CHEMISTRY

BOOKS - EVERGREEN CHEMISTRY (ENGLISH)

SAMPLE PAPER 2016

Section I

1. Fill in the blanks from the choices given :

Metals are good _____'oxidizing agents

/reducing agents because they are electron _____ [acceptors/donors].

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2. Electrovalent compounds have ..... (high/low) melting points.

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3. Fill in the blank with the choices given in brackets.

Higher the pH value of a solution, the more ..... (acidic/alkaline) it is

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4. Fill in the blank with the choices given in bracket : ..... $(AgCl / PbCl_2)$ a white precipitate is soluble in excess NH_4OH.

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5. Conversion of ethene to ethane is an example of _____(hydration/hydrogenation) :

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

An element with the atomic number 19 will most likely combine chemically with the element whose atomic number is :

A. 17

B. 11

C. 18

D. 20

Answer: A

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7. The ratio between the number of molecules in 2 g of hydrogen and 32 g of oxygen is:

[Given that H = 1, O = 16]

A. 1:2

B. 1: 0.01

C. 1:1

D. 0:01 : 1

Answer: C

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8. The two main metals in bronze are

A. Copper and zinc

B. Copper and lead

C. Copper and nickel

D. Copper and tin

Answer: D

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9. The particles present in strong electrolytes are :

A. only molecules

B. mainly ions

C. ions and molecules

D. only atoms

Answer: B

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

(i) The aim of the Fountain Experiment is to prove that:

A. HCl turns blue litmus red

B. HCl is denser than air

C. HCl is highly soluble in water

D. HCl fumes in moist air

Answer: C

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11. Write balanced chemical equations for the following:

Action of warm water on magnesium nitride.

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12. Write balanced chemical equation for the following:

Action of hot and concentrated Nitric acid on copper.

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13. Write the balanced chemical equation for the following:

(1) Action of Hydrochloric acid on sodium bicarbonate.

(2) Dilute Hydrochloric acid is added to Sodium thiosulphate.

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14. Write balanced chemical equation for the following:

Action of dilute Sulphuric acid on Sodium Sulphite.

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15. Write balanced chemical equation for the following:

Preparation of ethanol from Ethyl Chloride.

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16. State your observations when

hydrochloric acid is added to zinc nitrate solution

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17. State your observation when :

Barium chloride solution is mixed with Sodium Sulphate Solution.

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18. State your observation when : Concentrated Sulphuric acid is added to Sugar Crystals.

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19. State your observation when:

Dilute hydrochloric acid is added to copper carbonate.

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20. State your observations when :

Dilute hydrochloric acid reacts with sodium sulphite.

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21. Identify the term in each of the

The tendency of an atom to attract electrons to itself when combined in a compound.

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22. Identify the term/substance of the following: The method used to separate ore from gangue by preferential wetting.

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23. Identify the term/substance in each of the following:

(a) The catalyst used in the conversion of ethyne to ethane.

(b) The type of reactions alkenes undergo.

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24. Name the following:

The type of reactions alkenes undergo.

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25. The electrons present in the outermost shell of an atom ..... .

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26. A gas of mass 32 gm has a volume of 20 litre at S.T.P. Calculate the gram molecular weight of the gas.

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27. How much calcium oxide is formed when 82 g of calcium nitrate is heated ? Also find the volume of nitrogen dioxide evolved :

$$2Ca(NO_3)_2 \rightarrow 2CaO + 4NO_2 + O_2$$

(Ca = 40, N = 14, O = 16)

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28. Match the salts given in Column I with their . method of preparation given in Column

II :

Column I	Column II
(i) $Pb(NO_3)_2$ from PbO	(A) Simple displacement
(ii) $MgCl_2$ from Mg	(B) Titration
(iii) $FeCl_3$ from Fe	(C) Neutralization
(iv) $NaNO_3$ from NaOH	(D) Precipitation
(v) $ZnCO_3$ from $ZnSO_4$	(E) Combination

