Ref. No. : Ex//Pharm/T/213//2017(S)

B.Pharm. 2nd Yr 1st Sem. Supple Exam.-2017

Subject:PHARM CHEMISTRY-IV (Physical) Time : 3 Hours Full Marks : 100

Answer any ***five*** questions taking atleast ***one*** from each group.

Group A

Answers to all parts of a question should be at the same place of the answer-script and in the same order as they appear in the question paper.

1. Write in detail on Carnot cycle and its significance. [20

2. (a) The time for water to flow through an Ostwald pipette at 20° C was 297.3 sec. The density of water at 20° C is 0.9982 and the density of a sample of olive oil is 0.910 g / mL. The viscosity of water at 20° C is 1.002 cp and the viscosity of the sample of olive oil is 84.0 cp. How long will it take for the olive oil to flow through the Ostwald pipiette? [5

   (b) Write different laboratory methods of determination of surface tension of liquids. [15

3. (a) Show that for adiabatic expansion of ideal gas PV^{γ} = Constant [5

   (b) Derive expressions for calculating pH of aqueous solutions of salts derived from:

   (i) Weak acid and weak base

   (ii) Strong acid and weak base

   (iii) Strong base and weak acid [15

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Ref. No.:EX/PHARM/ T/ 213/2017(S)

Name of the Examinations: B.PHARMACY 2ND YEAR IST SEM SUPPLEMENTARY EXAM-2017

Subject: PHARMACEUTICAL CHEMISTRY-IV(PHYSICAL) Time: 3 Hours Full Marks: 100

Group-B

Answer at least one question from this group

Q.4.a)Define and explain the following:

i) Gold number ii) Tyndall effect iii) Hardy-Schulze rule iv)Electrophoresis v)Gel types 2x5=10

b) What is catalytic poisoning? Explain the mechanism with illustration 2+4=6

c) Mention the characteristics of biocatalysts. 4

Q.5.a) Explain different types of conductometric titration with graphical representation. 8

b)What is Ostwald dilution law? Deduce degree of dissociation for both strong and weak electrolytes 2+5=7

c) Define asymmetry and electro-phoretic effect 2.5+2.5=5

Q.6.a) What are assumptions of Langmuir adsorption isotherm? Deduce this. What are the limitations of this isotherm? Mention five industrial applications of adsorption. 4+8+3+5=20

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B. PHARMACY 2ND YEAR 1ST SEM SUPPLYMENTARY EXAM - 2017

PHARMACEUTICAL Time : 3 Hours Full Marks : 100

CHEMISTRY - IV (PHYSICAL) Group - C

Answer five questions taking at least one from EACH GROUP

Q.7. Discuss heterogeneous equilibrium using Distribution law and Phase rule. 20

Q.8. Differentiate between order and molecularity of reactions. Derive first order equation. What is the effect of temperature on rate of reaction ? Explain with the help of arrhenius equation. 20

Q.9. Write notes on (Any two) 10 x 2 = 20

i) Distillation phenomenon in non ideal solution

ii) Derive homogeneous equilibrium constants and discuss on effects of temperature concentration and pressure

iii) Discuss on partially miscible solutions with the help of diagrams