

Q.P.Code 104013

Reg. No.:.....

First Year B.Sc Optometry Degree Examinations - September 2014

CHEMISTRY

Time : 3 hrs

Max marks : 80

- **Answer all questions**
- **Draw diagram wherever necessary**

Essay: (2x15=30)

1. Discuss the shapes of methane, ethane, ethene and ethyne in terms of hybridization
2. Explain the preparation, properties and application of emulsions

Short notes (5x5=25)

3. Describe various methods for the resolution of racemic mixtures
4. What are carbocations. Arrange the following according to their increasing order of stability. $(\text{CH}_3)_3\text{C}^+$, $(\text{CH}_3)_2\text{CH}^+$, CH_3CH_2^+ and CH_3^+ and explain your answer
5. Discuss the molecular orbital structure of benzene.
6. Thin layer chromatography.
7. What is a buffer solution. Mention one example of a basic buffer and explain its buffer action.

Answer briefly (10x2=20)

8. Explain electrometric effect with example.
9. Classify the following as electrophiles and nucleophiles (OH^- , NO_2^+ , water and ammonia)
10. What conditions should be fulfilled by a compound to exhibit geometrical isomerism.
11. Draw the optical isomers of lactic acid
12. How will you convert benzene into acetophenone
13. Glucose forms oxime with NH_2OH but glucose penta_ acetate does not. Explain
14. Mention the hydrolysis products of lactose and maltose.
15. The preparation of sulphapyridine.
16. Define the term elution and eluent.
17. What are the biochemical functions of vitamin B_{12} .

Fill in the blanks (5x1=5)

18. Homolytic fission of a covalent bond leads to the formation of _____
19. Optical inactivity of racemic mixture is due to _____ compensation
20. Glucose reacts with excess of phenyl hydrazine and forms _____
21. Carbohydrate which is essential constituent of plant cells is _____
22. _____ is the carbohydrate found in blood
