



# CHEMISTRY

## BOOKS - EVERGREEN CHEMISTRY (ENGLISH)

### CHEMISTRY 2014

#### Section I

1. 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: D**



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2. Choose the correct answer from the options given below :

A compound X consists of only molecules.

Hence, X will have :

A. A crystalline hard structure.

B. A low melting point and low boiling point.

C. An ionic bond.

D. A strong force of attraction between its molecules.

**Answer: B**



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3. When fused lead bromide is electrolysed we observe: [A] a silver grey deposit at anode and a reddish brown deposit at cathode; [B] a silver grey deposit at cathode and a reddish brown deposit at anode; [C] a silver grey

deposit at cathode and reddish brown fumes at anode ; [D] silver grey fumes at anode and reddish brown fumes at cathode

A. a silver grey deposit at anode and a reddish brown deposit at cathode.

B. a silver grey deposit at cathode and a reddish brown deposit at anode.

C. a silver grey deposit at cathode and reddish brown fumes at anode.

D. silver grey fumes at anode and reddish brown fumes at cathode.

**Answer: C**



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**4.** The main ore used for the extraction of iron is

A. Haematite

B. Calamine

C. Bauxite

D. Cryolite

**Answer: A**



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5. Heating an ore in a limited supply of air or in the absence of air at a temperature just below its melting point is known as:

A. smelting

B. ore dressing

C. calcination

D. bessemerisation

**Answer: C**



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**6.** Choose the correct answer from the options given below :

If an element A belongs to Period 3 and Group II, then it will have :



A. 3 shells and 2 valence electrons.

B. 2 shells and 3 valence electrons.

C. 3 shells and 3 valence electrons.

D. 2 shells and 2 valence electrons.

**Answer: A**



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7. Choose the correct answer from the options given below :

The molecule containing a triple covalent bond is : ammonia, methane, water, nitrogen

A. ammonia

B. methane

C. water

D. nitrogen

**Answer: D**



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8. The electrolyte used for electroplating an article with silver is :

A. silver nitrate solution

B. silver cyanide solution

C. sodium argentocyanide solution

D. nickel sulphate solution.

**Answer: C**



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9. Aluminium powder is used in thermite welding because :

- A. it is a strong reducing agent.
- B. it is a strong oxidising agent.
- C. it is corrosion resistant.
- D. it is a good conductor of heat.

**Answer: A**



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10. The IUPAC name of acetylene is :

A. propane

B. propyne

C. ethene

D. ethyne.

**Answer: D**



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**11.** Fill in the blank from the choices given within bracket:

The basicity of Acetic Acid is ..... (3, 1, 4)



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**12.** Fill in the blanks from the choices given within brackets:

(i) The compound formed when ethanol reacts with sodium is ..... (sodium ethanoate, sodium ethoxide, sodium propanoate)





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**13.** Fill in the blank from the choices given within bracket:

Quicklime is not used to dry HCl gas because ..... (CaO is alkaline, CaO is acidic, CaO is neutral)



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**14.** Fill in the blank from the choices given within brackets :

Ammonia gas is collected by ..... (an upward displacement of air, a downward displacement of water, a downward displacement of air)



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15. Fill in the blank from the choices given within brackets:

Cold, dilute nitric acid reacts with copper to form ..... (Hydrogen, nitrogen dioxide, nitric oxide)



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**16.** The ratio of the mass of a certain volume of gas to the mass of an equal volume of hydrogen under the same conditions of temperature and pressure is known as \_\_\_\_\_



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**17.** Give one word or phrase for the following:  
Formation of ions from molecules.



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**18.** Give one word or phrase for the following:

Electrolytic deposition of a superior metal on a baser metal.



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**19.** Give one word or phrase for the following:

Hydrocarbons containing a  $\overset{\text{O}}{\parallel} \text{C} -$  functional group.



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20. The amount of energy released when an atom in the gaseous state accepts an electron to form an anion.



