[Additional Exam]

Chemistry P-II
F.Y.B.Sc
Sem - II

14/05/2015

CHEMISTRY P-II F.Y.B.Sc SEM-II MARKS:75 TIME 2.5HRS

TE: i) All the questions are compulsory.
ii) Figures to right indicate full marks.
iii) Use of non –programmable calculator / log table is allowed.

Attempt any four: **[20]**

A) Explain the following properties of main group elements.
a) electronegativity b) metallic and non-metallic character.
B) What is diagonal relationship? Explain it in detail.
C) Write a note on anamolous behaviour of Beryllium.
D) What are carbides? Describe general characteristics of carbides.
E) What are hydrides? Discuss classification of carbides.
F) Define nitrides. Give classification of nitrides.
G) What is common name and chemical formula of following compounds.
a) sodium carbonate b) sodium hydroxide c) sodium bicarbonate d) sodium chloride
e) calcium oxide.
H) Give five uses of calcium oxide.

Attempt any four: **[20]**

A) Explain Arrhenius concept of acid-base theory Give applications of it.
B) Explain Lux-Flood concept of acid-base theory
C) Explain following terms with examples a) erythro isomers b) threo isomers.
D) Explain hard and soft acid and base (HSAB) concept.
E) Define following terms;
a) chain isomers b) position isomers c) optical isomers d) geometrical isomers
e) functional isomers.
F) What is Pearson's principle? Write down applications of HSAB concept.
G) Explain Usanovich concept; Give advantages and limitations of Usanovich concept.
H) Write a short note on enantiomers.

Attempt any four: **[20]**

A) Define following terms with examples.
a) addition reaction b) elimination reaction
B) Explain mechanism of SN^1 reaction with energy profile diagram.
C) What are the factors affecting SN^1 and SN^2 reaction?
D) What is Friedel-Craft alkylation? Explain its mechanism.
E) State Markownikoff's rule with two examples.
F) What is E^1 reaction? Explain its mechanism.
G) Give any two methods of preparation of alkanes.
H) Explain mechanism of free radical chlorination of propane.

Q.4. Attempt any three: **[15]**

A) Write a note on green house effect.

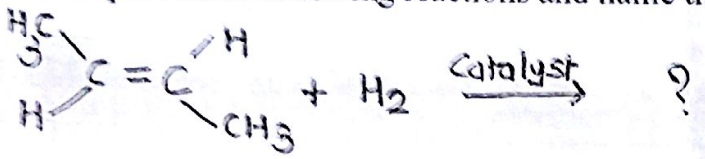
B) Explain solvent-solute system (Autoionization/ Autodissociation concept).

C) What is E^2-reaction? Explain its mechanism.

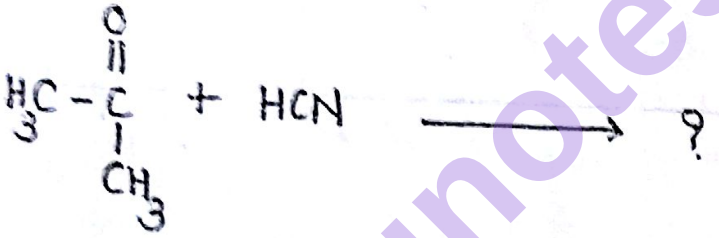
D) Explain Lewis concept of acid – base theory.

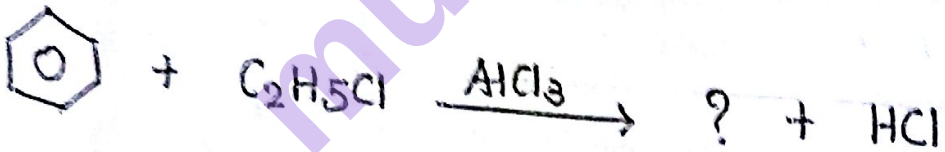
E) Write the occurrence, physical and chemical properties of sodium carbonate.

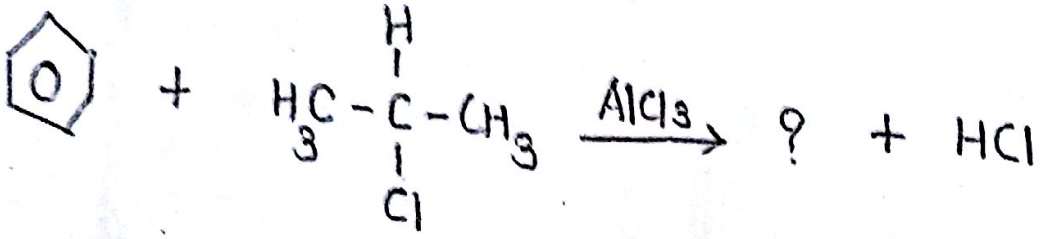
F) Predict the product of following reactions and name the product.

1) 

2) $CH_3-CH_2-Cl + KOH \xrightarrow{Alcohol} ? + KCl + H_2O$

3) 

4) 

5) 

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