



CHEMISTRY

BOOKS - EVERGREEN CHEMISTRY (ENGLISH)

SAMPLE QUESTION PAPER -4

Section I

1. State your observations when :

Dilute hydrochloric acid reacts with sodium sulphite.



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2. NAME:

A gas which dissolves in water to give alkaline solution .



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3. Identify the gas evolved in the following reacts when :

Gas produced on heating sodium nitrate .



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4. Identify the gas evolved in the following reacts when :

Used for ripening of fruits .



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5. Identify the gas evolved in the following reacts when :

The gas evolved on reaction of aluminium with boiling concentrated caustic alkali solution.



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6. From the list given below, select the word(s) required to correctly complete blanks (i) to (ii) in the following passage. The words from the list are to be used only once. Write the answers as (a) (i), (ii), (iii).

Do not copy the passage.

[ammonia, ammonium, carbonate, carbon dioxide, hydrogen, hydronium, hydroxide, precipitate, salt, water):

(i) A solution M turns blue litmus red, so it must contain (i) ions, another solution O turns red litmus blue and hence, must contain (ii) ions.

(ii) When solutions M and O are mixed together, the

products will be (iii) and (iv)

(iii) If a piece of magnesium was put into a solution

M, (v) gas would be evolved.



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7. From the list given below, select the word(s) required to correctly complete blanks (i) to (ii) in the following passage. The words from the list are to be used only once. Write the answers as (a) (i), (ii), (iii).

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9. An element in period 3 whose electron affinity is zero.

A. Neon

B. Sulphur

C. Sodium

D. Argon

Answer: D



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10. When a metal atom becomes an ion : -

A. It loses electrons and is oxidised

B. It gains electrons and is reduced

C. It gain electrons and is oxidised

D. It loses electrons and is reduced

Answer: A



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11. During the electrolysis of water containing dilute sulphuric acid

A. Oxygen

B. Hydrogen

C. Chlorine

D. None of these

Answer: C



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12. Ammonia can be obtained by adding water to Magnesium nitrate.

A. Ammonium chloride

B. Ammonium nitride

C. Magnesium nitride

D. Magnesium nitrate

Answer: C



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13. Choose the most appropriate answer from the following options :

Identify the statement that is incorrect about alkanes

A. They are hydrocarbons

B. There is a single both substitution as well as addition reactions.

C. They can undergo both substitution as well as addition reaction .

D. On complete combustion they produce carbon dioxide and water .

Answer: C



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14. Identify the gas in the following:

This gas is used for welding purpose.



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15. Identify the gas in the following :

Gas produced by the action of dilute nitric acid on zinc .



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16. Identify the following substances :

An alkaline gas which gives dense white fumes with hydrogen chloride.



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17. Identify the gas in the following :

Gas produced on reaction of dilute sulphuric acid with a metallic sulphite .



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18. Name - The gas which turns acidified potassium dichromate clear green.



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19. Write a balanced chemical equation for the following:

Action of concentrated sulphuric acid on carbon.

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20. Give the balanced equations for the following reactions .

Ammonium hydroxide is added to iron (III) chloride solution .

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21. Give the balanced equations for the following reactions .

Red lead is warmed with concentrated hydrochloric acid .



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22. Write equations for the following reactions :

Aluminium nitride and water.



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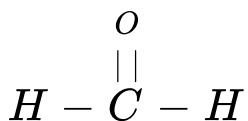
23. Give the balanced equations for the following reactions .

Ethyne reacts with hydrobromic acid .