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21. Match the options A to E with the statements (i) to (v):

A	Ethanal	(i)	$S^{2-} \rightarrow S$
B	Methanoic acid	(ii)	$C_nH_{2n}O_2$
C	Oxidation	(iii)	Ethyl acetylene
D	Reduction	(iv)	$C_nH_{2n}O$
E	1- Butyne	(v)	$S \rightarrow S^{2-}$



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**22.** Write balanced equation for the following:

Action of heat on a mixture of copper and concentrated nitric acid.



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**23.** Write balanced equation for the following:

Action of warm water on magnesium nitride.



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**24.** Write balanced equation for the following:

Action of concentrated sulphuric acid on carbon.



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**25.** Write balanced equation for the following:

(i) Action of dilute hydrochloric acid on sodium sulphide.



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**26.** Write balanced equation for the following:

(i) Preparation of ethane from sodium propionate.



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**27.** Distinguish between the following pairs of compounds · using test given within brackets :  
Iron (II) sulphate and iron (III) sulphate (using ammonium hydroxide)



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**28.** Distinguish between the following pairs of compounds · using test given within brackets :

A lead salt and a zinc salt (using excess ammonium hydroxide)



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**29.** Distinguish between the following pair of compounds using the test given within bracket :

Sodium nitrate and sodium sulphite (using dilute sulphuric acid).



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**30.** Dilute sulphuric acid and dilute hydrochloric acid (using barium chloride solution)



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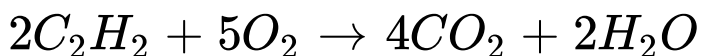


31. Ethane and ethene (using alkaline potassium permanganate solution)



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32. Oxygen oxidizes ethyne to carbon dioxide and water as shown by the equation :



What volume of ethyne gas at S.T.P. is required to produce  $8.4 \text{ dm}^3$  of carbon dioxide at S.T.P.

? [H = 1, C = 12, O = 16]





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**33.** A compound made up of two elements X and Y has an empirical formula  $X_2Y$ . If the atomic weight of X is 10 and that of Y is 5 and the compound has a vapour density 25, find the molecular formula,



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Section II

1. State one appropriate observation for the following:

When dilute hydrochloric acid is added to sodium carbonate crystals.



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2. State your observation in the following case:

When excess sodium hydroxide is added to calcium nitrate solution.



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3. At the cathode when acidified aqueous copper sulphate solution is electrolysed with copper electrodes .



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4. State your observation in the following case: When calcium hydroxide is heated with ammonium chloride crystals.



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**5.** State your observation in the following case

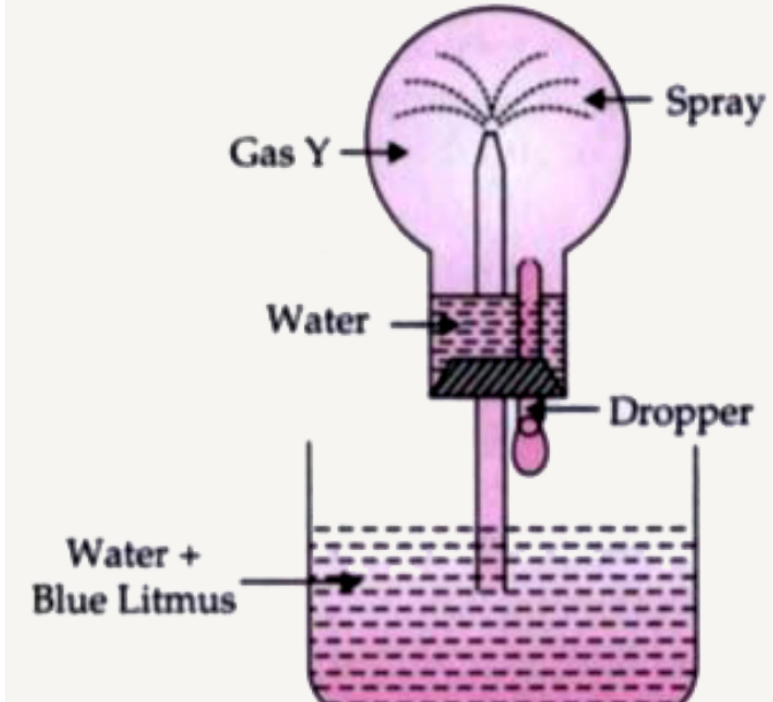
:

When moist starch iodide paper is introduced into chlorine gas.



