FACULTY OF SCIENCE

BSc – IIIyear- Sem V (Practical Examination)

Subject: CHEMISTRY Paper –VI (Physical Chemistry)

Question Bank

(With effect from 2018-19)

Duration: 3 h **Max. Marks: 25**

Question Paper Pattern:

A. Question for Principle Writing

B. Question for Performing Experiment

A. Questions for the Principle Writing:

Any one among the following may be given:

1. Determine the distribution coefficient of iodine between water and carbon tetrachloride/Determine the molecular status and partition coefficient of benzoic acid in toluene and water.
2. Determine the distribution coefficient of acetic acid between n-butanol and water.
3. Determine the cell constant of a given conductivity cell.
4. Determine the dissociation constant (Ka)/Verify Ostwald's dilution law of acetic acid by conductivity measurements.
5. Verify Beer's law for $KMnO_4$ solution and determination of the concentration of the given solution.
6. Verify Freundlich adsorption isotherm for the adsorption of acetic acid over animal charcoal.
7. Determine the Surface tension of a liquid (density of the liquid, water and surface tension of water are provided).
8. Determine the viscosity of a liquid using Ostwald viscometer (density of the liquid, water and viscosity of water are provided).

B. Question for Performing Experiment:

1. Determine the distribution coefficient of iodine between water and carbon tetrachloride/Determine the molecular status and partition coefficient of benzoic acid in toluene and water.
2. Determine the distribution coefficient of acetic acid between n-butanol and water.
3. Determine the cell constant of a given conductivity cell.
4. Determine the dissociation constant (Ka)/Verify Ostwald's dilution law of acetic acid by conductivity measurements.
5. Verify Beer's law for $KMnO_4$ solution and determination of the concentration of the given solution.
6. Verify Freundlich adsorption isotherm for the adsorption of acetic acid over animal charcoal.

Scheme of Valuation:

A. **Principle Writing:** **05 Marks** (Brief principle with necessary equations, model graph)

B. Experiment: **15 Marks**

Experiment performance with tabulation – 06 Marks

(a minimum of 5 sets of readings in a non-instrumentation experiment or 10 sets of readings in case of instrumentation experiment)

Graph – 05 Marks

Calculations – 04 Marks

Result – 01 Mark

C. Record and Viva: **05 Marks**

TOTAL: **25 Marks**