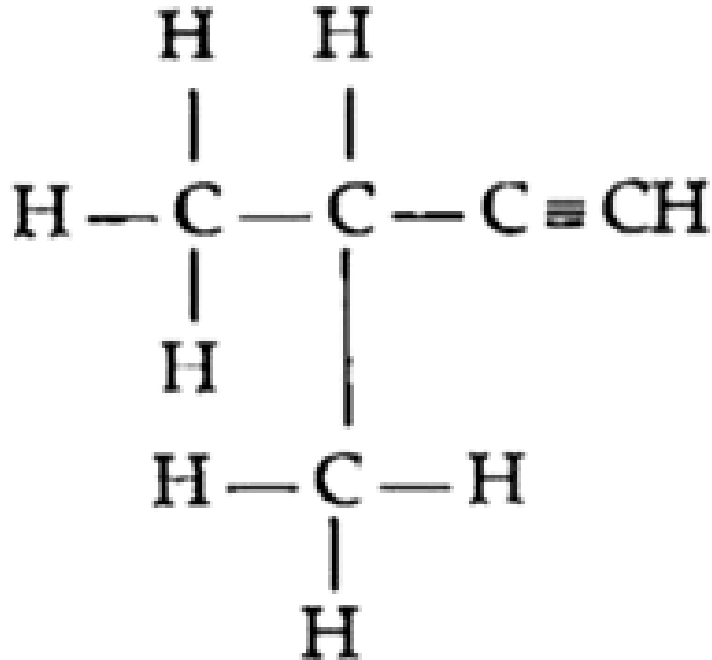
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24. Write the IUPAC name of the following compounds :



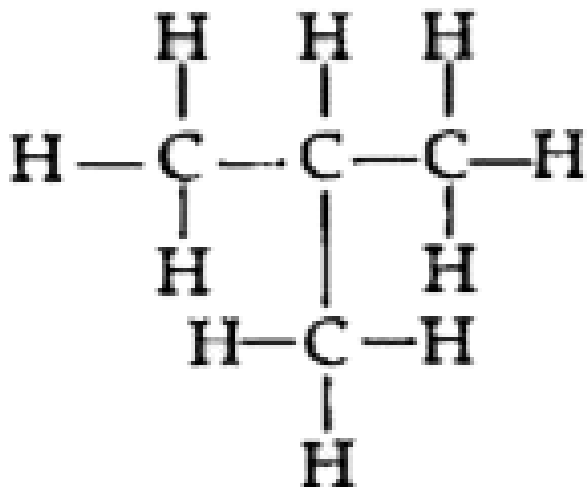
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25. Write the IUPAC name of the following compounds :



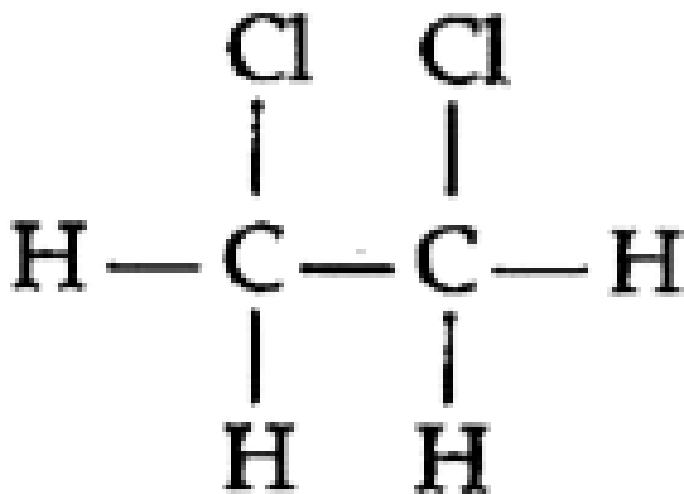
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26. Write the IUPAC name of the following compounds :



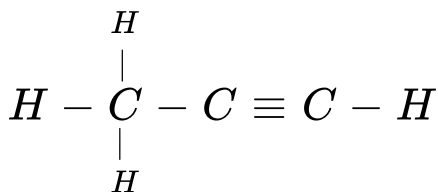
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27. Write the IUPAC name of the following compounds :



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28. Write the IUPAC name of the following compounds :



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29. Match the column A with column b .

S. No.	Column A	Column B
(i)	Sodium chloride	Increases
(ii)	Ammonium ion	Covalent bond
(iii)	Electronegativity across a period	Ionic bond
(iv)	Non-metallic character down the group	Covalent and co-ordinate bond
(v)	Carbon tetrachloride	Decreases



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30. State your observation in the following case:

When excess sodium hydroxide is added to calcium nitrate solution.



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31. State your observation in each of the following cases: At the cathode when acidified aqueous copper sulphate solution is electrolyzed with copper electrodes.



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32. What would you observe in each of the following cases?

When carbon monoxide is passed over heated copper oxide.



