ADITYA DEGREE COLLEGES
ANDHRA PRADESH
IV SEMESTER - PREFINAL EXAMINATIONS
II B.Sc - CHEMISTRY

Date: 11-03-2019

Max. Marks : 75
Time : 3 Hours

SECTION - A

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

1.   Explain the terms (a) Transmittance   (b) Absorbance

2.   Explain chromophore and auxochrome with examples.

3.   Write a short note on fingerprint region.

4.   Explain chemical shift in NMR spectroscopy.

5.   State and explain Raoult's law.

6.   State and explain Ostwald's dilution law.

7.   Write about the construction and working of calomel electrode.

8.   Write a short note on freezing mixtures.

SECTION - B

II. Answer ALL Questions   **5X10=50M**

9.   a) Write about the application of Beer-Lambert's law for quantitative analysis of chromium in potassium dichromate.

(OR)

b) Explain different types of electronic transitions.

10.   a) How do you interpret the infrared(IR) spectrum of alcohols and carbonyls by taking any one example for each.

(OR)

b) Write the working principle of NMR spectroscopy. Explain NMR spectrum of ethyl bromide.

11.   a) How do you determine the molecular weight of a non-volatile solute by elevation of boiling point method.

(OR)

b) (i) Define osmotic pressure and how molecular weight of a non volatile solute is determined using osmotic pressure.

   (ii) Explain any one experimental method to determine osmotic pressure of a solution.

12.   a) What is kohlrausch's law? Discuss any two applications of the law.

(OR)

b) What is meant by transport number? How do you determine transport number by Hittorf's method.

13.   a) Write an essay on potentiometric titrations.

(OR)

b) Define phase rule and explain the terms involved in the phase rule with examples.