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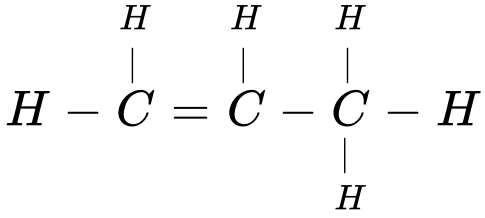
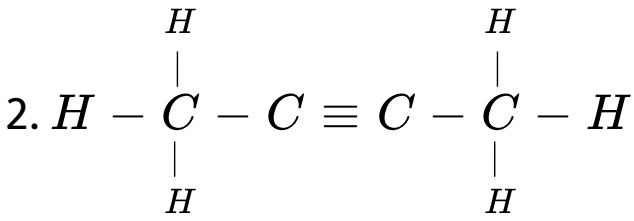
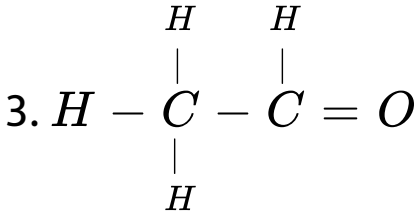
29. Write the IUPAC names of each of the following:

1. 

2. 

3. 

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30. Rewrite the following sentences by using the correct symbol $>$ (greater than) or $<$ (less than) in the blanks given :

The ionization potential of Potassium is ..... that of Sodium.

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31. The electronegativity of iodine is _____that of chlorine. ($>$ / $<$)

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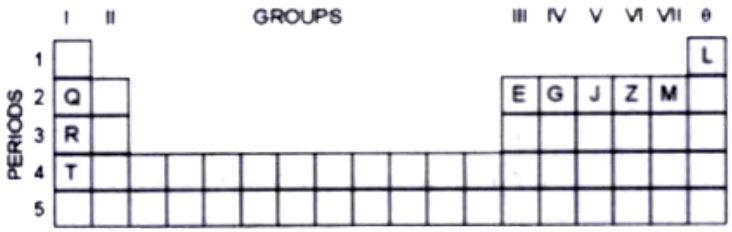
Section Ii

1. Use the letters only written in the Periodic Table given below to answer the questions that follow :



State the number of valence electrons in atom J.

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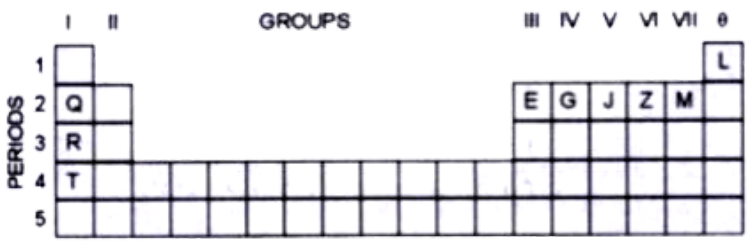
2. Use the letters only written in the Periodic Table given below to answer the questions that follow :



Which element shown forms ions with a single negative charge ?

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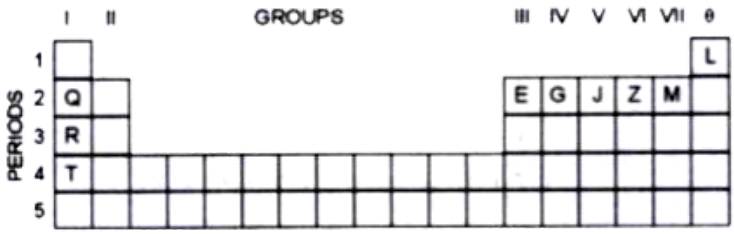
3. Use the letters only written in the Periodic Table given below to answer the questions that follow :



Which metallic element is more reactive than R?

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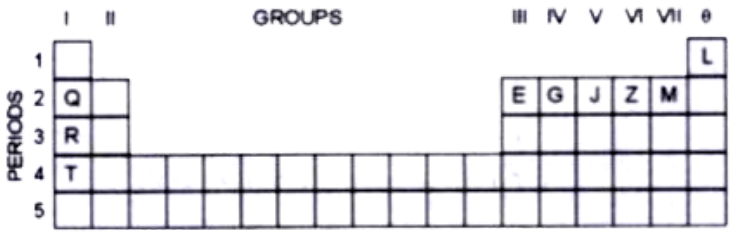
4. Use the letters only written in the Periodic Table given below to answer the questions that follow :



Which element has its electrons arranged in four shells ?

