



CHEMISTRY

BOOKS - EVERGREEN CHEMISTRY (ENGLISH)

MODEL PAPER-2

Section I

1. The elements arranged in correct order of decreasing nuclear charge are:

A. A: C, F, Li, Be

B. B: B, N, O, Li

C. Mg, Al, S, Cl

D. S, P, Si, Al

Answer:



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2. The covalent molecule which has four electrons in the outer shell of each atom not

included in sharing during formation of its molecule:

A. Nitrogen

B. Hydrogen

C. Oxygen

D. Chlorine

Answer:



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3. During electrolysis:

A. Anions accept electrons from the cathode [reduction process]

B. Anions donate electrons to the cathode (oxidation process]

C. Anions donate electrons to the anode [oxidation process]

D. Anions donate electrons to the anode [reduction process]

Answer:



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4. Activity series is a series of metals arranged according to their reactivity. The metal at the top of the series :

- A. Is most easily reduced
- B. Gives up valence electrons least readily
- C. Is least electropositive
- D. Is most easily oxidised

Answer:



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5. A salt formed by neutralization of an alkali [titration]:

- A. Zinc carbonate
- B. Lead sulphate
- C. Iron [II] sulphide
- D. Sodium nitrate

Answer:



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6. On moving down a subgroup in the Modern Periodic Table:

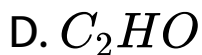
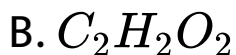
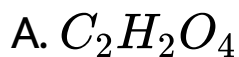
- A. Metallic character- decreases
- B. No. of electron shells - remain same
- C. Valence electrons - increase by one
- D. Valence electrons - remain same

Answer:



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7. If the molecular formula of a substance is CHO_2 - its empirical formula is:



Answer:



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8. The pH of a solution [of a compound] which reacts with NH_4Cl to liberate a gas which turns phenolphthalein- colourless to pink is:

A. Less than

B. 7

C. Less than 3

D. More than 7

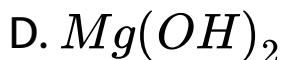
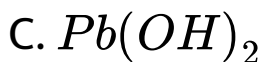
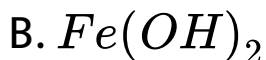
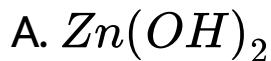
Answer:



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9. Name :

a hydroxide which is soluble in excess of ammonium hydroxide.



Answer:



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10. The I.U.P.A.C name of the product of the reaction of boiling chloroethane with alcoholic caustic potash is:

- a. Ethanol
- b. Ethylene
- c. Ethene
- d. Ethyne

A. Ethanol

B. Ethylene

C. Ethene

D. Ethyne

Answer:



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11. Fill in the blanks from the choices given in the brackets:

A dibasic acid which is a weak electrolyte is
[acetic acid, formic acid, carbonic acid]



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

The product of condensation of ethanoic acid
with ethanol in presence of conc. H_2SO_4 is
_____ [acetaldehyde, ethylacetate,
diethylether]



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13. Fill in the blanks from the choices given in the brackets:

Silver nitrate soln. reacts with dil. HCl to give a precipitate which is soluble in _____ [dil. HNO_3 , cold water, NH_4OH]



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14. Fill in the blanks from the choices given in the brackets:

When ammonia [in excess] & chlorine are

mixed, the chlorine is [oxidized to HCl, oxidised to N_2 , reduced to HCl]



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15. Fill in the blanks from the choices given in the brackets:

Sulphur is oxidised by hot conc. nitric acid to give [sulphuric acid, nitrogen dioxide, sulphur dioxide] as the oxidised product.



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16. Give a suitable word or phrase for the following:

The positive charge on the nucleus of an atom-equivalent to the atomic number of the element.



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17. Give a suitable word or phrase for the following:

'Hydroxy' derivatives of alkanes obtained by

replacement of hydrogen atoms of alkanes by corresponding number of hydroxyl groups.



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18. Give a suitable word or phrase for the following:

(i) (ii) (iii) The amount of substance which contains - the same number of units as the number of atoms in 12g. of carbon-12 [$6C^{12}$]



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19. Give a suitable word or phrase for the following:

The compound formed by partial or complete replacement of the hydrogen ion [H^+] aq. of an acid by a basic radical [metallic ion or ammonium ion].



