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RN-8139

B. E. - II (Sem. III) (T.P.) Examination

May / June – 2010

Organic Chemistry

(As per New GTU Syllabus)

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. - 2 (Sem. 3) (T.P.)**

Name of the Subject :

☛ **Organic Chemistry**

☛ Subject Code No. : **8 1 3 9** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Give reactions and neat diagram wherever necessary.

(3) Use **separate** answer book for each section.

(4) Question 1 and 4 are **compulsory** which carries **20** marks each and question 2, 3 and 5, 6 are of 15 marks each.

SECTION - I

1 (a) Fill in the blanks: **10**

(i) Carbon undergoes large number of organic compounds due to _____.

(ii) The electronic configuration of sodium is _____.

(iii) _____ forms due to homolytic fission.

(iv) The distance between the two elements in an organic molecule is termed as _____.

(v) Inductive effect is due to _____.

(vi) Phenol forms by treating benzene with propylene is through _____ process.

(vii) Freons are _____.

(viii) Like dissolves _____ in an organic solvents.

(ix) Diazotisation reaction is carried out at _____ temperature.

(x) _____ reagent is used in Sandmeyer reaction.

(b) Explain the Nucleophillic substitution reaction with examples and mechanism. **5**

(c) Write two general methods of preparation along with its properties and uses of carboxylic acids. **5**

2 Write any **three** : **15**

(a) Explain the contribution of Bohr's and Schrodinger in formation of atomic and molecular orbital concept.

(b) Explain the formation of ester and its derivative with its properties and uses.

(c) Write two preparation, properties and uses of

(i) Acetaldehyde

(ii) Chloroform.

(d) Write a note on hybridisation.

(e) Explain homolytic and heterolytic fission in detail.

3 Write any **three** : **15**

(a) Explain what is protic and non protic solvent in detail.

(b) Explain the importance of electrometric and inductive effect.

(c) Write in detail the different types of organic reactions.

(d) Write a note on electrophillic addition reaction.

(e) Write two general methods of preparation, properties and uses of alkylhalides.

SECTION - II

4 (a) Fill in the blanks : **10**

(i) Anthracene is a _____ compound.

(ii) Naphthalene is prepared by Haworth's reaction using _____ and _____.

(iii) Optical isomers can be able to rotate the _____.

(iv) Assymetric carbon is also known as _____.

(v) _____ instrument is used to measure the optical activity of the solution.

(vi) _____ method is used to distill the liquid under the reduced pressure.

(vii) Nitro compound can be analysed by carrying out _____ test.

(viii) Aromaticity can be defined by Huckel rule as _____.

(ix) Heterocylic compound undergoes _____ reaction.

(b) Write a note on purification techniques of solid. **5**

(c) Define isomerism. Explain the functioning of polarimeter. **5**

5 (a) Explain polynuclear hydrocarbons. Write in detail the preparation properties and uses of Anthracene. **8**

OR

(a) Define geometrical isomerism. Explain in brief the geometrical isomerism with suitable examples. **8**

(b) Compare structural isomerism and stereo isomerism in detail. **7**

6 Answer any **three** : **15**

(a) Distinguish aldehyde and ketones with various tests.

(b) Explain the optical activity of tartaric acid.

(c) Write the preparation, properties and uses of

(i) Furan

(ii) Pyridine

(d) Explain the different qualitative test to identify the presence of N,S and Halogen in an organic compound.