



CHEMISTRY

BOOKS - ICSE

CARBON AND ITS COMPOUNDS

Test Yourself 1 Fill In The Blanks

1. In free state, carbon occurs as.....and.....



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2. Allotropes have the same.....properties and different.....



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3.allotropes of carbon do not have a definite geometric shape.



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4. Basic unit of a diamond crystal has a.....shape.



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5.is soft and slippery with a basic pattern of hexagonal rings.



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6. In free state, carbon occurs as.....and.....



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7. Allotropes have the same.....properties and different.....



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8.allotropes of carbon do not have a definite geometric shape.



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9. Basic unit of a diamond crystal has a.....shape.



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10.is soft and slippery with a basic pattern of hexagonal rings.

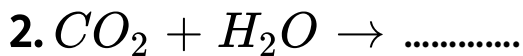


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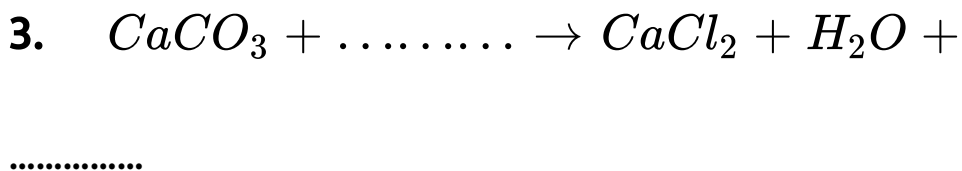
Test Yourself 3 Complete The Following Equations



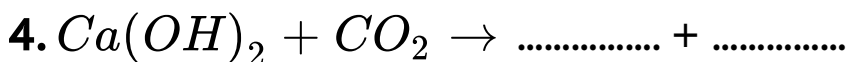
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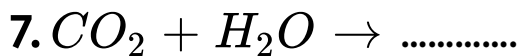
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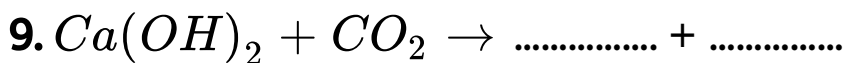
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Exercises A Multiple Choice Questions

1. What is the valency of carbon?

A. 2

B. 4

C. 6

D. 8

Answer: B



2. Following is an amorphous allotrope of carbon.

A. graphite

B. charcoal

C. diamond

D. fullerene

Answer: B



3. In the laboratory preparation of carbon dioxide, carbon dioxide is collected by:

A. downward displacement of water

B. upward displacement of water

C. downward displacement of air

D. upward displacement of air

Answer: D



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4. Carbon dioxide dissolves in water to form

A. sulphuric acid

B. hydrochloric acid

C. carbonic acid

D. carbon monoxide

Answer: C



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5. Following is used as a reducing agent in metallurgy i.e. extraction of metals in blast furnace.

A. carbon dioxide

B. carbon monoxide

C. graphite

D. soot

Answer: A



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6. What is the valency of carbon?

A. 2

B. 4

C. 6

D. 8

Answer: B



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7. Following is an amorphous allotrope of carbon.

A. graphite

B. charcoal

C. diamond

D. fullerene

Answer: B



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8. In the laboratory preparation of carbon dioxide, carbon dioxide is collected by:

A. downward displacement of water

B. upward displacement of water

C. downward displacement of air

D. upward displacement of air

Answer: D



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9. Carbon dioxide dissolves in water to form

A. sulphuric acid

B. hydrochloric acid

C. carbonic acid

D. carbon monoxide

Answer: C



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10. Following is used as a reducing agent in metallurgy i.e. extraction of metals in blast furnace.

A. carbon dioxide

B. carbon monoxide

C. graphite

D. soot

Answer: A



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Exercises B True Or False

1. Name three crystalline allotropes of carbon.



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2. Diamond is hard and a bad conductor of electricity while graphite is soft and a good conductor of electricity. Explain. State the hybridization of carbon in both substances.



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3. Nanotubes are formed by fullerenes allotrope of carbon.



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4. Carbon dioxide is lighter than air.



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5. Incomplete burning of fuels produces carbon monoxide.



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6. Coke and coal are crystalline allotropic forms of carbon.



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7. Diamond is a bad conductor of electricity and heat.



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8. Nanotubes are formed by fullerenes allotrope of carbon.



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9. Carbon dioxide is lighter than air.



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10. Incomplete burning of fuels produces carbon monoxide.





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Exercises C Fill In The Blanks

1. The existence of two or more forms of a compound is called



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2. is a colourless, crystalline and purest form of carbon.



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3. is a good conductor of heat and electricity and used to make electrodes.



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4.exists in the form of buckyball and nanotubes.



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5. Carbon dioxide forms a snowy white solid called at -78°C .



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6. The existence of two or more forms of a compound is called



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7. is a colourless, crystalline and purest form of carbon.



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[View Text Solution](#)

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Exercises D Match The Following

1. What happens when methane reacts with oxygen?



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Exercises E Name The Following

1. Common variety of coal called household coal.



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2. Formation of coal from matter under the earth at high temperature and pressure in the absence of oxygen over millions of years.



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3. Substance used in the preparation of carbon dioxide along with dil. HCl



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4. Name the compound formed by haemoglobin with carbon monoxide.



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5. Substance formed by burning of wood in limited oxygen.



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6. Common variety of coal called household coal.



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7. Formation of coal from matter under the earth at high temperature and pressure in the absence of oxygen over millions of years.



[View Text Solution](#)

8. Substance used in the preparation of carbon dioxide along with dil. HCl



[View Text Solution](#)

9. Compound formed in the body by combining carbon monoxide with haemoglobin.



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10. Substance formed by burning of wood in limited oxygen.