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20. Give a suitable word or phrase for the following:

The process of extraction of metals by electrolysis.



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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. Give balanced equations for the following:

Zinc hydroxide is reacted with caustic soda soln.



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23. Give balanced equations for the following:

Iron (II) sulphide is reacted with dilute hydrochloric acid.



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24. Give balanced equations for the following:

Dilute sulphuric acid reacts with ammonium hydroxide soln.



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25. Give balanced equations for the following:

Carbon is oxidised by hot conc. nitric acid.



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26. Give balanced equations for the following:

Dehydration of ethanol with conc. sulphuric acid to give a hydrocarbon.



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27. Give a chemical test to distinguish between the following pairs of compounds:

Ethanol and ethanoic acid.



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28. Give a chemical test to distinguish between the following pairs of compounds:

Ammonium chloride and sodium chloride.



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29. Give a chemical test to distinguish between the following pairs of compounds:

Zinc and zinc oxide.



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30. Give a chemical test to distinguish between the following pairs of compounds:

Calcium nitrate and zinc nitrate.



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31. Give a chemical test to distinguish between the following pairs of compounds:

Sodium sulphate and sodium sulphite.



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32. Ethane [C_2H_6] is exploded with oxygen [i.e. in excess air). If the volume of ethane used is 200cm^3 & oxygen is 3000cc . Calculate the volume of unused oxygen.



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33. If the vapour density of a gaseous hydrocarbon 'X' is 35, determine its molecular formula if 0.60g of carbon is present in 0.70g of the hydrocarbon 'X' [C=12, H=1].





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Section II

1. State your observations in each of the following:

1,2, dibromoethane is boiled with hot conc. alcoholic caustic potash and the gas evolved bubbled through ammoniacal cuprous chloride solution.



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2. State your observations in each of the following:

Ammonium sulphate is heated with sodium hydroxide soln. and the gas evolved bubbled through copper sulphate solution



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3. State your observations in each of the following:

Lead nitrate solution is added to dilute hydrochloric acid.



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4. State your observations in each of the following:

At the electrodes when sodium argentocyanide soln. is electrolyzed using silver anode.



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5. State your observations in each of the following:

Ammonium hydroxide solution is added slowly in excess to the product obtained on treating heated iron with chlorine.



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6. State the metal/s generally common in the following alloys:

Bronze & solder but not in brass





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7. State the metal/s generally common in the following alloys:

Duralumin & brass



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8. State the metal/s generally common in the following alloys:

Brass & bronze



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9. Give balanced equations for the following laboratory preparations:

An unsaturated aliphatic hydrocarbon with molecular formula C_2H_4 from bromoethane.



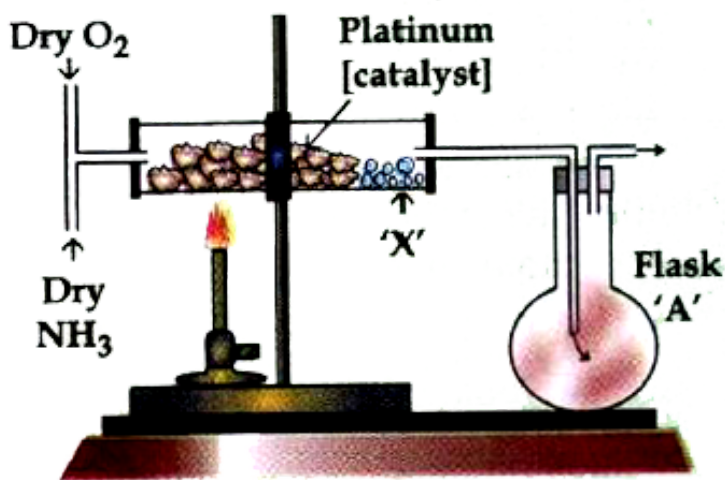
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10. Give balanced equations for the following laboratory preparations:

Hydrogen chloride from rock salt.

