CHEMISTRY

BOOKS - EVERGREEN CHEMISTRY (ENGLISH)

SELF ASSESSMENT PAPER 2

Section I

1. Identify the gas evolved when

Sulphur is treated with conc. nitric acid.

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2. Identify the True/False statement

A few crystals of KNO_3 are heated in a hard glass test tube and Nitrogen gas is obtained.

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3. Identify the gas evolved when

Sodium propanoate is treated with soda lime.

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4. Identify the gas evolved when

Magnesium reacts with very dilute nitric acid.

5. Identify the gas evolved when

By the action of oxygen on metal sulphides.

6. Electrolysis is the passage of _____ through a liquid or a solution accompanied by a chemical change.

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7. A base is a compound which is soluble in water contains ___ ions.

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8. Fill in the blanks from the choices given below:

Across a period, the ionization potential ..... (increases, decreases, remains same).

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9. Ethanol can be converted to ethene which can then be changed to ethane.

Choose the correct word or phrase from the brackets to complete the following sentences:

The conversion of ethanol to ethene is an example of _____(dehydration / dehydrogenation)

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10. In a thermite mixture, aluminium _____ to iron (III) oxide.

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11. State your observation from the following:

Barium chloride solution is mixed with zinc sulphate solution.

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12. State your observation when :

Concentrated Sulphuric acid is added to Sugar Crystals.

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13. State one observation for each of the following:

Sodium hydroxide solution is added to ferric chloride solution at first a little and then in excess.

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14. State one appropriate observation for each of the following: Electricity is passed through molten lead bromide.

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15. State your observation from the following:

When ammonium hydroxide solution is added to Iron (II) sulphate solution

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16. Choose the correct answer:

Ionisation Potential increases over a period from left to right because the:

A. Atomic radius increases and nuclear charge increases

B. Atomic radius decreases and nuclear charge decreases

C. Atomic radius increases and nuclear charge decreases

D. Atomic radius decreases and nuclear charge increases

Answer:

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17. Which of these will act as a non-electrolyte?

A. Liquid carbon tetrachloride

B. Acetic acid

C. Aqueous solution of sodium chloride

D. Aqueous solution of potassium chloride

Answer:

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18. The vapour density of carbon dioxide [C=12,O=16]

A. 12

B. 16

C. 44

D. 22

Answer:

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19. Hydrogen chloride gas being highly soluble in water is dried by:

A. Anhydrous Calcium chloride

B. Phosphorus pentoxide

C. Quick lime

D. Concentrated Sulphuric acid

Answer:

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20. The number of C-H bonds in ethane molecule are :

A. four

B. Eight

C. Six

D. Ten

Answer:

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21. Write the balanced chemical equation for each of the following reactions:

Sodium thiosulphate is reacted with dilute hydrochloric acid

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22. Write the balanced chemical equation for each of the following reactions :

Calcium bicarbonate reacts with dilute hydrochloric acid.

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23. Write the balanced chemical equation for each of the following reactions :

Zinc oxide is treated with sodium hydroxide solution.

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24. Write the balanced chemical equation for each of the following reactions :

Magnesium metal is treated with hydrochloric acid.

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25. Write the balanced chemical equation for each of the following reactions :

Lead nitrate is heated in a dry test tube.

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26. Find the total percentage of magnesium in magnesium nitrate crystals $\left[Mg(NO_3)_2.6H_2O\right]$

[Mg=24, N=14, O=16,H-1]

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27. Calculate the mass of limestone required to produce 112 kg of quicklime by burning it.

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28. Give the structural formula for the following:

Methanoic acid

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29. Give the structural formula for the following:

Ethanal

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30. Give the structural formula for the following:

Propene

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31. Give the structural formula for the following:

2,2-dimethylpropane

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32. Give the structural formula for the following:

Pentan-2-ol Al

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33. State true/false:

A bond formed by a shared pair of electrons with both electrons coming from the same atom is a covalent bond.

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34. State True/False

A reaction in which hydrogen of an alkane is replaced by a halogen is known as Halogenation reaction

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35. Give suitable chemical terms for the following:

The amount of energy released by the

addition of electron to the outermost shell of an atom in its isolated gaseous state.

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36. Name the

The property possessed by metals by which they can be beaten into sheets

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37. Give suitable chemical terms for the following:

Certain water soluble substances, when exposed to the atmosphere at ordinary temperatures, absorb moisture from the atmospheric air becomes moist and dissolve in the absorbed water.

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Section Ii

1. A metal article is to be electroplated with silver. The electrolyte selected is sodium argentocyanide.

What kind of salt is sodium argentocyanide?

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2. A metal article is to be electroplated with silver. The electrolyte selected is sodium argentocyanide.

Why is it preferred to silver nitrate as an electrolyte?

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3. A metal article is to be electroplated with silver. The electrolyte selected is sodium argentocyanide.

State one condition to ensure that the deposit is smooth, firm and long lasting.

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4. A metal article is to be electroplated with silver. The electrolyte selected is sodium

argentocyanide.

Write the reaction taking place at the cathode.

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5. A metal article is to be electroplated with silver. The electrolyte selected is sodium argentocyanide.

Write the reaction taking place at the anode.

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6. The questions below are related to the manufacture of ammonia.

Name the process.

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7. The questions below are related to the manufacture of ammonia.

In what ratio must the reactants be taken?

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8. The questions below are related to the manufacture of ammonia.

Name the catalyst used.

