B.A. / B.Sc. PART II EXAMINATION, 2020
FAKIR CHAND COLLEGE CENTRE (551)

INSTRUCTIONS FOR CANDIDATES

READ ALL THE INSTRUCTIONS CAREFULLY BEFORE WRITING ANSWERS

1. Total **TIME OF EXAMINATION: 2 HOURS**

2. **Candidates Have To Answer Group A & Group B In Separate Pages And Prepare A Single pdf File By Scanning Clearly And Serially (According To Page Numbers).**

3. **ATTACH THE UNIVERSITY REGISTRATION CERTIFICATE** As The Last Page Of The pdf File

4. Use Only **WHITE PLAIN A4 PAPERS** For Writing Answers

5. Use **ONLY BLACK INK** For Writing Your Answers

6. Give **A TOP PAGE** With Clear Mention Of University **REGISTRATION NO.**

7. **GIVE PAGE NO.** At The Top Right/Middle Of Each Page

8. Give **AT LEAST 1CM MARGINS** In All The Four Sides Of Each Page

2020
B.A. /B.Sc. Part II Examination
University of Calcutta
CHEMISTRY – HONOURS
Paper: IVB
F.M. 25

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FAKIR CHAND COLLEGE CENTRE(551)

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Group A

*Answer Question 1 (compulsory) and **any three** questions from the following Question no. 2 – 6:*

1. State the role of Z-R reagent in the estimation of Fe(III) permanganometrically.   3½

2. Write down the redox reactions involved in the standardization of sodium thiosulphate solution using standard potassium dichromate solution.   3

3. State the role of ammonium bifluoride in the estimation of Cu(II) in the Fe(III) and Cu(II) mixture solution using standard potassium dichromate solution.   3

4. Why sodium thiosulphate cannot be used as a primary standard?   3

5. Why is zinc acetate dissolved in 2% ammonium chloride solution?   3

6. Why during the standardization of $KMnO_4$, using Oxalic acid solution, a particular temperature (about $60 – 70\ ^0C$) has to be maintained?   3

Group B

*Answer Question 7 (compulsory) and **any three** questions from the following Question no. 8 – 12:*

7. Draw the conductometric titration plot of   a) *HCl* vs *NH₄OH*   b) *CH₃COOH* vs *NaOH*.   3½

8. What is dilution error? How it can be rectified?   3

9. 10 ml (N/100) *HCl* is diluted to 100 ml in a volumetric flask with water, calculate the P^H of the resulting solution.   3

10. Write down the Nernst equation at 30^0C temperature for the potentiometric titration of *AgNO₃* with *KCl*.   3

11. What is λ_{max}? Give its significance.   3

12. Define Lambert Beer's law: 3