F Y Bsc - Maths
A.T.K.T F.Y.B.Sc.-chemistry-I Library
Sem - I - 2015-16

Note : 1) All the questions are compulsory.
2) Figures to right indicate full marks.
3) Use of non-programmable calculator / log table is allowed.

Q. 1 Attempt of the questions : (Any Four) 20

1) Explain Bohr's Theory.
2) Write down the classification of elements on the basis of their electronic configuration.
3) Explain ionic bonding.
4) Write down the general characteristics of ionic compound.
5) Write a note on metallic bond.
6) Write down Lewis electron dot structure of NF_3 and NO_2.
7) Discuss molecular geometry and shape of the following molecule :
   a) SF_6 b) BCl_3
8) Write down the effect of :
   i) Size of ion ii) charge of ion on polarizations of ion

Q. 2 Attempt of the questions : (Any Four) 20

1) Explain following terms :
   i) Inductive effect ii) Hyperconjugation
2) Explain SP^3 hybridization of carbon atom in detail.
3) Distinguish between hyperconjugation and resonance.
4) Explain SP^3 hybridization of oxygen in detail.
5) Distinguish between sigma bond and pi bond.
6) Explain the following terms :
   i) Hyper conjugation ii) Electromeric effect
7) Explain SP^3 hybridization of Nitrogne.
8) Distinguish between inductive effect and electromeric effect.

Q. 3 Attempt of the questions : (Any Four)

1) Define carbocation. Explain its shape and structure.
2) Give IUPAC nomenclature of following compound.
   i) $CH_3 — CH_3$ ii) $H_3C — \overset{\overset{O}{\|}}{C} — H$
   iii) $H_5C_2 — O — C_2H_5$ iv) $CH_3 — CH_2 — CH_2 — OH$
   v) $H_3C — NH_2$
3) Give any two methods for the formation of free radical.
4) Differentiate between Homolytic fission and Heterolytic fission.
5) Differentiate between Carbocation and Carbanion.
6) Define Carbanion. Explain its Shape and Structure.
7) Explain Lowry Bronsted concept of acid and bases.

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8) Write the structure of following compound :

i) Ethanol ii) Propane v) 2-Butene

iii) Chloromethane iv) Ethanamine

Q. 4 Attempt of the questions : (Any Four)

1) Discuss the molecular geometry and shape of following molecule :

a) $BeCl_2$ b) CH_4

2) Explain the term effective nuclear charge.

3) Explain the SP^2 hybridization of oxygen.

4) Explain the SP^2 hybridization of carbon.

5) Differentiate between electrophile and nucleophile.

6) Give IUPAC Nomenclature of following compound.

i) $CH_3 - CH_2 - Br$

ii) $H_3C - \overset{\overset{O}{\|}}{C} - CH_3$

iii) $CH_3 - CH_2 - CH_3$

iv) $H_2C = CH - CH_2$

v) $CH_3 - OH$

—— The End ——

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