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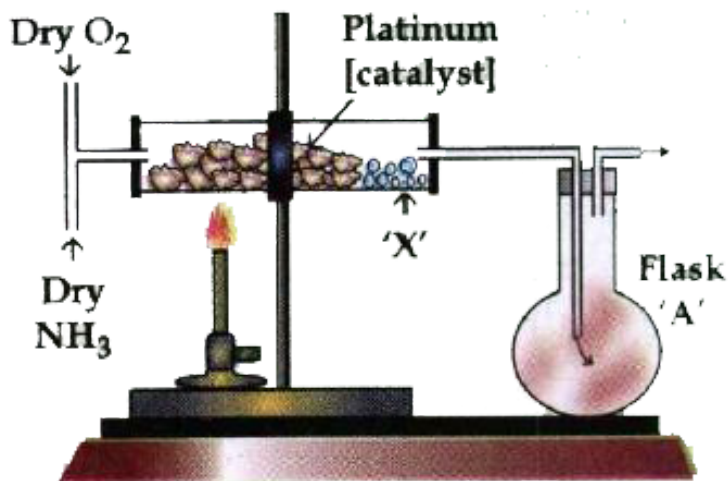
11. Study the figure given alongside & answer the questions that follow:



Give a balanced equation for - the reaction represented.

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12. Study the figure given alongside & answer the questions that follow:

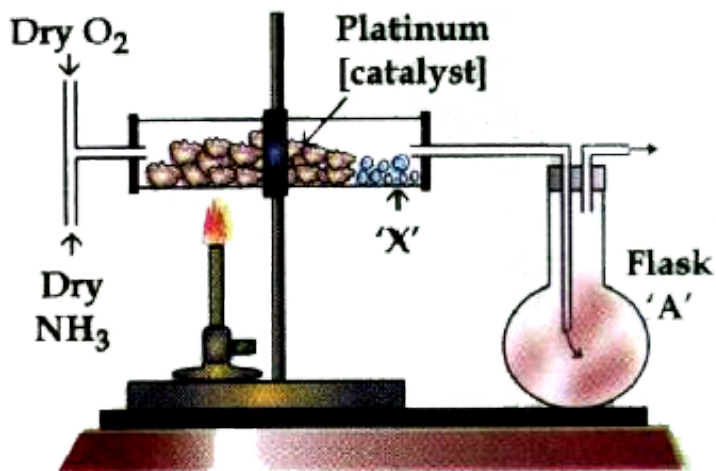


State the color of product A



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13. Study the figure given alongside & answer the questions that follow:



Is the final product formed in flask 'A' a neutral or an acidic oxide.



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14. Draw the electron dot diagram to show the formation of a stable positive ion from a molecule Having two lone pair of electrons and another atom short of a lone pair of electrons [e.g. H^{1+}]



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15. State the condition/s required for the following conversion reactions to take place's Ethanol to ethylene.





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16. State the condition/s required for the following conversion reactions to take place: Ethane to monochloroethane.



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17. State the condition/s required for the following conversion reactions to take place: Nitrogen to ammonia.



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18. State the condition/s required for the following conversion reactions to take place
Sulphur dioxide to sulphur trioxide in contact process.



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19. State the condition/s required for the following conversion reaction to take place
Nitric oxide to nitric acid.



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20. Give the structural formula of the following:

1,2, dibromoethene.



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21. Give the structural formula of the following:

2-methyl butane.



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22. Give the structural formula of the following:

Propan-2-ol.



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23. Give the structural formula of the following:

Methoxy methane.



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24. State the inference drawn from the following observations:

A salt 'X' on heating with sodium hydroxide solution evolves a gas which turns methyl orange to yellow. State the cation in 'X'.



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25. State the inference drawn from the following observations:

A salt 'Y' which reacts with $BaCl_2$ solution to give a white precipitate insoluble in dil: HCl.

State the anion in 'Y'.



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26.

A gas 'Z' which changes the colour of $KMnO_4$ solution and of lead acetate solution. Identify gas.



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27. Give reasons for the following:

A molecule of ammonia has one lone pair of electrons.



