Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)
Affiliated to Saurashtra University, Rajkot
SEMESTER END EXAMINATION APRIL – 2017
B.Voc. Pharmaceutical Analysis & Quality Assurance
BVPAQA-202 – PHARMACEUTICAL PHYSICAL CHEMISTRY

Duration of Exam – 2.30 hrs   *Semester – II*   *Max. Marks – 70*

Que. 1 (A) – Answer the following Questions   **[10]**

1. Who coined the term Adsorption for the first time?

2. o-nitro toluene possess _____ dipole moment and p-di nitrobenzene possess _____ dipole moment. (zero, infinite, non-zero)

3. Define: i) System   ii) Surrounding

4. Order of a reaction can be determined Theoretically. True or False?

5. Unit for Rate Constant k of a zero order reaction is _____.

6. Value of viscosity is _____ proportional to the temperature of the system.

7. Capillary rise method can be used to measure Parachor of a liquid. True or False?

8. Work done by system is considered _____ and work done on system is considered ____. (negative, positive, reversible, irreversible)

9. Freundlich Adsorption Isotherm is _____ in nature. (theoretical, empirical, universal)

10. Energy required to break 1 mole bonds of specific type in gaseous state is known as _____.

Que. 1 (B) – Answer the following Questions   **[20]**

1. Describe the term "molecularity" for any chemical reaction with example.

2. Give equation and unit for rate of a reaction.

3. Draw energy diagram for a chemical reaction.

4. Enlist postulates of Langmuir's Adsorption Isotherm.

5. Explain effect of pressure on the solubility of gas in liquid.

6. Deduce unit of rate constant k for any first order reaction.

7. Explain briefly: Snell's Law.

8. Define & exemplify: Intensive properties and Extensive properties.

9. What is inversion temperature? Explain in detail.

10. Differentiate state function and path function with example.

Que. 2 Answer the following Questions (Any Four) **[20]**

1. Explain the term Chemical Kinetics. Write a note on Rate Law for a chemical reaction.

2. Enlist factors affecting rate of reaction. Explain the tem order of reaction in brief.

3. Differentiate between Physisorption and Chemisorption.

4. Enlist applications of adsorption.

5. What is Optical Activity? Explain in brief: Measurement & application of Optical Activity.

6. During an iodimetric titration, observed readings are 24.8 ml, 25.0 ml, 25.2 ml, and 25.0 ml. Calculate mean, mean deviation, relative mean deviation and standard deviation for these data.

Que. 3 Answer the following Questions (Any Four) **[20]**

1. Explain both classifications of Thermodynamic Systems with examples.

2. Write a note on Dipole Moment and its importance in structure determination.

3. What is adsorption isotherms? Explain any one adsorption isotherm in detail.

4. During the measurement of Surface Tension at 25 C temperature and 1 atmospheric pressure, a droplet of unknown solution weighed 0.058 gm and water droplet of same size weighed 0.035 gm. Calculate the surface tension of unknown solution. (Surface tension of water = 71.97)

5. Enlist and explain types of thermodynamic processes.

6. Write a detailed note on Surface Tension.

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