



# CHEMISTRY

## BOOKS - V PUBLICATION

### THE WORLD OF CARBON

#### Question Bank

1. Some statements related to carbon monoxide and carbon dioxide are given.

Classify them accordingly.

- a) Formed as a result of incomplete combustion of carbon compounds.
- b) Aqueous solutions shows acidic nature.
- c) Poisonous gas
- d) Used in fire extinguishers.
- e) Can be used as fuel
- f) Formed as a result of complete combustion of carbon compounds.
- g) can be prepared from carbonates and bicarbonates.
- h) is a component of producer gas and water gas.



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2. a) Write the chemical formula of calcium carbonate.

b) Which gas is produced when calcium carbonate reacts with acids?

c) What is the name of an aqueous solution of this gas?



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3. Graphite, which is an allotrope of carbon, is a conductor of electricity. But diamond, another allotrope of carbon is not a conductor of electricity. Why?



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4. Write the structure of a straight chain and ring hydrocarbon having four carbon atoms.



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5. Arrange the objects as shown in the figure and conduct the experiment. Based on your observations, what is the conclusion that you reach at? '(##VPU\_TTT\_CHE\_IX\_C07-E02\_001\_Q01##)'



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6. Lighted candles of different heights are arranged in a trough as shown in the figure. Pour a saturated solution of sodium bicarbonate (baking soda) in to the trough.

Add a little vinegar to the solution. What do you observe? Give reasons for your observations.'

(##VPU\_TTT\_CHE\_IX\_C07-E02\_002\_Q01##)'



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## 7. Making a fire extinguisher.

Arrange the apparatus as shown in figure. Add vinegar contained in the test tube to the sodium bicarbonate solution by tilting the wash bottle. Introduce the resultant flame to

the burning candle. Record your observation.

What is your inference?

'(##VPU\_TTT\_CHE\_IX\_C07-E02\_003\_Q01##)'



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8. Construct and display the ball and stick models of some hydrocarbons



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**9.** Prepare a write up on the topic " Importance of organic chemistry" and present it in your class.



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**10.** Carbon is a .....



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**11.** The element carbon included in which group.



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**12.** Which carbon form is used to make pencil lead



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**13.** Which gas is evolved when carbonates and bicarbonats are heated?



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**14.** Which bicarbonate is used in fire extinguishers?



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**15.** The gas which turns lime water milky is.....



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16. .... Is known as soda water.



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17. When  $CO_2$  is soluble in water .....acid  
is obtained.



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**18.** Two pure forms of carbon are ..... And

.....



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**19.** .....is the element discovered first in the pure form and also the element which the man learned to make first.



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20. The valency of carbon in every compound is

.....



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21. Carbon atoms have the unique capacity to bond together forming long chains or rings.

This is called .....



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22. The increase in the atmospheric temperature is due to the increase of carbon dioxide in the atmosphere is called .....



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23. The average temperature of the earth and its atmosphere, increases due to the green house effect. This is called as.....



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**24.** Find the relation and fill up suitably:

Diamond: Making ornaments

Graphite: .....



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**25.** From the following choose the statements suitable for carbon dioxide.

i) Formed by the incomplete combustion of substances.

ii) It's aqueous solution is acidic.

iii) Obtained by the reaction between

carbonates and acids.

iv) It is used as a reducing agent in metallurgical processes.



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**26.** Complete the table:



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**27.** Two use of graphite are given below. Which property of graphite is used in them.



a) Used to make pencil lead.

b) Used to make electrodes of dry cells.



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**28.** a) Write the names of two allotropic forms of carbons.

b) Write one difference between the two forms that you have written.



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**29.** A boy is removing dirt from electric plug using a pencil sharpened at both the ends.

a) What danger can happen during this incident?

b) What is the reason for this?



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**30.** Fill in the blanks by identifying the correct relationship.

a) Carbon dioxide: Used in fire extinguishers

Carbon monoxide: ...a.....

b) Diamond: Making ornaments

.....b.....: Make pencil lead



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**31.** a) Graphite is used as an lubricant to reduce friction in certain parts of the engines which become very hot while working. Which property of graphite is made use of here.

b) Carbon has the ability to combine together.

Which property help the carbon to combine together?



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**32.** Graphite is the most stable ccrystalline allotrope of carbon.

- a) Explain the crystal structure of graphite.
- b) Write 2 uses of graphite.



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**33.** Carbon dioxide is a compound of carbon present in the atmosphere.

a) What is the consequence of the tremendous increase in the amount of  $CO_2$  in the atmosphere?

Write down an activity that increases the amount of  $CO_2$  in the atmosphere.



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**34.** Two uses of diamond are given below.

Identify the characteristics of diamond made use of here.

a) Used to make ornaments.

b) Used for cutting glass.



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**35.** What are the reasons for the increase in number of carbon compounds.



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**36.** Some uses of diamond is given below.

