Code No: 232AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Pharmacy I Year II Semester Examinations, May/June-2017
PHYSICAL PHARMACY – I

Time: 3hours   Max.Marks:75

Note: This question paper contains two parts A and B.
        Part A is compulsory which carries 25 marks. Answer all questions in Part A.
        Part B consists of 5 Units. Answer any one full question from each unit. Each question
        carries 10 marks and may have a, b, c as sub questions.

PART- A   (25 Marks)

1.a)   List the widely used fragmentational constants for calculating physical properties of
       drugs.   [2]
  b)   The dielectric constant for solvent A and solvent B are 23.3 and 76.8
       respectively. A solvent blend is prepared by mixing 80:20 solvent A-solvent B.
       Calculate the dielectric constant of the blend.   [3]
  c)   Write and explain the Gibbs Phase rule   [2]
  d)   Write the limitations of the thermodynamics.   [3]
  e)   Write the relationship between freezing point depression and molal concentration. [2]
  f)   What is the influence of dielectric constants of solvents on inter-ionic attractions? [3]
  g)   Write and explain Sorensen's pH scale.   [2]
  h)   Define the term pH. Calculate the pH value of 5.9×10^{-4} N acid. [3]
  i)   What is buffer capacity? Write one use of it.   [2]
  j)   Calculate amount of sodium chloride required in gram needed to make 50 ml of a 3%
       isotonic drug solution using sodium chloride method. (The E value of the drug is 0.15). [3]

PART-B   (50 Marks)

2.a)   Explain the importance dipole moment in pharmacy by taking two examples.
  b)   Write the applications of Refractive index.   [5+5]

                            OR

3.a)   Explain the factors affecting specific optical rotation in brief.
  b)   What is molar refraction? Explain its use in confirming the chemical structures. [5+5]

4.a)   Define phase. Write examples for coexisting phases.
  b)   Discuss the phase diagram for nicotine water system.   [3+7]

                            OR

5.a)   List three limitations of First law of thermodynamics.
  b)   Derive relationship between free energy and work function.
  c)   Calculate the entropy change for fusion of 2 mole of a solid melting at 295 K. the molar
       heat of fusion is 2.750 MJ/kmol.   [3+3+4]