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Exercises F Diagram Based Questions

1. What happens when methane reacts with water?



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2. Write the chemical equation for the reaction occurring between methane and chlorine.



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3. IUPAC name of butyric acid is.



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Exercises G Give Reasons For The Following

1. It is advised not to stand behind a vehicle with a running engine.



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2. Graphite is used for making electrodes.



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3. Dry ice is



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4. Why Carbon dioxide is not collected over water.?



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5. What is the role of activation charcoal in gas masks used in mines ?



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6. Government is promoting use of LPG over traditional cooking methods.



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Exercises H Short Answer Questions

1. What are allotropes?



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2. Name three crystalline allotropes of carbon.



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3. Give an important use of diamond in industries.



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4. Give two important properties of graphite.



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5. What is the structure of buckminster fullerene?



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6. What is destructive distillation of wood?



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7. Define carbonization.



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8. What is soot? How is it formed?



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9. Give two important properties of carbon dioxide.



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10. Why is carbon monoxide said to be a poisonous gas?



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Check Your Progress Answer The Following

1. Name three crystalline allotropes of carbon.



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2. Which is the purest form of carbon?



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3. Which type of bond joins the carbon atoms in a diamond?



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4. Name an allotrope of carbon that is a good conductor of electricity.



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5. How many carbon atoms can fullerenes have?



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Exercise Tick The Most Appropriate Answer

1. Graphite is used as a lubricant because it is

A. a good conductor of heat.

B. a good conductor of electricity

C. soft and slippery.

D. soluble in organic solvents.

Answer:



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2. Following is an amorphous allotrope of carbon.

A. diamond

B. graphite

C. fullerene

D. wood charcoal.

Answer:



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3. A form of carbon that is a good conductor of heat is

A. diamond

B. graphite

C. wood charcoal

D. coke

Answer:



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4. Buckyball is found in

A. dust

B. rocks

C. soot

D. none of these

Answer:



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5. Lampblack is used in making

A. shoe polish

B. black paint.

C. ink

D. all of these

Answer:



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6. Calcium carbonate on heating produces

A. Ca

B. CaO_2

C. Ca_2O

D. CO_2

Answer:



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7. Carbon monoxide reduces Fe_2O_3 to

A. Fe

B. Fe_2O

C. FeO_2

D. none of these

Answer:



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Exercise Fill In The Blanks

1. _____, _____ and _____ are the three crystalline forms of carbon.



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2. Some diamonds have different colours due to ____ in them.



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3. The diamond crystal is a regular _____ having one carbon at each of its _____ corners and one carbon lying at its _____



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4. The molecules of the first fullerene are composed of _____ carbon atoms.



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5. ____ is the purest form of amorphous carbon.



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6. _____ is used in making shoe polish and printer's ink.



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7. Gas carbon and graphite are _____
conductors of electricity.



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8. _____ is produced when metal carbonates or bicarbonates are treated with dilute acids.



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Exercise Write True Or False Correct The False Statements

1. Synthetic diamonds are used in cutting and grinding tools.



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2. Diamond is a good conductor of heat and electricity.



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3. Diamond is the purest form of carbon.



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4. Graphite is used as a lubricant in machinery.



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5. Carbon dioxide is collected by the downward displacement of air.



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6. Carbon dioxide is acidic in nature.



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7. Carbon monoxide combines with the haemoglobin in the red blood cells of our body to form carboxyhaemoglobin.



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Exercise Matching

1. IUPAC name of acetic acid is.



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Exercise Name The Following

1. Existence of an element in more than one form in the same physical state



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2. The bond between carbon atoms in graphite



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3. The process of breakdown of organic substances on heating strongly in the absence of air



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4. The property of attracting gases, liquids or solids to its surface by a solid



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5. A mixture of sodium bicarbonate and tartaric acid



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6. A condition that can cause death by breathing in carbon monoxide



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Exercise Write Balanced Chemical Equations Of The Following

1. Dehydrating cane sugar with concentrated sulphuric acid



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2. Passing carbon dioxide through lime water



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3. Sodium bicarbonate reacting with dil.
sulphuric acid



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4. Carbon dioxide reacting with gaseous
ammonia



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5. Carbon monoxide reacting with iron(III) oxide



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Exercise Answer The Following In Short

1. What do you understand by allotropy ?
Name the allotropic forms of carbon.



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2. Name three crystalline allotropes of carbon.



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3. How are synthetic diamonds prepared?



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4. What is the electrical and thermal conductivity of graphite?



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5. What is fullerene?



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6. What do you understand by destructive distillation?



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7. What is meant by adsorption ?



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8. Why is wood charcoal a better fuel than wood?



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9. How is bone charcoal prepared?



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10. How is coke obtained?



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Exercise Answer The Following In Detail

1. Discuss the structure of diamond.



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2. Explain the arrangement of carbon atoms in graphite.



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3. Diamond And Graphite



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4. Explain the structure of Buckminsterfullerene



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5. Write four uses of coal.



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6. Write four uses of carbon dioxide.



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7. Describe the poisonous nature of carbon monoxide.



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Exercise Draw Diagrams Of The Following

1. Discuss the structure of diamond.



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2. What is destructive distillation of wood?



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3. How would you prepare carbon dioxide in the laboratory? Describe its acidic nature and the action on lime water. What is photosynthesis ?



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Think And Answer

1. Diamonds have extraordinary brilliance.

Explain.



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2. Graphite is soft and slippery and a good conductor of electricity. Why?



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3. Coke is used in the extraction of metals such as zinc and iron from their ores. Why?



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4. Carbon monoxide causes asphyxia. Why?



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