2021

B.A./B.Sc. Semester III Honours Examination

University of Calcutta

CHEMISTRY

Paper CC6

(PRACTICAL)

F.M. 30

FAKIR CHAND COLLEGE CENTRE (551)

[Use A4 pages and black ink only for writing answers. Write Roll number and Registration number at the top and page number at the bottom of each page. Images of answer script and admit card must be in a single pdf file.]

The figures in the margin indicate full marks.

1. For the estimation of the quantity of Ca^{II} and Mg^{II} present separately in a mixture in g/L :

   (a) Write down the principle of estimation mentioning all the equations involved and derive the working formula. 15

   (b) Using the following data calculate the strength of ~(M/50) EDTA solution. 2½+2½

   (i) 1.1829 g of Zn-acetate dihydrate has been accurately weighed, transferred to a 250 mL volumetric flask and volume is made up with distilled water in presence of NH_4Cl.

   (ii) Standardization of ~ (M/50) EDTA by standard Zn-acetate.

No. of titrations	Volume of standard Zn-acetate taken (mL)	Burette reading of EDTA solution (mL)			
		Initial	Final	Difference	Most frequent reading
1	25	0	25.3	25.3	25.3
2	25	0	25.4	25.4	
3	25	0	25.3	25.3	

   (c) Using the above standardization data, calculate separately the amount of Ca^{II} and Mg^{II} in g/L by using the following specimen results. 5+5

   (i) Table for estimation of (Ca^{II} + Mg^{II}):

No. of titrations	Volume stock solution taken (mL)	Burette reading of EDTA solution (mL)			
		Initial	Final	Difference	Most frequent reading
1	25	0	44.5	44.5	44.5
2	25	0	44.5	44.5	
3	25	0	44.6	44.6	

(ii) Table for estimation of Ca^{II} :

No. of titrations	Volume stock solution taken (mL)	Burette reading of EDTA solution (mL)			
		Initial	Final	Difference	Most frequent reading
1	25	0	21.7	21.7	21.7
2	25	0	21.6	21.6	
3	25	0	21.7	21.7	