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33. Yellow colour appears when concentrated nitric acid is left standing in an ordinary glass bottle.

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34. State what would you observe when :

The salt ferric chloride is exposed to the atmosphere.

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35. Identify the gas evolved in the following reacts when :

Dilute hydrochloric acid reacts with sodium sulphide

.



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36. Identify the gas evolved in the following reacts

when :

A gas which dissolves in water to give alkaline solution .



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Used for ripening of fruits .



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The gas evolved on reaction of aluminium with boiling concentrated caustic alkali solution.



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39. From the list given below, select the word(s) required to correctly complete blanks (i) to (v) in the following passage . The words from the list are to be used only once. Write the answers as (i) a,b. (ii) c. d(iii) e and so on . Do not copy the passage .

[hydrogen , hydronium , salt , water precipitate , hydroxide , ammonia , ammonium , carbonate , carbon dioxide].

(i) A solution M turns blue litmus red, so it must contain (a)_____ions, another solution O turns red litmus blue and hence , must contain (b)_____ ions.



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40. An element in period - 3 whose electron affinity is zero _____.

A. Neon

B. Sulphur

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D. Argon

Answer: D



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41. When a metal atom becomes an ion :

A. It loses electrons and is oxidised

B. It gains electrons and is reduced

C. It gain electrons and is oxidised

D. It loses electrons and is reduced

Answer: A



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42. During the electrolysis of concentrated hydrochloric acid, the product obtained at anode is _____.

A. Oxygen

B. Hydrogen

C. Chlorine

D. None of these

Answer: C



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43. Ammonia can be obtained by adding water to

_____.

A. Ammonium chloride

B. Ammonium nitride

C. Magnesium nitride

D. Magnesium nitrate

Answer: C



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44. Identify the statement that is incorrect about alkanes :

A. They are hydrocarbons

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Gas produced by the action of dilute nitric acid on

Copper .



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An alkaline gas A which gives dense white fumes with hydrogen chloride .



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Gas produced on reaction of dilute sulphuric acid with a metallic sulphite .





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Gas which turns acidified Potassium dichromate clear green .



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Action of concentrated sulphuric acid on carbon .



