No. of Printed Pages : 02 **Roll No. .....**

D514

Dual Degree B. Sc. (Hons.) Chemistry–M. Sc. Chemistry

EXAMINATION, 2020

(Fourth Semester)

(Main & Re-appear)

CHEMISTRY–IV

DCH214

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) Define different types of error in analytical methods.

(b) Explain the R_f value.

(c) Define the ion exchange equilibria.

(d) Write short note on dynamics of chromatography.

(e) Write the different types of extractant system. **3×5=15**

Unit I

2. Explain the precision by taking a suitable example. **15**

3. A random sample of 10 observations shows a mean of 4.13 with a standard deviation of 0.189. Calculate whether the sample values deviate from the mean of 4.0 **15**

Unit II

4. Explain the basic principle of thin layer chromatography and discuss its important applications. **15**

5. Discuss the principle of Adsorption Chromatography and explain the factors affecting the column efficiency. Give the applications also. **15**

Unit III

6. Explain the mechanism of cation exchange technique by taking the example and write its applications. **15**

7. Explain the different ion exchangers and give their characteristics. **15**

Unit IV

8. Explain the different methods for solvent extraction technique. **15**

9. Write the basic principle of solvent extraction technique and give its application. **15**