CHEMISTRY

BOOKS - ICSE

CARBON & ITS COMPOUNDS

Exercise

1. Differentiate between the two branches of chemistry - organle chemistry & inorganic chemistry with suitable examples,

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2. State how carbon occurs in the free state and in the combined state,

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3. Define the term 'allotropy'. Give a reason why carbon exhibits allotropy,

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4. Name two crystalline and four amorphous allotropes of carbon

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5. Compare the structure of the crystal of diamond graphite with special reference to the reason for diamond being the hardest natural substance while graphite one of the softest. Compare the electrical & thermal conductivity of the two crystalline allotropes of carbon.

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6. With reference to the structure of the two crystalline allotropes of carbon, state why diamond is inert or unreactive while graphite in comparably more reactive,

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7. State the reasons for

use of diamond as an item of jewellery

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8. Give reasons

Graphite is used as lubricant.

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9. State the reasons for

Use of graphite -as a lining for crucibles used in manufacture of high grade steel

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10. State the reasons for

Use of graphite -as an electrode in electroplating

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11. Wood charcoal an amorphous allotrope of carbon reduces heated metallic oxides to metals. Give a balanced equation to support the statement.

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12. In the laboratory preparation of carbon dioxide by action of a dilute acid on a metallic carbonate give

A balanced equation for the preparation

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13. In the laboratory preparation of carbon dioxide by action of a dilute acid on a metallic carbonate give

A reason for use of a washer bottle containing conc. (H_2SO_4) in the preparation

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14. In the laboratory preparation of carbon dioxide by action of a dilute acid on a metallic carbonate give

A reason for not collecting the prepared gas over water

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15. In the laboratory preparation of carbon dioxide by action of a dilute acid on a metallic carbonate give

A reason for not using dilute sulphuric acid as a reactant in the preparation.

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16. How would you prove experimentally that Carbon dioxide does not support combustion?

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17. How would you prove experimentally that carbon dioxide Is slightly acidic in nature?

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18. Starting from carbon dioxide how would you obtain

A weak acid

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19. Starting from carbon dioxide how would you obtain

A fertilizer?

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20. Starting from carbon dioxide how would you obtain

A highly poisonous gas

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21. Give a balanced equation for the following conversions: [In one or two steps]

Carbon dioxide to carbon.

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22. State how you would convert carbon dioxide to a metallic carbonate using a basic oxide e.g. sodium oxide (Give a balanced equation]

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23. When carbon dioxide is bubbled into lime water, the lime water turns milky and when bubbled in excess the milkiness disappears'. Give balanced equations to support the statement.

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24. Explain the term 'dry ice'. State its application. Give three reasons why carbon dioxide finds application in fire extinguishers.

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25. Using a magnesium ribbon, how would you prove that a given gas jar contains carbon dioxide.

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26. State the function of conc. sulphuric acid in the laboratory preparation of carbon monoxide from oxalic acid.

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27. Why is it dangerous to sleep in a closed room with an open burning heating stove?

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

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29. Convert carbon monoxide to carbon dioxide using two different methods.

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30. State how carbon monoxide finds application in

The metallurgy of iron

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31. State how carbon monoxide finds application in

Preparation of an alcohol. (Give balanced equations for the same]

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32. Name the following:

A crystalline allotrope of carbon built up from a hexagonal unit.

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33. Name the following:

An allotrope of carbon used for the manufacture of coke.

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Objective Type Questions

1. Name the following:

An amorphous allotrope of carbon which floats on water.

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2. Name the following:

An acid formed when carbon dioxide is dissolved in water under pressure.

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3. What is observed when carbon monoxide is passed over heated copper oxide.

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4. Select the correct answer from A, B, C, D & E for each statement given below:

A: Anthracite B: Diamond C: Carbogen D: Urea E: Lampblack

An allotrope of carbon used as a tip for deep boring drills

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5. Select the correct answer from A, B, C, D & E for each statement given below:

A: Anthracite B: Diamond C: Carbogen D: Urea

E: Lampblack

The type of coal with the highest carbon content.

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6. Select the correct answer from A, B, C, D & E for each statement given below:

A: Anthracite B: Diamond C: Carbogen D: Urea

E: Lampblack

An allotrope of carbon, obtained by burning kerosene oil in a limited supply of air.

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7. Select the correct answer from A, B, C, D & E for each statement given below:

A: Anthracite B: Diamond C: Carbogen D: Urea E: Lampblack

A nitrogenous fertilizer obtained from carbon dioxide.

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8. Select the correct answer from A, B, C, D & E for each statement given below:

A: Anthracite B: Diamond C: Carbogen D: Urea E: Lampblack

A compound which finds use for a victim of carbon monoxide poisoning.

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9. Give a balanced equation for the following conversions: [In one or two steps]

Coke to water gas.

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10. Give a balanced equation for the following conversions: [In one or two steps]

Calcium bicarbonate to calcium nitrate using a dilute acid.

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11. Give a balanced equation for the following conversions: [In one or two steps]

Lime water (soln of calcium hydroxide) to calcium bicarbonate,

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12. Give a balanced equation for the following conversions: [In one or two steps]

Carbon dioxide to carbon.

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13. Give a balanced equation for the following conversions: [In one or two steps]

A metallic oxide to calcium carbonate,

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14. Complete the statements by filling the blanks with the correct word from the bracket.

The crystal of.....-(diamond/graphite) is opaque to light and is a good conductor of heat.

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15. Complete the statements by filling the blanks with the correct word from the bracket. A graphite-clay mixture baked at high temperature is used in making.....[lubricants/refractory crucibles]

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16. Complete the statements by filling the blanks with the correct word from the bracket.

Adsorption capacity of wood charcoal is increased by passing..... [carbon dioxide/steam] over wood charcoal, at high temperatures.

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17. Complete the statements by filling the blanks with the correct word from the bracket. ..... (organic/inorganic Chemistry is the Chemistry of carbon compounds mainly of 'Carbon', 'Hydrogen' & 'Oxygen'.

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18. Complete the statements by filling the blanks with the correct word from the bracket. Sodium oxide combines with carbon dioxide to give..... (sodium carbonate/sodium bicarbonate).

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19. Give reasons for the following:

Diamond & graphite are allotropic

modifications of carbon.

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20. Give reasons for the following:

It is dangerous to stand behind a running engine of a vehicle.

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21. Give reasons for the following:

Both $(CO_2 \& SO_2)$ turn lime water milky. Moist

potassium permanganate paper, helps in distinguishing the two gases.

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22. Give reasons for the following:

Carbon monoxide and not carbon dioxide is a highly poisonous gas.

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23. Give reasons for the following:

Lime water finds application for testing both carbon dioxide & carbon monoxide gas individually.

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