which of the following statements, regarding A and B, is true?

- (i) Both will have same IUPAC name
- (ii) Both will have same structure
- (iii) Both are hydrocarbons
- (iv) Both have same molecular formula

1. (i), (iii) and (iv)
2. (iii) and (iv)
3. (iv)
4. (iii)

Which of the following compounds is an unsaturated hydrocarbon?

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(i) Propene

(ii) Benzene

(iii) Acetylene

- (i) and (iii)
- (i) and (ii)
- (iii)
- (i), (ii) and (iii)

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How many hydrogen atoms are present in a straight chain alkane, with six carbon atoms?

- 6
- 12
- 10
- 14

How many hydrogen atoms are present in 2-Butene?

- 2
- 4
- 6
- 8

How many single bonds are formed by a carbon atom in a molecule of ethane?

- 3
- 4
- 2
- 1

Which of the following bonds is very strong and hence very stable?

- Carbon-Carbon bond

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2. Carbon-Iodine bond
3. Carbon-Silicon bond
4. Carbon-Sulphur bond

How many electrons does one molecule of ethane share?

1. 10

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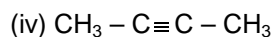
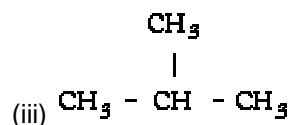
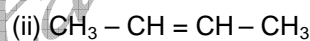
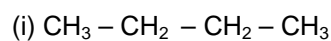
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- 14
- 16
- 18

Which of the following is not an alkyne?

- Butyne
- Propyne
- Methyne
- Pentyne

Which of the following pairs of compounds are isomers?



- (i), (ii) and (iii)
- (i) and (iii)
- (ii) and (iv)
- (ii) and (iii)

In which of the following compounds the number of carbon atoms is half the number of hydrogen atoms?

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- Hexane
- Butene
- Methane
- Propyne

How many single bonds are present in an alkane with molecular formulae C_4H_{10} ?

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- 11
- 12
- 13
- 14

In which of the following compounds carbon to hydrogen ratio is maximum?

- Ethane
- Ethene
- Ethyne
- Octane

How many carbon atoms are present in a straight chain alkane containing 12 hydrogen atoms?

- 2
- 3
- 4
- 5

How many carbon atoms are present in alkene containing four hydrogen atoms?

- 2
- 4
- 6

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4. 8

Which of the following compounds is a saturated hydrocarbon?

1. Benzene
2. Cyclohexane

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3. Cyclohexene

4. Propyne

How many single bonds are present in a molecule of propane?

1. 10

2. 8

3. 6

4. 4

How many minimum number of carbon atoms must be present in an alkene?

1. 1

2. 2

3. 3

4. 4

Which of the following compounds has a ringed structure?

1. Methane

2. Acetylene

3. Propene

4. Benzene

What is the general formula for alkyne?

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1. C_nH_{2n+1}
2. $>2n - 2$
3. C_nH_{2n-1}
4. C_nH_{n-1}

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How many isomers of propane are possible?

- 1
- 2
- 4
- No isomer is possible

Which of the following compounds can be an unsaturated hydrocarbon?

- C_5H_{12}
- C_6H_{14}
- C_4H_{10}
- C_3H_6

Which of the following compounds represents a straight chain alkane?

- C_3H_6
- C_3H_8
- C_4H_8
- C_2H_4

Which of the following compounds is a saturated hydrocarbon?

- $CH_3CH_2CH_2CH_3$

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2. $\text{CH}_3\text{CHCHCH}_3$
3. CH_2CH_2
4. CH_3CHCH_2

Which of the following elements cannot show the property of catenation?

1. Silicon

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- Sulphur
- Carbon
- Hydrogen

What is the general formula for alkenes?

- C_nH_{2n}
- C_nH_{2n+2}
- C_nH_{2n+3}
- C_nH_{2n-1}

Which of the following compounds can be cyclic?

- C_6H_{14}
- C_6H_{12}
- C_3H_8
- C_2H_6

What is the molecular formula of 1-Pentyne?

- C_5H_{10}
- C_5H_{12}
- C_5H_{14}
- C_5H_8

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How many isomers of butane are possible?

- 1
- 2
- 3
- 4

Which of the following compounds may contain multiple bonds?

- CH₄
- C₂H₆
- C₄H₈
- C₃H₈

How many hydrogen atoms are present in a cycloalkane with six carbon atoms?

- 6
- 12
- 10
- 14

Which of the following compounds does not contain any multiple bond?

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- $\text{CH}_2\text{CHCH}_2\text{CH}_3$
- $\text{CH}_3\text{CH}_2\text{CH}_3$
- CH_2CH_2
- CH_2CHCH_3

Which of the following bonds is least stable?

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- Carbon with carbon
- Carbon with oxygen
- Carbon with hydrogen
- Silicon with silicon

How many hydrogen atoms are present in the structure of Benzene?

- 12
- 5
- 6
- 10

Which of the following compounds is first in the alkyne series?

- Methyne
- Ethyne
- Propyne
- Ethylene

How many isomers of ethane are possible?

- 1
- 2
- 0

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4. 3

Which of the following elements is tetravalent?

(i) Carbon

(ii) Silicon

(iii) Chlorine

1. (i)

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- (i) and (ii)
- (i), (ii) and (iii)
- (i) and (iii)

Which of the following is the molecular formula of cyclobutane?

- C_4H_{10}
- C_4H_6
- C_4H_8
- C_4H_4

Which of the following compounds consists of maximum number of hydrogen atoms?

- Hexane
- Hexene
- Hexyne
- Septyne

Which of the following statements is not true regarding alkenes?

- Alkenes are hydrocarbons.
- They are unsaturated compounds.
- They can consist of more than one double bond.
- The number of hydrogen atoms is always double the number of carbon atoms.

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