Nov-2015

Seat Number

कणगा - 036

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CHEMISTRY PAPER - II : CH - 112
Organic and Inorganic Chemistry
(113102)

P. Pages : 4

Time : Two Hours

Max. Marks : 60

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. All questions are compulsory.
5. Figures to the right indicate full marks.
6. Use of logarithmic table and non programmable calculator is allowed.

1. A) Attempt **any six** of the following. 6

i) An isomer of Acetone is .....
   a) Ethanol b) Methanol
   c) Propanol d) None of these

ii) Which of the following has smallest atomic size?
   a) Na b) Li
   c) K d) Rb

iii) An aqueous solution whose pH is 2 is .....
   a) Acidic b) Basic
   c) Neutral d) None of these

iv) Which of the following is valence shell electronic configuration of Lithium
   a) $[He]2s^1$ b) $[Ne]3s^1$
   c) $[Ar]4s^1$ d) $[Kr]5s^1$

v) The IUPAC name of $CH_3-O-C_2H_5$ is .....
   a) Ethyl methyl ethane b) Methoxy ethane
   c) Ethoxy methane d) Methyl ethyl ethane

vi) Which of the following represent conjugate Acid-Base pairs?

a) H_2O, H_3O^+ b) $\overline{O}H, HNO_3$

c) H_2SO_4, SO_4^{2-} d) NH_4^+, H^+

vii) ..... is the aliphatic hydrocarbon.

a) Benzene b) Naphthalene

c) Both a & b d) Methane

viii) $CH_3 - CH = CH_2 + HI \longrightarrow CH_3 - \underset{\underset{|}{I}}{CH} - CH_3$

above reaction follows .....

a) Markovnikov's rule b) Anti Markovnikov's rule

c) Both a and b d) None of these.

b) Attempt **any six** of the following. 6

i) Write structural formula of 2-propanol.

ii) Give the valence shell electronic configuration of calcium.

iii) Define the term neutralization.

iv) Give the application of buffer solution.

v) Give the IUPAC name of CHI_3.

vi) Define solvent.

vii) Write the balance chemical reaction for water with Lithium.

viii) Define calorific value.

2. Answer **any six** of the following. 12

a) Give the IUPAC name of following compound (any two).

i) $CH_3 - CH = CH - CH_3$

ii) CHO–CHO

iii) C_2H_5SH

b) Discuss in brief about distillation.

c) Calculate the pH of 0.2 m HCl assuming that HCl is completely ionised under given condition.

d) Discuss any two properties of solvent.

e) Give any two physical properties of alkene.

f) Complete the following reaction

$$CH_3 - CH = CH_2 + O_3 \xrightarrow{CCl_4} \text{'A'} \xrightarrow{H_2O/Zn} \text{'B'}$$

g) Define and explain pOH.

h) Define and explain isomerisation of alkene.

i) Define and explain degree of dissociation.

3 Answer **any four** of the following. 12

a) What is the action of following reagent on propene.

i) HBr / Peroxide. ii) HBr / No peroxide.

b) Discuss the procedure of sublimation.

c) Write a note on electromeric effect.

d) Write any three properties of Be which make it anomalous in the group.

e) Give any three IUPAC rules for nomenclature of alkenes.

f) Discuss in brief the solution of alkali metals in liquid NH_3.

4. Answer **any three** of the following. 12

a) Derive an equation

$$pOH = pKb + \log \frac{[Salt]}{[Base]}.$$

b) Write the structural formula of any two of the following.

i) 2-Bromo-3-Chlorobutane.

ii) 1, 3-dimethyl Cyclohexane.

iii) 2-Methoxy Propane.

c) Give the IUPAC rules for nomenclature of alcohol.

d) Discuss about homolytic and heterolytic bond fission.

e) Write a note on ionic product of water.

5. Answer **any two** of the following. **12**

a) What is resonance effect? Give the rules for writing resonance?

b) Define buffer solution. Give the mechanism of action of basic buffer.

c) What are hydrocarbons? Give its classification. Explain any two methods for the prepartion of alkane.

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