

BSC CHEMISTRY EXAMINATION-2022

TITLE: QUANTUM CHEMISTRY & SPECTROSCOPY

PAPER CODE: BCH-CC12PR

PHYSICAL CHEMISTRY IV

SEMESTER VI

TOTAL HOURS: 60

CREDITS: 02

Time: 4hrs

MM: 37 marks

Part 1: Attempt any

(10 Marks)

- A. Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$ in a solution of unknown concentration
- B. Determine the amount of iron present in a sample using 1, 10-phenanthroline.
- C. Determine the dissociation constant of an indicator (phenolphthalein).
- D. Analysis of the given vibration-rotation spectrum of HCl(g)

Part 2: Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on Activated charcoal.

(10 Marks)

Viva voce:

(12 Marks)

Lab record:

(05 Marks)