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9. The questions below are related to the manufacture of ammonia.

Give the equation for the manufacture of ammonia.

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10. Write a relevant equation , to show that ammonia acts as a reducing agent.

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11. Soluble salts are prepared by whereas insoluble salts are generally prepared by____

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12. Hygroscopic substances are also called as_____

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13. _____ is a green coloured insoluble salt.

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14. $FeCl_3$ s stored in air tight bottles because it is a _____ substance.

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15. _____ indicators can differentiate between the acidic or basic solutions of different pH values.

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

Draw a diagram to show the arrangement used for the absorption of HCI in water.

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17. In the laboratory preparation of hydrochloric acid, HCl gas is dissolved in water. Why is such an arrangement necessary ? Give two reasons.

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18. 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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19. A compound has the following percentage composition by mass: carbon 14.4%, hydrogen

1.2% and chlorine 84.5%. Determine the empirical formula of this compound. Work correct to 1 decimal place. (H = 1, C = 12, CI = 35.5)

20. The relative molecular mass of this compound is 168, so what is its molecular formula?

21. An element Z has atomic number 16. Answer the following questions on Z:

State the period and group to which z belongs.

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22. An element Z has atomic number 16. Answer the following questions on Z:

Is Z a metal or a non-metal ?

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23. An element Z has atomic number 16. Answer the following questions on Z:

State the formula between Z and Hydrogen.

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24. An element Z has atomic number 16. Answer the following questions on Z: What kind of bonding is formed between the compound thus formed?

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25. Three different electrolytic cells A, B and C are connected in separate circuits. Electrolytic cell A contains sodium chloride solution. When the circuit is completed, a bulb in the circuit glows brightly. Electrolytic cell B contains acetic acid solution and in this case the bulb in the circuit glows dimly. The electrolytic cell C contains sugar solution and the bulb does not glow. Give a reason for each of these observations.

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26. Here is an electrode reactin :

$Cu \rightarrow Cu^{2+} + 2e$

At which electrode (anode or cathode) would such a reaction take place ? Is this an example of oxidation or reduction ?

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27. A solution contains magnesium ions $\left(Mg^{2+}\right)$,iron (II) ions $\left(Fe^{2+}\right)$ and copper ions $\left(Cu^{2+}\right)$. On passing an electric current

through this solution which ions will be the first to be discharged at the cathode? Write the equation for the cathode reaction

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28. Give reason why?

The blue colour of the Copper sulphate solution persists even during its electrolysis using copper electrodes.

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29. Give reason why?

It is dangerous to dilute the acid by adding water to conc. H_2SO_4.

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30. Give reasons why?

Alkali metals are good reducing agent.

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31. Give reason why?

Sugar solutions do not conduct electricity.

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32. Give reason why?

Conc. H_2SO_4 is not a drying agent for H_2S?

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33. Give a balanced chemical equations for the action of sulphuric acid on each of the following:

(A) Potassium hydrogen carbonate

(B) Sulphur

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34. Give two industrial uses of sulphuric acid.

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35. What happens when conc. sulphuric acid is added to a lump of blue Vitriol? Give a reaction to justify your answer.

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36. Explain why only all glass apparatus should be used for the preparation of nitric acid by heating concentrated sulphuric acid and potassium nitrate.

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37. Write a chemical equation to illustrate the acidic nature of nitric acid.

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38. Equation for the reaction when compound A is bubbled through bromine dissolved in carbon tetrachloride is as follows:

$$A \xrightarrow{Br_2 / CCl_4} \underset{\displaystyle CH_2Br}{\overset{\displaystyle CH_2\,Br}{|}}$$

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39. Equation for the reaction when compound A is bubbled through bromine dissolved in carbon tetrachloride is as follows:

$$A \xrightarrow{Br_2 / CCl_4} \underset{\underset{CH_2Br}{|}}{CH_2 Br}$$

Draw the structure of A.

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40. Equation for the reaction when compound A is bubbled through bromine dissolved in carbontetrachloride is as follow:

$$A \xrightarrow{Br_2 / CCl_4} \begin{array}{l} CH_2Br \\ | \\ CH_2Br \end{array}$$

(i) Draw the structure of A .

(ii) State your observation during this reaction.

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41. State how the following conversions can be carried out:

Ethyl chloride to ethene.

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42. State how the following conversions can be carried out:

Ethyl alcohol to ethene.

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43. Ethane and ethene are both hydrocarbons. Ethane undergoes (i) _____reactions but ethene undergoes (ii) _____ reactions. The conversion of ethene to ethane is an example

of (iii) _____ reaction and is carried out in the presence of (iv) _____ as a catalyst.

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44. Write the IUPAC names of the following:

$CH_3 - CH_2 - CH = CH_2$

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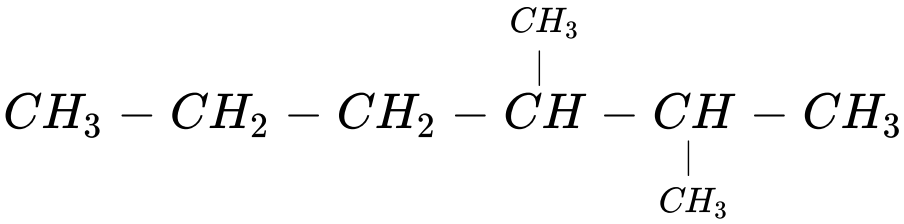
45. Write the IUPAC names of the following:



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