

CITY COLLEGE

(University of Calcutta)

B.Sc. Part – III (I+I+I) Honors Practical (Online) Examination, 2020

Subject: Physical Chemistry(CEMA)

Paper: VIIB(Physical Chemistry Short Practical Examination)

Full Marks : 25

Paper: VIIB Physical Chemistry Short Practical Experiment (20 marks)

Q.1. Determination of viscosity coefficient of a solution with Oswald viscometer.

- a) Write down the theory of the above experiment.
- b) Record the room temperature.
- c) Find out the relative viscosity of the solution using the following data:
 - i) Specific gravity of the solution : 1.0435
 - ii) Specific gravity of the half diluted solution : 1.0224
 - iii) Required time of flow of water, solution and half diluted solution are 141, 216 and 170 sec respectively and calculate the relative viscosity of the solution.

Send the image of your Answer script as a PDF format mentioning the CU Roll No and Registration No. and date through your mail to the specific mail id which was given in the college website.

Q.2. Internal assessment. (5 marks)

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B.Sc. Part – III (I+I+I) Honors Practical (Online) Examination, 2020

Subject: Physical Chemistry(CEMA)

Paper: VIIB(Physical Chemistry Long Practical Examination)

Full Marks : 50

Paper VIIB : Physical Chemistry Long Experiment and Lab Quiz.

Q.1. Find the Critical Solution Temperature (CST) and the composition(w/w percent) of the phenol and the unknown aqueous solution at that temperature. **(25 marks)**

- Write down the theory of the above experiment.
- Record the room temperature.
- Find the CST and the corresponding composition at that temperature using the following data.

Composition (w/w percent)	Temperature of the complete miscibility(⁰ C)
62.12%	49.8
55.16%	58.3
49.60%	62.7
45.05%	65.5
38.08%	67.3
32.97%	69.3
29.08%	68.7
26.00%	66.7
23.52%	65.7
21.47%	64.7
19.74%	63.3
18.28%	62.3

Send the image of the Answer Script and graph paper containing proper plot with CST and corresponding composition (%) as a PDF format along with signature, date and CU Roll No. and Registration No. in your graph paper through your mail to the specific mail id which was given in the college website.

Q.2. Internal Assessment.

(15 marks)

Q.3. Lab Quiz

[2×5]=(10 marks)

- a) Does the value of E^0 of a calomel electrode depend on the strength of KCl solution? Explain.
- b) What is the S.I. unit of i) Surface Tension and ii) Viscosity.
- c) Name the system having only a lower CST and has both an Upper and Lower CST.
- d) In the clock reaction between H_2O_2 and KI, is the rate constant K dependent on the KI concentration at all ? Explain.
- e) Why we do not measure equivalent conductance directly?