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5. If an element has a low ionization energy then it is likely to be _____ [`"metallic"// "non-metallic"]

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6. If an element has seven electrons in its outermost shell then it is likely to have the _____ [largest/smallest] atomic size among all the elements in the same period.

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7. The following table shows the electronic configuration of the elements

Element	W	X	Y	Z
Electronic configurations	2, 8, 1	2, 8, 7	2, 5	1

Answer the following question based on the

table above :

What type of Bond is formed between :

1. W and X 2. Y and Z

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8. The following table shows the electronic configuration of the elements

Element	*W*	*X*	*Y*	*Z*
Electronic configurations	*2, 8, 1*	*2, 8, 7*	*2, 5*	*1*

Answer the following question based on the table above :

What is the formula of the compound formed between :

1. X and Z 2. W and X

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9. Write a balanced chemical equation for the following:

Burning of hexane in plentiful supply of air.

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10. Write a balanced chemical equation for the following:

Action of water on calcium carbide.

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11. Write balanced chemical equations for the Heating of ethanol at $170^{\circ} C$ in the presence of concentrated sulphuric acid.

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12. Give the structural formulae of the following:

2-methyl propane

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13. Give the structural formula of the following:

ethanoic acid

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14. Give the structural formulae of the following:

Butan-2-ol

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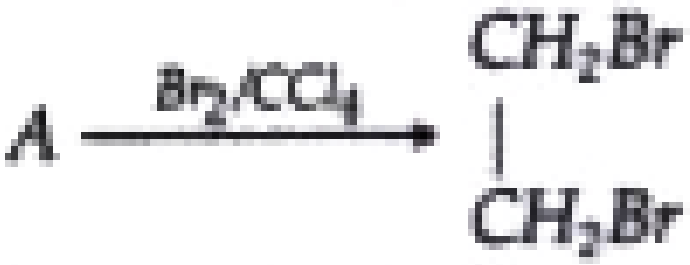
15. Equation for the reaction when compound A is bubbled through bromine dissolved in carbon tetrachloride is as follows:



Draw the structure of A.

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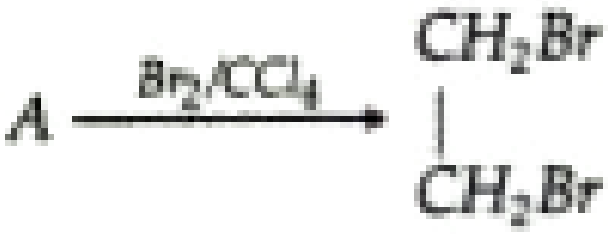
16. Equation for the reaction when compound A is bubbled through bromine dissolved in carbon tetrachloride is as follows:



State your observation during this reaction.

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17. Fill in the blanks using the appropriate words given below:

(Sulphur dioxide, nitrogen dioxide, nitric oxide, sulphuric acid)

Cold, dilute nitric acid reacts with copper to give ..... .

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18. Fill in the blanks using the appropriate words given below:

(Sulphur dioxide, nitrogen dioxide, nitric oxide, sulphuric acid)

Hot, concentrated nitric acid reacts with sulphur to form ..... .

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19. State your observations when :

Dilute hydrochloric acid reacts with sodium sulphite.

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20. State your observations when :

Dilute hydrochloric acid reacts with iron (II) sulphide.

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21. State your observations when ammonium hydroxide solution is added drop by drop and then in excess to each of the following solutions :

copper sulphate solution

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22. State your observations when ammonium hydroxide solution is added drop by drop and then in excess to each of the following

solutions :

zinc sulphate solution

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23. Write equations for the reactions taking place at the two electrodes (mentioning clearly the name of the electrode) during the electrolysis of:

Acidified copper sulphate solution with copper electrodes.

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24. Write equations for the reactions taking place at the two electrodes (mentioning clearly the name of the electrode) during the electrolysis of:

Molten lead bromide with inert electrodes.

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25. Name the product formed at the anode during the electrolysis of acidified water using platinum electrodes.

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26. Name the metallic ions that should be present in the electrolyte when an article made of copper is to be electroplated with silver.

