Seat Number

शार्थ - 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. Figure to the indicate full marks.
6. Use of logarithmic table and programmable calculator is allowed.

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

i) In heterolytic fission.....

a) Electron pair carried by less electronegative atom
b) Formation of cations & anions occurs
c) Bond breaks up symmetrically
d) Free radicals are formed

ii) In green plants..... is important part of Chlorophyll.

a) Na^+ b) K^+
c) Ca^{2+} d) Mg^{2+}

iii) BF_3 molecule is.....

a) Bronsted acid b) Lewis acid
c) Bronsted Base d) Lewis base

iv) Valence shell of alkali metals contain..... electrons.

a) 1 b) 2
c) 3 d) 4

v) The IUPAC name of the $CH_3 - CH_2 - CN$ is.....

a) Ethyl Cyanide b) Propane nitrile
c) Ethane Cyanide d) Ethane nitrile

vi) An aqueous solution whose pH is 7 is.....
a) Acidic b) Basic
c) Neutral d) None of these

vii) Which of the following is alicyclic compound?
a) Hexane b) Hexene
c) Cyclohexane d) None of these

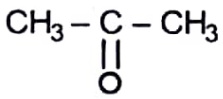
viii) Nitration of ethane at 450°C produces.
a) Nitroethane b) Nitromethane
c) Both a & b d) None of these

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

i) Write the structural formula of cyclohexanol.

ii) Write the electronic configuration of potassium (at no. 19).

iii) Define buffer solution.

iv) Give the IUPAC name of 

v) Name the two different protic solvents.

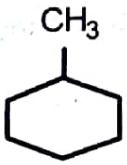
vi) Define pH.

vii) Give the reaction of sodium with air.

viii) Define hydrocarbon.

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

a) Give the IUPAC name of following compound any-2.

i) 

ii) $CH_3 - \underset{\underset{CH_3}{|}}{CH} - CH_2 - CH_2 - CH_3$

iii) $CH_3 - \underset{\underset{NH_2}{|}}{CH} - CH_3$

b) Explain with suitable example of amphoteric solvents.

c) Define Arrhenius acids & bases.

d) Define stereoisomerism. Give its types.

e) State Markovnikov's rule.

f) Write the balanced reaction when acetylene is treated with chlorine.

g) What is neutrilisation reaction.

h) What are strong acids? Give examples.

i) State Saytzeff rule.

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

a) Write note on Wurtz reaction.

b) Define isomerism. Give the types of isomerism.

c) Define solvents. Write a note on Basic Solvents.

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

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

f) Give the biological role of Mg^{2+} & Ca^{2+}.

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

a) What are buffer solvation? Give the properties of buffer.

b) Write the structural formula of any two of the following.
   i) 2-Pentanone
   ii) Phenyl cyanide
   iii) Methoxy methane

c) Give the IUPAC rule for nomenclature of alkane.

d) Explain nucleophile and electrophile with suitable example.

e) Describe Lewis theory of acids and bases.

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

a) Define degree of dissociation. Explain the factors affecting on degree of dissociation.

b) Write a note on isomerism and combustion of alkane.

c) What is inductive effect? Explain with suitable example. Explain + I & –I effect.

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