

# Rajiv Gandhi University of Health Sciences, Karnataka

I Year Pharma-D Examination – Mar 2013

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

1. a) Give an account on Markonikov's and Anti Markonikov's additions to alkenes, giving examples.  
b) Explain the mechanism and orientation involved in the hydration of alkenes
2. Give the method of preparation and uses of the following  
a) Benzyl benzoate b) Lactic acid c) Saccharin sodium d) Methyl salicylate e) Dimercaprol
3. a) Discuss the resonance and orbital descriptions of Allyl cation.  
b) Explain hyperconjugation and its importance in the study of stability of carbocations and free radicals.

#### SHORT ESSAYS (Answer any Six)

6 x 5 = 30 Marks

4. Discuss the mechanism of Friedel-Craft's alkylations in benzene. What are their limitations?
5. Write a note on the acidity of carboxylic acids.
6. Discuss the conditions that favour unimolecular substitution over bimolecular substitution in Alkyl halides. <https://www.rguhsonline.com>
7. Write a note on Heat of hydrogenation and compare the stability of alkenes.
8. Explain the concept of aromaticity and Huckel's rule with examples.
9. Define and classify isomerism with examples.
10. Write a note on Elimination Vs Substitution.
11. Explain the orientation and rearrangements involved in E<sub>1</sub> reactions.

#### SHORT ANSWERS

10 x 2 = 20 Marks

12. Draw the structural formula for the following:  
a) trans-1,2-dichloroethene b) 1-Penten-4-yne
13. Explain the term "Polarity of bonds".
14. What is crossed Aldol condensation? Give the equation.
15. How will you assay dimercaprol?
16. Draw the structural formula for the following:  
a) 2-Methyl-2butene b) 2,5-Dimethyl-2-hexene.
17. Arrange the free radicals in their order of stability.  
a) Vinyl, CH<sub>2</sub>=CH b) Allyl, CH<sub>2</sub>=CH-CH<sub>2</sub> c) Benzyl, C<sub>6</sub>H<sub>5</sub>-CH<sub>2</sub>
18. Give the Lowry-Bronsted and Lewis theory of acid and base.
19. Give the structure and uses of  
a) Chlorbutol b) Tartaric acid
20. Classify amines with examples and structures.
21. Distinguish between intra and intermolecular hydrogen bonding. Give examples.

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