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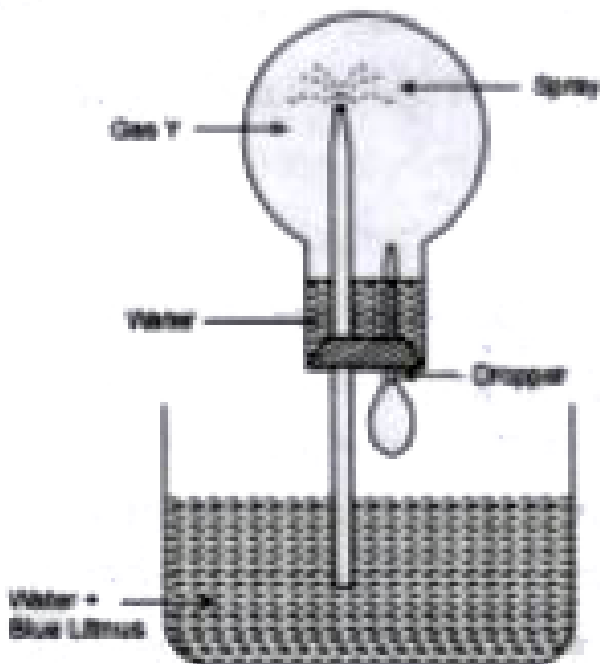
**6.** Study the figure given below and answer the question that follow :



Identify the gas Y.

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7. Study the figure given below and answer the questions that follow :

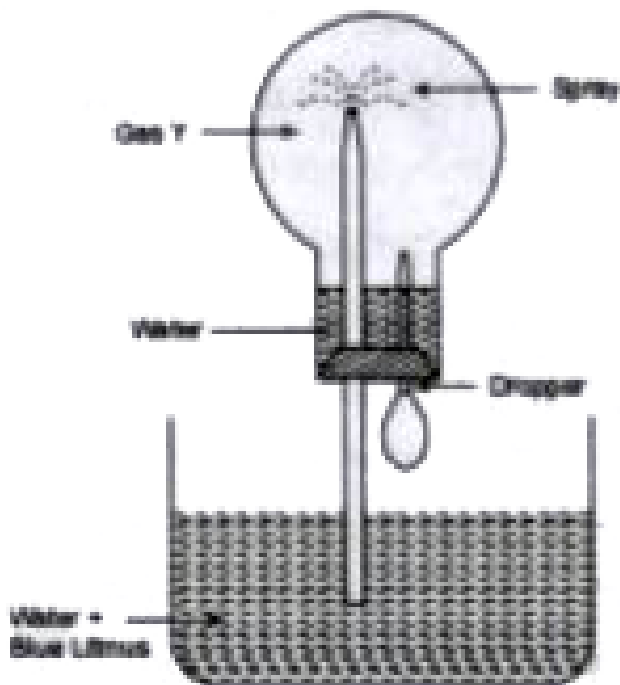


What property of gas Y does this experiment demonstrate ?



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8. Study the figure given below and answer the questions that follow :



Name another gas which has the same property and can be demonstrated through this experiment.







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**9.** Name the other ion formed when ammonia dissolves in water.



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**10.** Give one test that can be used to detect the presence of the ion produced.



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**11.** State the conditions required for the following reactions to take place :

(i) Catalytic hydrogenation of ethyne.

(ii) Preparation of ethyne from ethylene dibromide.



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**12.** State the conditions required for the following reactions to take place :

(i) Catalytic hydrogenation of ethyne.

(ii) Preparation of ethyne from ethylene dibromide.



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**13.** State the condition required for the following reaction to take place :

Catalytic oxidation of ammonia to nitric oxide.



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**14.** State the conditions required for the following reaction to take place :

Any two conditions for the conversion of sulphur dioxide to sulphur trioxide.



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**15.** State the main components of the following alloys:

Brass



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**16.** State the main components of the following alloys:

Duralumin



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**17.** State the main components of the following alloys:

Bronze



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**18.** Give balanced equation for the following:

Laboratory preparation of nitric acid.



