Exam Code: 0433
Sub. Code: 3454

2012

M.Sc. (Applied Chemistry/Pharmaceutical)

Third Semester

Paper – 302: Physical Pharmacy

Time allowed: 3 Hours | Max. Marks: 60

***NOTE**: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Section.*

x-x-x

I a) What is an 'emulsifier'? How does it work?

b) Write the significance of Gibbs adsorption equation in surface chemistry.

c) What is the role of hydrogen bonding in solubility?

d) Why lyophilic colloids are more stable than lyophobic colloids?

e) Discuss the concept of thixotropy.

f) What is the principle of Penetrometer?

g) How shelf life of a drug is determined using Arrhenius plot.

h) How do antioxidants work? (8 x 1.5)

Section- A

II a) Derive Kelvin equation used to determine the change in vapour pressure due to a curved liquid-vapour interface.

b) Enlist various techniques used to determine surface tension and discuss any one technique. (6,6)

III a) Discuss the phenomenon of diffused double layer and give the quantitative treatment of Zeta potential.

b) What do you understand by the term 'Micelles'? How do they differ from reverse micelles? Explain their uses. (6,6)

Section-B

IV a) What do you understand by Gold number? Discuss various factors that affect the stability of a colloidal dispersion.

b) How is the solubility of a drug expressed and measured? (6,6)

V a) Discuss solute-solvent interactions and elaborate the various mechanisms involved in it.

b) What are the applications of solubility curves? (6,6)

Section-C

VI a) Discuss the Brookfield viscometer for the determination of viscosity of liquids.

P.T.O.

b) Discuss the applications of rheology in pharmaceuticals. (6,6)

VII a) Explain the principle and working of Couette viscometer giving its advantages and disadvantages.

b) Distinguish between Newtonian and Non –Newtonian systems giving suitable examples. (6,6)

Section –D

VIII a) What do you mean by shelf life of a drug? How will you determine it by accelerated stability testing?

b) What are organic molecular complexes? Explain using suitable examples. (6,6)

IX a) Describe the influence of light, solvent and catalyst on the stability of drugs. .

b) What are occlusion compounds? Give their applications in pharmacy. (6,6)

x-x-x