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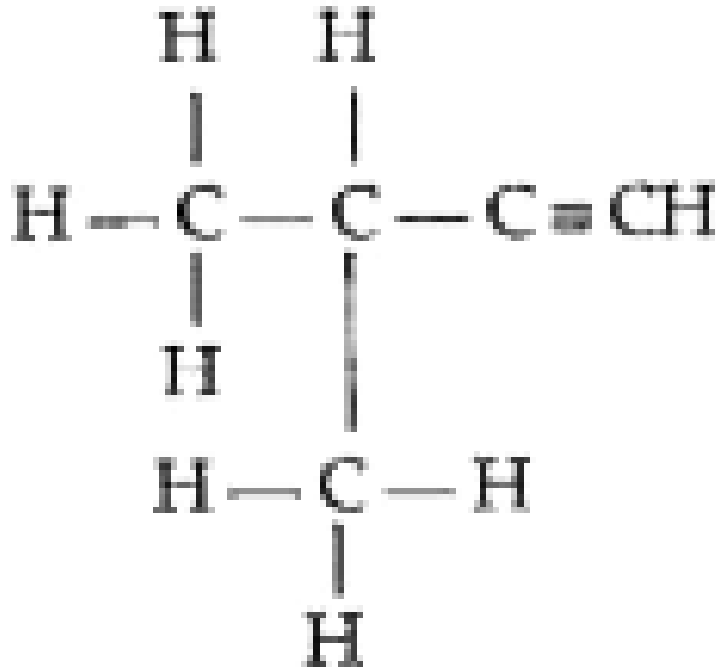
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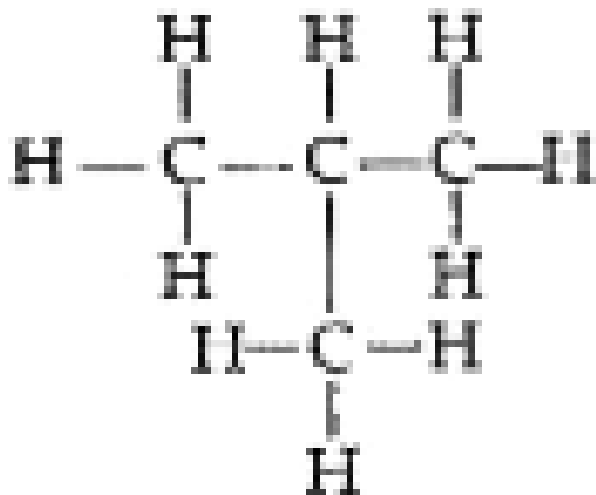
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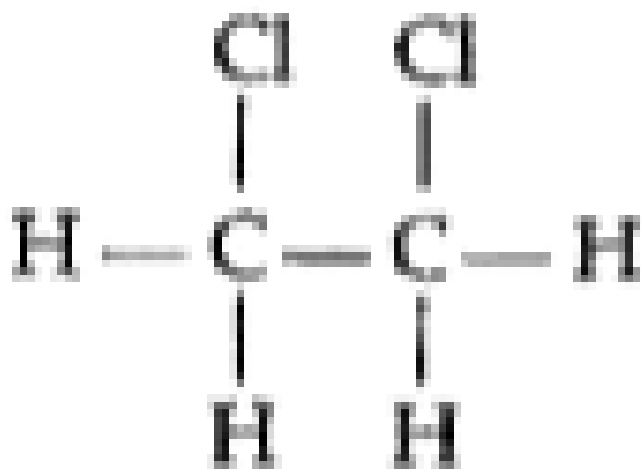
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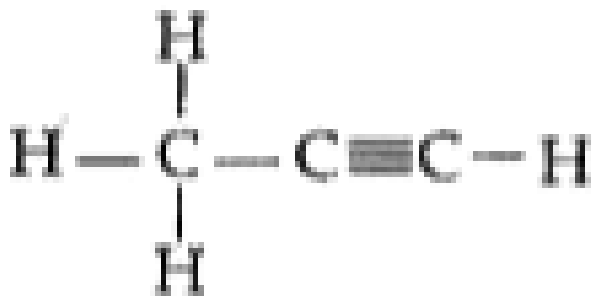
57. Write the IUPAC name of the following compounds :





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58. Write the IUPAC name of the following compounds :



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59. Match the column A with column b .

S.No.	Column A	Column B
(i)	Sodium chloride	Increases
(ii)	Ammonium ion	Covalent bond
(iii)	Electronegativity across a period	Ionic bond
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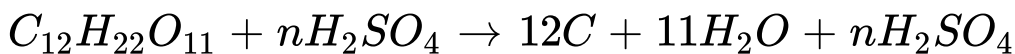
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1. Some properties of sulphuric acid are listed below.

Choose the property A, B, C or D which is responsible

for the reactions (i) to (v). Some properties may be

repeated :



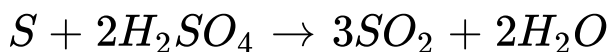
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2. Some properties of sulphuric acid are listed below.

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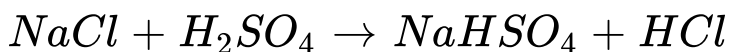
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3. Some properties of Sulphuric acid are listed below . Choose the property a,b,c and d which is responsible for the reaction (i) to (v) .

Some properties may be repeated :

(a) Acid (b) Dehydrating agent (c) Non - volatile acid

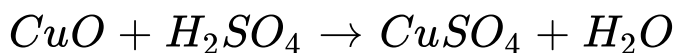
(d) Oxidising agent.



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4. Some properties of sulphuric acid are listed below.

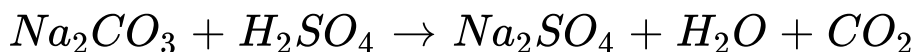
Choose the property A, B, C, or D which is responsible for the reactions . Some properties may be repeated:



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5. Some properties of sulphuric acid are listed below.

Choose the property A, B, C or D which is responsible for the reactions (i) to (v). Some properties may be repeated :





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6. The following is a sketch of an electrolytic cell used in the extraction of aluminium :

(i) What is the substance of which the electrodes of aluminium:

(ii) At which electrode (A or B) is the aluminium formed

(iii) What are the two aluminium compounds in the electrolyts C.