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28. Give reasons for the following:

The bond formed between the oxygen atom in water and the hydrogen ion is a coordinate bond,



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29. Give reasons for the following:

Electrovalent & polar covalent compounds
conduct electricity in aqueous solution state



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30. Name the following:

The chemical name of the principal ore of
aluminium.



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31. Name the following:

An alkaline earth metal in period 3 of the periodic table.



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32. Name the following:

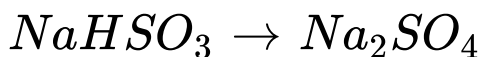
A gas other than oxygen obtained at the anode during electrolytic reduction of fused alumina [Al_2O_3]



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33. Select the correct property of sulphuric acid from A to D, which relates to each of the conversion given below using sulphuric acid.

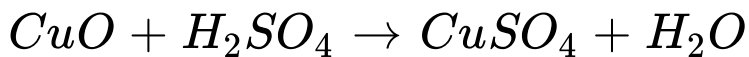
A: Dehydrating nature B: Non-volatile acid C: Acidic nature D: Oxidising agent,



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34. Select the correct property of sulphuric acid from A to D, which relates to the

conversion given below using sulphuric acid.



A: Dehydrating nature

B: Non-volatile acid

C: Acidic nature

D: Oxidising agent,



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35. Select the correct property of sulphuric acid from A to D, which relates to each of the conversion given below using sulphuric acid.

A: Dehydrating nature B: Non-volatile acid C:
Acidic nature D: Oxidising agent,



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36. Give balanced equations for the preparation of the following salts:

PbS from Pb



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37. Give balanced equations for the preparation of the following salts:



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38. Give balanced equations for the preparation of the following salts:



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39. What is meant by the term 'Molar volume'.



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40. A flask 'A' holds 2.8kg. of hydrogen at s.t.p.

Calculate the weight of a diatomic gas N_2 it can hold at s.t.p [N=14].



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41. Calculate if 1 mole of a diatomic gas ' X_2 ' will occupy a higher volume or 35.5g of 'X' will.

[X=35.5]



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42. Differentiate between the following:

Oxidising electrode and reducing electrode.



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43. Differentiate between the following:

Ionisation energy and electron affinity.



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44. Differentiate between the following:

Roasting and calcination of an ore.



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45. State which of the following - CH_3COOH , liquid CCl_4 , NaBr soln. or $HCOOH$ - contains the particles - ions only.



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46. Name the ion which is discharged at the electrode at which oxygen is 'evolved during electrol of dil. H_2SO_4



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47. An element 'A' - is present in period 3 and group-2 of the periodic table.

Give a reason why ionisation potential of 'A' is higher than that of B":



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48. An element 'A' - is present in period 3 and group-2 of the periodic table.

State which of the two A or A^{2+} has a larger atomic size, giving a reason for the same.



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49. An element 'A' - is present in period 3 and group-2 of the periodic table.

Give a reason why ionisation potential of 'A' is higher than that of B":



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50. An element 'A' - is present in period 3 and group-2 of the periodic table.

State if the element below 'A' in group-2 will be

more metallic or less metallic than 'A', giving a reason for the same.



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51. An element 'A' - is present in period 3 and group-2 of the periodic table.

Give the formula of the compound formed on reaction of A with nitro



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52. M' is an element above Zn in the activity series of metals. Select the correct answer in each case from (i) to (iii)

$M - 3e^- \rightarrow M^{3+}$: The process takes place by oxidation/reduction.



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53. M' is an element above Zn in the activity series of metals. Select the correct answer in each case from (i) to (iii)

$M^{3+} \rightarrow M$: The cation gets reduced/ oxidised to neutral atom.



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54. M' is an element above Zn in the activity series of metals. Select the correct answer in each case from (i) to (iii)

M reacts with conc. H_2SO_4 - to liberate hydrogen/sulphur dioxide gas.



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55. M' is an element above Zn in the activity series of metals.

State why conventional reducing agents cannot reduce the oxide of M to metal.



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56. M' is an element above Zn in the activity series of metals. Select the correct answer in each case from (i) to (iii)

$M^{3+} \rightarrow M$: The cation gets reduced/ oxidised to neutral atom.



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