Registration No : | | | | | | | | | | |

Total Number of Pages : 01 **M.Sc.I**

FCYE804

8th Semester Regular/Back Examination 2018-19
INST. METHODS. OF CHEMICAL ANALYSIS-II
BRANCH : M.Sc.I(AC)
Time : 3 Hours
Max Marks : 70
Q.CODE : F408

Answer Question No.1, which is compulsory, and any FIVE from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions :** **(2 x 10)**

a) What is the basic differences between DTG and DTA?
b) What information will be found out from thermogravimetry(TG).
c) What do you meant by the term fluorophores?
d) Write down important application of fluorescence spectroscopy
e) Why CD is used to study the structural characterization of peptides.
f) State advantage and limitations of circular polarization of light.
g) Draw the Current/voltage curves for (a) an electrolytic and (b) a galvanic cell.
h) The cell ($Ag_{(s)}$, $AgCl_{(aq)}$, Cl^-(0.2M),Cd(0.005M) Cd^{2+}) is used for the determination of Cd in the presence of Cl^-ions in anelectrogravimetric method. Calculate the applied potentials when current of 1 mA is developed in cell. Assume that the internal resistance of the cell is 30 Ohm.
i) State Ilkovic equation and terms involved in it.
j) Illustrate Conductometric titration of acid and bases.

Q2 **a)** Discuss types of radiation detectors and principle of detection. **(5)**
b) Describe the tracer techniques for radiochemical method. **(5)**

Q3 **a)** Illustrate the instrumentation for fluorescence spectroscopy. **(5)**
b) Write down the principle of circular dichroism (CD). **(5)**

Q4 **a)** Describe instrumentation, techniques, and application of coulometry. **(5)**
b) Describe instrumentation, techniques, and application ofpolarography. **(5)**

Q5 **a)** Describe instrumentation, techniques, and application of conductometry. **(5)**
b) Discuss the growth of radioactivity during irradiation process. **(5)**

Q6 Describe the instrumentation and techniques for chemical analysis by using Differential gravimetric analysis (DTG) and Differential thermal analysis (DTA). **(10)**

Q7 Describe instrumentation, techniques, and application of voltammetry. **(10)**

Q8 **Write short answer on any TWO :** **(5 x 2)**

a) Fluorescence quenching.
b) Decay reactions.
c) Electrogravimetry.