

S.S.L.C MODEL EXAMINATION FEBRUARY – 2015

CHEMISTRY (English)

Time: 1 ½ hours

Total Score: ~~40~~ 47

Instructions:

- There are 13 questions in this question paper..
- Score for each question is is given against it.
- Put correct question numbers for each question and sub-questions..
- Questions with choice are given. Write answer to only one question.

Score

1. Some data related to the element magnesium are given:

Symbol = Mg.

Atomic number = 12

Electronic configuration = 2, 8, 2

- (a) How many shells are present in magnesium atom? 1
- (b) Write the sub shell electronic configuration of magnesium. 1
- (c) Write the compound formed when magnesium is treated with chlorine and find the nature of bond formed by them. 2  
(Hint: Electro negativity values: Mg = 1.2, Cl = 3.0)

Atomic number of chlorine = 17

2. Note the mathematical expressions of some gas laws.

(i)  $V \propto 1/p$

(ii)  $V \propto T$

(iii)  $V \propto n$

- (a) Which of the above represents Charles law? 1
- (b) Volume of a fixed mass of hydrogen gas at 300 K is 400 mL. What will be the volume of the gas if the temperature is increased to 500 K.? 2  
(Pressure is constant)



6. While heating the mixture of ammonium chloride ( $\text{NH}_4\text{Cl}$ ) and calcium hydroxide [ $\text{Ca}(\text{OH})_2$ ] in a laboratory, a gas with a specific smell was arised.

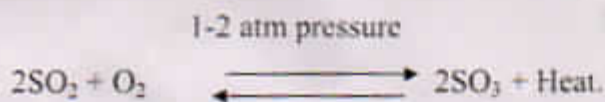
(a) Identify the gas.

1  
2

(b) Explain the effect of pressure in the industrial preparation of this gas.

OR

Given below is the equation of a reactions.



(a) Which catalyst is used in this reaction?

1

(b) This reaction is a stage in the preparation of an acid which is used in storage cell.

Name the acid.

1

(c) How will you detect this acid by using copper sulphate ( $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ )? 1

7. In a seminar it is mentioned that aluminum can be used to make cooking vessels but magnesium. Cannot be used.

(a) Can you agree with this? Give reason.

1

(b) Write the different stages of concentration of bauxite, the ore of aluminium. 2

8. Chemical equation of reaction between sodium chloride and silver nitrate is given below.



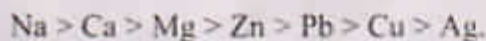
(a) Is this a test to detect chloride or nitrate? Why?

1

(b) Which among the following is used to detect sulphate :  $\text{NaCl}$ ,  $\text{MgCl}_2$ ,  $\text{BaCl}_2$ ,  $\text{HCl}$

1

9. Note the elements which are arranged in the decreasing order of reactivity:



(a) Which metal is the anode in the cell constituted by using Mg electrode and Cu electrode?

1

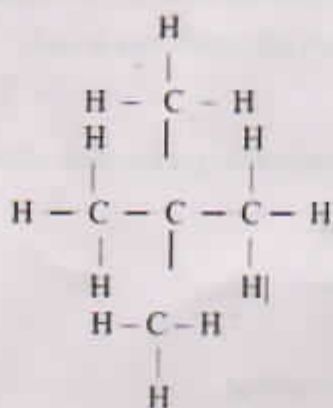
(b) Write the redox reaction taking place in the above cell

1

(c) Is it possible to constitute a cell by using curod and  $\text{CuSO}_4$  solution, and Ag rod and  $\text{AgNO}_3$  solution? Give reason.

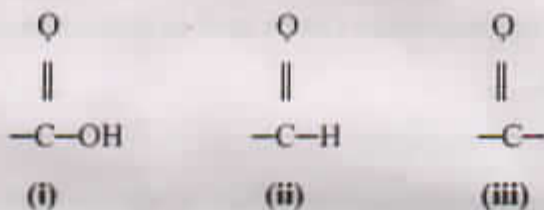
2

10. Structure of an alkane is given below.



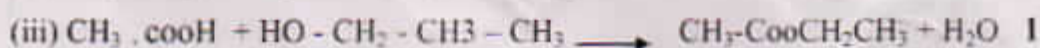
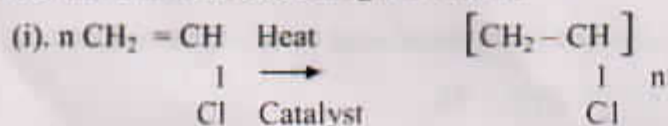
- (a) Give the condensed structural formula of this compound. 1
- (b) Write the IUPAC name of this compound. 1
- (c) Write the IUPAC name of an isomer of this compound. 1

11. Some functional groups of organic compounds are given.



- (a) Write the condensed structural formula of a compound formed by using one among them. 1
- (b) Illustrate functional group isomerism by using any two functional groups given above. 2

12. Note the chemical reactions given below.



- (a) Identify the polymerization reaction. 1
- (b) From the products of three reactions given find out ethyl ethanoate. 1
- (c) Give the product of reaction if HCl is used instead of Cl<sub>2</sub> in reaction (ii). 1

13. Some Chemicals are given which need special care while using them:

- (i) Aspirin
- (ii) Bakelite
- (iii) Endosulfan
- (iv) Borosilicate glass.

- (a) Write the significance of any one of them in daily life. 1
- (b) Explain how bakelite becomes the reason for environmental pollution. 2

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