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**19.** Give balanced equations for the following:

(i) Preparation of ethanol from monochloro ethane and aq. sodium hydroxide.



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**20.** Draw the structural formula for the following compounds :

Ethanol



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**21.** Give the structural formula of the following:

(i) ethanol.

(ii) 1-propanal.

(iii) ethanoic acid.

(iv) 1, 2 dichloroethane.



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**22.** Give the structural formula of the following:

ethanoic acid



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**23.** Give the structural formula of the following:

1,2-dichloroethane.



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**24.** Draw the structure of the stable positive ion formed when an acid dissolves in water.



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**25.** State the inference drawn from the following observation:

On carrying out the flame test with a salt P a brick red flame was obtained. What is the cation in P?



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**26.** State the inference drawn from the following observation:

A gas Q turns moist lead acetate paper silvery black. Identify the gas Q.



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27. State the inference drawn from the following observations:

pH of liquid R is 10. What kind of substance is R?



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**28.** State the inference drawn from the following observations :

Salt S is prepared by reacting dilute sulphuric acid with copper oxide. Identify S.



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**29.** Name the

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



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**30.** Name the

A compound added to lower the fusion temperature of electrolytic bath in the extraction of aluminium.



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**31.** Name the following

An ore of zinc containing its sulphide.



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**32.** Give one equation each to show the following properties of sulphuric acid:

Dehydrating property



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**33.** Give one equation each to show the following properties of sulphuric acid:

Acidic nature



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**34.** Give two balanced reactions of each type to show the following properties of sulphuric acid :

Non-volatile nature



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**35.** Give balanced chemical equation to prepare the following salt:

Lead sulphate from lead carbonate.



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**36.** Give balanced chemical equations to prepare the following salts:

Sodium sulphate using dilute sulphuric acid.



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**37.** Give balanced chemical equation to prepare the following salt:

Copper chloride using copper carbonate.



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**38.** State the Avogadro law of ideal gas



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**39.** A cylinder contains 68 g of ammonia gas at S.T.P.

What is the volume occupied by this gas?



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**40.** A cylinder contains 68 g of ammonia gas at S.T.P.

How many moles of ammonia are present in the cylinder?



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**41.** A cylinder contains 32 g of methane gas at S.T.P. How many molecules of ammonia are present in the cylinder ? [C-12, H-1]



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**42.** Why do covalent compounds exist as gases, liquids or soft solids ?



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**43.** Which electrode : anode or cathode is the oxidising electrode ? Why?



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**44.** Name the kind of particles present in Sodium Hydroxide solution.



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**45.** Name the kind of particles present in Carbonic acid.



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**46.** Name the kind of particles present in Sugar solution.



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**47.** 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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**48.** 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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**49.** An element Z has atomic number 16.

Answer the following questions on Z:

State the formula between Z and Hydrogen.



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50. An element Z has atomic number 16.

Answer the following questions on Z:

What kind of a compound is this?



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51. M is a metal above hydrogen in the activity series and its oxide has the formula  $M_2O$ . This oxide when dissolved in water forms the corresponding hydroxide which is a good conductor of electricity. In the above context answer the following:

What kind of combination exists between M and O?



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**52.** M is a metal above hydrogen in the activity series and its oxide has the formula  $M_2O$ . This oxide when dissolved in water forms the corresponding hydroxide which is a good conductor of electricity. In the above context answer the following:



How many electrons are there in the outermost shell of M



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**53.** M is a metal above hydrogen in the activity series and its oxide has the formula  $M_2O$ . This oxide when dissolved in water forms the corresponding hydroxide which is a good conductor of electricity. In the above context answer the following:

Name the group to which M belongs.



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54. M is a metal above hydrogen in the activity series and its oxide has the formula  $M_2O$ . This oxide when dissolved in water forms the corresponding hydroxide which is a good conductor of electricity. In the above context answer the following:

State the reaction taking place at the cathode.



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55. M is a metal above hydrogen in the activity series and its oxide has the formula  $M_2O$ . This oxide when dissolved in water forms the corresponding hydroxide which is a good conductor of electricity. In the above context answer the following:

Name the product at the anode.



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