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27. A gas cylinder contains 12×10^{24} molecules of oxygen gas.

If Avogadro's number is 6×10^{23}. Calculate :

The mass of oxygen present in the cylinder.

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28. A gas cylinder contains 12×10^{24} molecules of oxygen gas.

If Avogadro's number is 6×10^{23}. Calculate :

The volume of oxygen at S.T.P. present in the cylinder. [O = 16]

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29. A gaseous hydrocarbon contains 82.76% of carbon. Given that its vapour density is 29,find its molecular formula. [C = 12, H = 1]

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30. The equation $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$, represents the catalytic oxidation of ammonia. If 100 cm^3 of ammonia is used, calculate the volume of oxygen required to oxidise the ammonia completely.

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31. By drawing an electron dot diagram show the formation of Ammonium Ion [Atomic No. : N = 7 and H = 1]

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32. Name the gas evolved when the following mixture is heated :

Calcium hydroxide and ammonium chloride.

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33. Name the gas evolved when the following mixtures are heated :

Sodium nitrite and Ammonium chloride.

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34. Write balanced chemical equations for each of the following:

When excess of ammonia is treated with chlorine.

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35. Write balanced chemical equations for each of the following:

An equation to illustrate the reducing nature of ammonia.

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36. A, B, C and D summarize the properties of sulphuric acid depending on whether it is

dilute or concentrated.

A = Typical acid property

B = Non-volatile acid

C = Oxidizing agent

D = Dehydrating agent

Choose the property (A, B, C or D) depending on which is relevant to each of the following:

(i) Preparation of Hydrogen chloride gas.

(ii) Preparation of Copper sulphate from copper oxide.

(iii) Action of conc. Sulphuric acid on Sulphur.

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37. A, B, C and D summarize the properties of sulphuric acid depending on whether it is dilute or concentrated.

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D = Dehydrating agent

Choose the property (A, B, C or D) depending on which is relevant to each of the following:

(i) Preparation of Hydrogen chloride gas.

(ii) Preparation of Copper sulphate from

copper oxide.

(iii) Action of conc. Sulphuric acid on Sulphur.

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38. A, B, C and D summarize the properties of sulphuric acid depending on whether it is dilute or concentrated.

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C = Oxidizing agent

D = Dehydrating agent

Choose the property (A, B, C or D) depending on which is relevant to each of the following:

(i) Preparation of Hydrogen chloride gas.

(ii) Preparation of Copper sulphate from copper oxide.

(iii) Action of conc. Sulphuric acid on Sulphur.

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39. Give reasons why :

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

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40. Give reasons why :

In the electroplating of an article with silver, the electrolyte sodium argentocyanide solution is preferred over silver nitrate solution.

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41. Give reasons why :

Although copper is a good conductor of

electricity, it is a non-electrolyte.

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42. (i)Name the solution used to react with Bauxite as a first step in obtaining pure aluminium oxide, in the Baeyer's process.

(ii) Write the equation for the reaction where the aluminum oxide for the electrolytic extraction of aluminum is obtained by heating aluminium hydroxide.

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43. Write the equation for the reaction when aluminium oxide for the electrolytic extraction of aluminium is obtained by heating aluminium hydroxide.

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44. Name the compound added to pure alumia to lower the fusion temperature during the electrolytic reduction of alumina.

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45. Answer the following question related with the isolation of aluminium from bauxite:

Write the equation for the reaction that occurs at the cathode during the extraction of aluminium by electrolysis.

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46. Explain why it is preferable to use a number of graphite anodes instead of a single

electrode during the electrolysis of aluminium.

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47. State what would you observe when :

Washing soda crystals are exposed to the atmosphere.

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48. State what would you observe when :

The salt ferric chloride is exposed to the

atmosphere.

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49. Identify the cations in each of the following case :

NaOH solution when added to the Solution (A) gives a reddish brown precipitate

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50. Identify the cations in each of the following case :

NH_4OH Solution when added to the Solution (B) gives white ppt which does not dissolve in excess.

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51. Identify the cations in each of the following case :

NaOH Solution when added to Solution (C) gives white ppt which is insoluble in excess.

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