

UKA TARSADIA UNIVERSITY

B.Pharm. (4th Semester)

Subject :030020401-Physical Pharmacy II

Time : 10 am to 1 pm

Duration : 3 Hours

Date : 17/05/2014

Max. Marks : 70.

Instructions:

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures whenever necessary.

SECTION - 1

Q-1 (A) Do as directed.

[07]

- I) Define: Gold number
- II) Explain: Isoelectric point.
- III) Write Stoke's law with equation.
- IV) Comment: Sedimentation rate is increased with increasing viscosity of dispersion medium.
- V) Give the name of any one method used for globule size analysis.
- VI) Explain ligands.
- VII) Give one example of complexes used as drug.

Q-1 (B) Answer the following in brief. (Any 4)

[08]

- I) Explain Faraday Tyndall effect.
- II) What are colloids? Classify colloids based on size of dispersed phase.
- III) What is meant by controlled flocculation?
- IV) Classify types of emulsion. Give two examples of emulsifier.
- V) Classify the complexes.
- VI) Discuss Dielectric constant method for analysis of complexes.

Q-2 Answer the following.

[10]

- A) Write a short note on application of colloids in pharmacy.

OR

- A) Write applications of complexes in pharmacy.
B) Explain sedimentation volume ratio and degree of flocculation.

OR

- B) Write a note on physical stability of emulsion.

Q-3 Answer the following in detail. (Any 2)

[10]

- A) Explain kinetic properties of Colloids.
- B) Describe the theory of emulsification.
- C) Explain formation of quinchrynone complexes & picric acid complexes with examples.

SECTION - 2

Q-4 (A) Do as directed.

[07]

- I) Explain: surface free energy.
- II) Define zeta potential.
- III) Define Half Life & shelf life.
- IV) Define Molecularity.
- V) Define steady state and sink condition.
- VI) Write Noye's – Whitney's equation for dissolution.
- VII) What is Porosity?

Q-4 (B) Answer the following in brief. (Any 4)

[08]

- I) Explain capillary rise method.
- II) Write a short note on surface active agent.
- III) Explain in brief 'First-Order' and pseudo first order reactions.
- IV) Enumerate various methods to determine the order of reactions.
- V) How is dissolution of drugs relevant in study of pharmacy?
- VI) Comment: Dissolution rate is increased with increase in rate of stirring.

Q-5 Answer the following.

[10]

- A) What is spreading Coefficient? Derive its equation.

OR

- A) Discuss various factors affecting on rate of reaction.
- B) Define HLB. Write any two methods for determination of HLB.

OR

- B) Write a short note on dissolution type I apparatus.

Q-6 Answer the following in detail. (Any 2)

[10]

- A) Write about the Nernst and Zeta potential and give its importance in pharmaceutical systems.
- B) Derive the equation for the second order of reaction ($a = b$ and $a \neq b$).
- C) Write and explain Fick's first and second laws of diffusion.