(iv) Why is it necessary for electrode B to be continuously replaced





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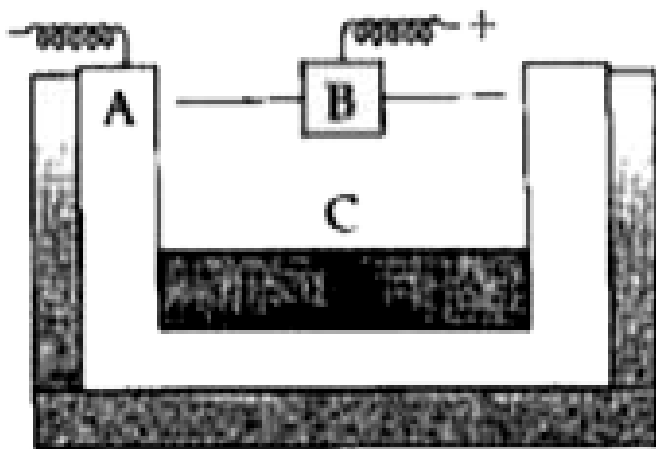
(iv) Why is it necessary for electrode B to be continuously replaced



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10. Following is the sketch of electrolytic cell used in the extraction of aluminium :

Name the ore used in extraction of aluminium .



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11. Copy and Complete the following table related to electrolysis :

S.No.	Name of electrolyte	Name of Cathode	Name of Anode	Product at Cathode	Product at Anode
(i)	CuSO_4 (aq)	Copper	Copper	—	—
(ii)	PbBr_2 (molten)	Platinum	Platinum	—	—



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12. Differentiate between the terms strong electrolyte and weak electrolyte. (stating any two differences)



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13. Choose the most appropriate answer from the following list of oxides which fit the description.

Each answer may be used only once :

[SO_2 , SiO_2 , Al_2O_3 , MgO , CO , Na_2O]

A basic oxide.

A. A basic oxide

B. An oxide which dissolves in water forming an acid

C. An amphoteric oxide

D. A covalent oxide of a metalloid

Answer:



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14. Calculate the percentage of Nitrogen in aluminium nitride . (Al = 27,N = 14) .



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15. A compound has the following percentage composition by mass: Carbon - 54.55%, Hydrogen - 9.09% Its vapour density is 50. Find the Empirical formula. (H = 1; C = 12; O = 16).



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16. Dilute nitric acid is generally considered a typical acid but not so in its reaction with metals. Explain ?

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17. Concentrated nitric acid appears yellow when it is left standing in a glass bottle. Explain ?

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18. Explain the following :

All glass apparatus is used in the laboratory preparation of nitric acid .



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19. With respect to the laboratory preparation of hydrochloric acid answer the following question :

Name the substance A and give its use .



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20. With respect to the laboratory preparation of hydrochloric acid answer the following question :

Which method is used to collect hydrogen chloride gas ?



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21. With respect to the laboratory preparation of hydrochloric acid answer the following question :

Give the reaction which takes place in round bottom flask below $200^{\circ}C$?



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22. In the laboratory preparation of hydrochloric acid, HCl gas is dissolved in water.

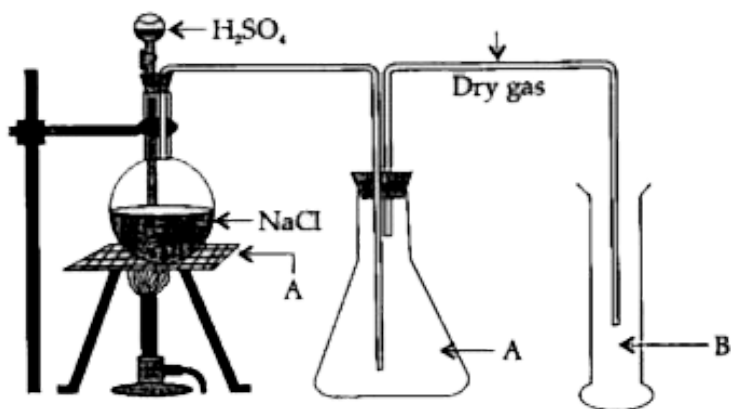
Write the chemical equations for the laboratory preparation of HCl gas when the reactants are:

(A) below $200^{\circ}C$ (B) above $200^{\circ}C$

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23. With respect to the laboratory preparation of hydrochloric acid answer the following question :

How can hydrochloric acid be prepared from substance B ?



