



# ADITYA DEGREE COLLEGES ANDHRA PRADESH

II SEMESTER - PREFINAL EXAMINATIONS

I B.Sc - CHEMISTRY

Max. Marks : 75  
Time : 3 Hours

Date: 26-03-2019

## SECTION - A

I. Answer any FIVE questions from the following 5X5= 25M

1. Derive Bragg's law ?
2. State and explain law of corresponding states.
3. Discuss the applications of liquid crystals.
4. State and explain Henry's law.
5. Write the preparation and uses of gels.
6. Write the differences between physical adsorption and chemical adsorption.
7. Discuss the structure of  $Ni(CO)_4$ .
8. Write a note on relative configuration.

## SECTION - B

II. Answer ALL Questions 5X10=50M

9. a) Explain the law of symmetry and law of constancy of interfacial angles regarding crystal structure.

(OR)

b) Write an essay on crystal defects.

10. a) Deduce the relation between Vanderwaal's Constants and Critical Constants.

(OR)

b) What are liquid crystals ? Explain different types of liquid crystals.

11. a) What is meant by critical solution temperature ? Explain the upper CST and lower CST systems with one example.

(OR)

b) State and explain Nernst distribution law and write its applications.

12. a) Discuss the optical and electrical properties of Colloids.

(OR)

b) Construct the molecular orbital diagrams for  $O_2$  and CO molecules.

13. a) What is optical isomerism ? Explain the conditions to exhibit optical isomerism.

(OR)

b) Write notes on the following. (i) E-Z Configuration (ii) Enantiomers.