Analyse the uses and answer the following questions:

i) Used to make ornaments.

ii) Used for cutting glass.

a) Which are the properties of diamond that made it useful for these purposes?

b) What could be the reason for the peculiar properties of diamond?

c) Write another two properties of diamond.



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**37. a)** Write formation of carbon monoxide in air.

b) Write one use of carbon monoxide.

c) Carbon monoxide if inhaled leads to death.

Write its reason.



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**38. a)** Certain human activities are responsible for global warming. Write one such activity.



b) Why is  $CO_2$  used in fire extinguishers?

c) Write one process of forming  $CO_2$  in earth.



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**39.** Various allotropes are given in the box.

[Diamond, Wood charcoal, sugar charcoal, graphite, lamp black]

a) What is meant by allotropy?

b) Which are the crystalline allotropes of carbon from the compounds given above?

c) Mention one use of any of these crystalline allotropes.



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**40.** If carbon monoxide is inhaled in excess amount, it can cause health problems. Write the reason for your answer.



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**41.** Write the properties of carbon dioxide.



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**42.** Different allotropes of carbon are given below. Match them correctly with the uses of its given below.

(Diamond, graphite, carbondioxide, activated charcoal, carbon monoxide)

- a) conductor of electricity.
- b) Used to make soda water and soft drinks
- c) for cutting glass
- d) used as a reducing agent in metallurgy.



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**43.** Sodium carbonate and sodium bicarbonate are two salts used in daily life.

a) Write down any one use of sodium carbonate.

b) Write down the chemical formula of sodium bicarbonate.

c) Which is the gas formed by the reaction of carbonates with acids.?

d) Write down any one consequences of the increase in the concentration of this gas in the atmosphere.



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**44.** When carbon reacts with oxygen, carbon dioxide gas is produced.

a) Which is the gas obtained if increased the amount of carbon or decreasing the amount of oxygen in this reaction.

b) The dangerous to inhale gas is thus formed.

Give reason.

c) Mention one use of this gas.



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**45.** Two uses of graphite are made. Find the characteristics of graphite that are made use of for the following purposes.

a) Used to make electrodes of dry cells.

b) Used as solid lubricant.



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**46.** Graphite is the most stable crystalline allotrope of carbon.

a) Explain the crystal structure of graphite.

b) Write 2 uses of graphite.



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**47.** Which is the crystalline allotrope of carbon ?

A. Wood charcoal

B. Graphite

C. Lampblack

D. Sugar charcoal

**Answer: A**



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**48.** The hardest allotrope of carbon is .....



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**49.** Find the relation and fill up suitably:

For cutting glass: Diamond

Solid lubricant:.....





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50. Which is the gas present in soda water?

- A. Oxygen
- B. Carbon dioxide
- C. Nitrogen
- D. Chlorine

**Answer: A::B::C::D**



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51. Which among the following is not included in the peculiarity of diamond?

- A. Electric conductor
- B. High refractive index
- C. Transparent
- D. High thermal conductivity

**Answer: C::D**



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**52.** A few facts regarding a gas is given.

i) It is a poisonous gas

ii) It is formed by the incomplete burning of fuels.

a) Which is the gas?

b) What is the name of mixture of this gas and nitrogen?



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**53.** Choose the statements suitable to  $CO_2$

i) Used for making soft drinks.

ii) Used as a reducing agent in metallurgy

iii) Causes formation of carboxy haemoglobin.

iv) Used for making dry ice.



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**54.** a) Which is the common component gas present in the water gas and producer gas the industrially important fuels?

b) Which are the other component present in them?



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**55.** The characteristics of diamond and graphite, the crystalline allotropes of carbon are given. Classify them accordingly.

i) Conducts electricity

ii) Does not conduct electricity

iii) Transparent

iv) Used as a lubricant



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**56.** a)  $CO_2$  is formed when carbon is burnt in air. Then how carbon monoxide is formed?

b) CO is a poisonous gas. How does it react with blood? How it can lead to death?

c) Give any two uses of carbon monoxide.



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**57.** Graphite, which is an allotrope of carbon, is a conductor of electricity. But diamond,

another allotrope of carbon is not a conductor of electricity. Why?



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**58.** When carbon and carbon compounds are burnt in oxygen  $CO_2$  is produced.

a) Specify an activity where plants use  $CO_2$  gas

b) Mention any one use of  $CO_2$ ?

c) Name the solid form of  $CO_2$ .



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**59.** Uses and characteristics of carbon monoxide and carbon dioxide are given.

Classify them suitably.

a) A poisonous gas

b) Used in the manufacture of fertilisers like urea.

iii) Used in the manufacture of washing soda

iv) Used as a reducing agent in metallurgy.



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**60.** List out the characteristics properties of diamond and graphite from the properties given in the box.

[ Very hard, Transparent, Grey in colour, Conductor of electricity, High thermal conductivity, lustrous, High refractive index, Used to make pencil lead]



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