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24. Name the method used for obtaining ammonia on a large scale .



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25. What is the actual ratio of the reactants ?



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26. The temperature used is $450^{\circ}C$. Explain why ?

(A) A lower temperature is not used .

(B) A high temperature is not used .



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27. Write the reaction of sodium with water.



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28. An element X belongs to 3rd period and group II of the periodic table . State :
the number of valence electrons.



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29. An element X belongs to 3rd period and group II of the periodic table . State :
the valency .



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30. An element X belongs to 3rd period and group II of the periodic table . State :
Whether it is a metal or a non - metal .



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31. An element X belongs to 3rd period and group II of the periodic table . State :

Name of the elements.



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32. State modern periodic law of classification of elements.



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33. Atomic size increases down a group of the periodic table. Explain.



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34. Give reason why ?

People suffering from acidity are advised to drink cold milk .



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35. Give reasons why :

Sodium chloride will conduct electricity only in fused or aqueous solution state.



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36. Give reason why ?

Anhydrous HCl is a poor conductor while aqueous HCl is an excellent conductor .



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37. Give reasons for the following :

(i) Methane does not undergo addition reactions, but ethene does.

(ii) Ethyne is more reactive than ethane.

(iii) Hydrocarbons are excellent fuels.



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38. Write balanced equation for the following:

(i) Preparation of ethane from sodium propionate.

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39. Write the equation for the ethene from iodoethane

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40. Write the equation for the laboratory preparation of ethyne (acetylene) from calcium carbide.



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41. Give chemical equation for:

The laboratory preparation of methane from sodium acetate.



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42. Define isomerism.



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43. Give the IUPAC name of the isomer C_4H_{10} which has a branched chain.

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44. Compare the properties of covalent and electrovalent compounds on the following .

(A) solubility .

(B) Structure .

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45. Draw an electron dot diagram to show the structure of hydronium ion. State the type of bonding present in it.

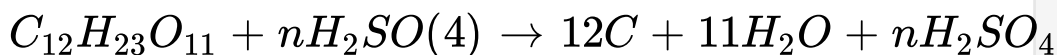


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46. Some properties of Sulphuric acid are listed below . Choose the property a,b,c and d which is responsible for the reaction (i) to (v) .

Some properties may be repeated :

- (a) Acid (b) Dehydrating agent (c) Non - volatile acid
(d) Oxidising agent.





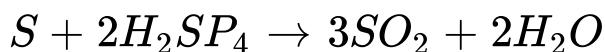
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47. Some properties of Sulphuric acid are listed below. Choose the property a,b,c and d which is responsible for the reaction (i) to (v).

Some properties may be repeated :

(a) Acid (b) Dehydrating agent (c) Non - volatile acid

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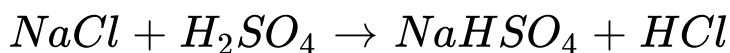


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48. Some properties of Sulphuric acid are listed below . Choose the property a,b,c and d which is responsible for the reaction (i) to (v) .

Some properties may be repeated :

- (a) Acid (b) Dehydrating agent (c) Non - volatile acid
(d) Oxidising agent.



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49. Following is the sketch of electrolytic cell used in the extraction of aluminium :

What is the substance for which the electrodes A and B are made ?



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50. Following is the sketch of electrolytic cell used in the extraction of aluminium :

At which electrode (A or B) is the aluminium deposited ?



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51. Following is the sketch of electrolytic cell used in the extraction of aluminium :

What are the two aluminium compounds in the electrolyte C?



