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RN-6291

B. E. - II (Sem. III) (Textile Processing) Examination

May / June – 2010

Organic Chemistry

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. : 6 2 9 1 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

(2) Q.1 and 4 are **compulsory** and carries 20 marks each.

(3) Give reactions and neat diagram whenever necessary.

(4) Use separate answer book for each section.

SECTION - I

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

(i) The attacking reagents are termed as _____ and _____.

(ii) The U.V. region in electromagnetic radiation is ranging from _____ nm.

(iii) An anti Markonikoff's rule is used to conduct the unsymmetrical alkenes and addition of HBr reaction is due to _____.

(iv) _____ reactions are molecular in nature.

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

(vi) Lewis bases are usually considered as _____.

(vii) The formation of _____ radical is due to heterolytic fission.

(viii) Reaction intermediates formed during the course of the reaction by the heterolytic fissions are _____ and _____.

(b) Explain protic and aprotic solvents. **5**

(c) Explain inductive effect during the reaction. **5**

2 Attempt any **three** : **15**

(i) Discuss C = 0 bonded compounds in detail. Explain carboxylic acid with reactions.

(ii) Give information about nucleophilic addition and substitution in detail.

(iii) What is C-X bonded compound? Explain aryl halides in detail.

(iv) Write preparation, properties and uses of any one aldehyde.

3 Attempt any **three** : **15**

(a) Explain Homolytic and Haterolytic fission in detail.

(b) Discuss few organic reactions in detail.

(c) Write properties, preparations and uses of one Ester.

(d) What is the difference between alcohols and phenols? Explain any one phenol in detail.

SECTION - II

4 (a) Write true or false : **10**

(i) Pyrrole is a five membered ring that contains nitrogen.

(ii) Those substances when heated pass directly from solid to vapour state without melting can be purified by sublimation.

(iii) Aniline is purified by fractional distillation process.

(iv) The organic compounds having ability to rotate the plane of polarized light are said to be geometrical isomers.

(v) The trans isomer is one in which two similar groups are on opposite side of double bond.

(vi) The organic liquids which decompose before boiling point are reached, are purified by distillation carried out under reduced pressure.

(vii) β-Naphthol gives sooty green flame on ignition.

(viii) Pyridine is aromatic in nature.

(ix) 'N' in an organic compound is detected by silver mirror test.

(x) Anthracene is tricyclic polynuclear hydrocarbon.

(b) Define the terms : **5**

(i) Plane polarised light

(ii) Specific rotation

Explain optical isomerism of lactic acid.

(c) What is aromaticity? Explain the aromatic character of pyrrole and furan. **5**

5 (a) Write structural formula of **9**

(i) Naphthalene

(ii) Anthracene

(iii) Phenanthrene.

How will you prepare the following compounds from naphthalene?

(i) β-Naphthol

(ii) Anthranilic acid

(b) Write brief notes on : **6**

(i) Steam distillation

(ii) Gas chromatography

OR

(b) Define the following terms : **6**

(i) Geometrical isomerism

(ii) Enantiomers

(iii) Diastereomers

(iv) Metamerism.

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

(a) How is pyridine synthesized? Describe its important reactions.

(b) Write a brief note on "fractional distillation".

(c) Explain : How would you detect nitrogen and sulphur in the given organic compound.

(d) Explain Geometrical isomerism with suitable example.
