

Rajiv Gandhi University of Health Sciences, Karnataka

I Year Pharma-D Examination - Aug / Sep 2011

Time: Three Hours

Max. Marks: 70 Marks

PHARMACEUTICAL ORGANIC CHEMISTRY

Q.P. CODE: 2854

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two)

2 x 10 = 20 Marks

- Write briefly on the structure of carboxylate ion. Discuss the effect of substituents on the acidity of carboxylic acids. Write a note on how carboxylic acids can be converted into their derivatives
- What is Markonikov's rule? Give an account on the different reactions involving Markonikov's addition. Explain the mechanism, orientation and reactivity for the addition of hydrogen halides to alkenes
- What are SN_1 and SN_2 reactions? Explain their mechanism. Give an account on the various factors that influence SN_1 and SN_2 reactions

SHORT ESSAYS (Answer any Six)

6 x 5 = 30 Marks

- Explain the concept of aromaticity and Huckel's rule
- Discuss the classification and stability of carbocations
- What is meant by orientation in aromatic nucleus? Using resonance theory explain the orientation in nitrobenzene
- With the help of suitable examples explain the term hyperconjugation
- Give the structure and uses of – a) Mephenesin b) Saccharin Sodium c) Tartaric acid d) Benzyl Benzoate e) Glyceryl trinitrate
- Give the mechanism involved in – a) Benzoin condensation b) Crossed Cannizzaro's reaction
- Give three methods for the preparation of cycloalkanes. Explain why the lower cycloalkanes are less stable than cyclohexane
- Explain a) Saytzeff's eliminations b) Mechanism of nitration of benzene

SHORT ANSWERS

10 x 2 = 20 Marks

- What is Knoevenagel reaction? Give an example
- What are conjugate acid-base pairs? Explain with an example
- Comment on – "Ethanol and Dimethyl ether are isomers, but differ in their boiling points"
- Define and classify electrophiles, give examples
- Give the principle involved in the assay of Aspirin
- Give four differences between $E1$ and $E2$ reactions
- Give the steps involved in the conversion of Aniline into para-nitro aniline
- Give the structural formulae for a) 3-Methyl-1-penten-4-yne b) 5-Hydroxy-3-hexenal
- Give the synthesis and uses of Lactic acid
- Give the IUPAC names for a) $H_2N-CH_2-CH_2-C(=O)-CH_2-OH$ b) $CH_3-C(=O)-CH_2-CH(NO_2)-COOH$