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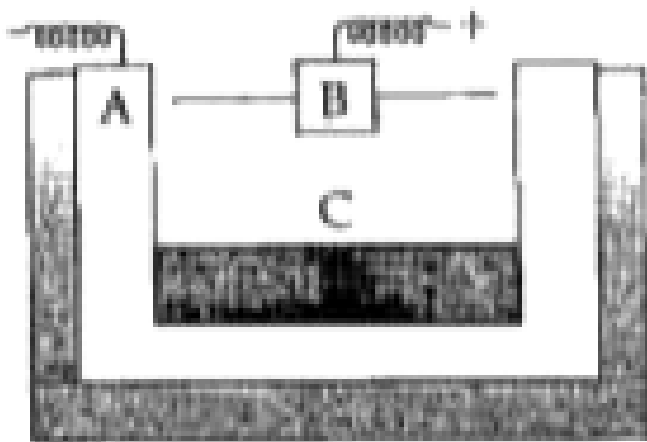
Why is it necessary for electrode B to be continuously replaced ?



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55. Differentiate between the terms strong electrolyte and weak electrolyte (any two).



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56. Choose the most appropriate answer from the following list of oxides which fit the description .

Each answer may be used only once .

[SO₂, SiO₂, Al₂O₃, MgO, Co, Na₂O]

A. A basic oxide

B. An oxide which dissolves in water forming an acid

C. An amphoteric oxide

D. A covalent oxide of a metalloid

Answer:



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57. Calculate the percentage of Nitrogen in aluminium nitride . (Al = 27,N = 14) .



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58. The Compound A has the following percentage composition by mass : Carbon 26.7% , Oxygen 71.1% , Hydrogen 2.2 %

Determine the empirical formula of A .

(H = 1, C = 12 , O = 16). If the relative molecular mass of A is 90, what is the molecule for of A ?



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59. Explain the following :

Dilute nitric acid is generally considered a typical acid but not so in its reaction with metals .



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Concentrated nitric acid appears yellow when it is left standing in a glass bottle .



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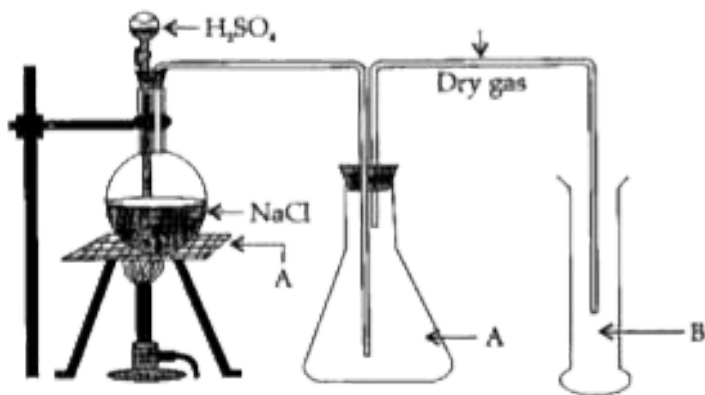
Why is the temperature of the reaction mixture kept below $200^{\circ}C$?



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69. The temperature used is $450^{\circ}C$. Explain why ?

(A) A lower temperature is not used .

(B) A high temperature is not used .



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70. Write the reaction .



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71. An element X belongs to 3rd period and group II of the periodic table . State :

Name of the elements.



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72. State modern period law.



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73. Give reason why ?

The atomic size increases as we move down the group .



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74. Give reason why ?

People suffering from acidity are advised to drink cold milk .



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75. Give reason why ?

Sodium chloride will conduct electricity only in fused or aqueous solution state .



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76. Give reason why ?

Anhydrous HCl is a poor conductor while aqueous HCl is an excellent conductor .



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77. Give reason why ?

Ethyne is more reactive than ethane .



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78. Write the equations for the following laboratory preparations :

Ethane from sodium propionate .



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79. Write the equations for the following laboratory preparations :

Ethene from iodoethane .



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80. Write the equations for the following laboratory preparations :

Ethyne from calcium carbide.



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81. Write the equations for the following laboratory preparations :

Methane from sodium acetate .





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82. Define isomerism.



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83. Give the IUPAC name of the isomer C_4H_{10} Which has a branched chain.



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84. Compare the properties of covalent and electrovalent compounds on the following .

(A) solubility .

(B) Structure .



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85. Draw an electron dot diagram to show the structure of hydronium ion. State the type of bonding present in it .



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