Registration no: | | | | | | | | | | |

Total Number of Pages: 2

B.PHARM

15PH301

3rd Semester Regular Examination 2016-17

PHYSICAL PHARMACEUTICS-I

(According to New Syllabus)

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 100

Q.CODE: Y473

Answer Question No.1 & No. 2 which are compulsory and any FOUR from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: **(2 x 10)**

a) The fourth state of matter is known as ----------.

b) Sodium chloride is the example of ---------- crystal form.

c) In phase diagram the triple point maintains----------pressure and ---------- temperature.

d) The propellants used in aerosol are----------.
i) Fluorinated hydrocarbons ii) Carbon monoxide and hydrogen gas iii) Ethylene and alcohol solution. iv) None of the above.

e) Which of the following is a eutectic mixture----------.
i)37% Aspirin and 63% acetaminophen ii)45 % griseofulvin and 55 % succinic acid iii) 63% Aspirin and 37% acetaminophen iv) None of these.

f) Relation between C_P and C_V
i) $C_P > C_V$ ii) $C_P < C_V$ iii) $C_P = C_V$ iv) None of these.

g) The critical temperature of water is ----------.

h) ---------- is the unit of zero order rates constant.

i) ----------is the CST for Phenol-Water system to yield a one phase liquid system.

j) ---------- is used in Lead poising and other poising.

Q2 **Answer the following questions:** **(2 X 10)**

a) Define polymorphisms with suitable examples.

b) Differentiate between crystalline solid and amorphous solid with suitable example

c) Define entropy with equation.

d) What is HLB value? How HLB value related to non-polar group of drug?

e) Write Henderson-Hasselbalch equation and two applications of buffer in pharmacy.

f) What is buffer capacity? Write the equation for buffer capacity.

g) Write shelf life of drug following 1^{st} order reaction.

h) Write Zeta potential and Nernst potential of solutions.

i) What is chelate type complexation? Give examples.

j) Which type of complexation is EDTA? Write Importance of EDTA.

Q3 **Write short notes on any two** **(7.5 X 2)**

a) Glassy state **b)**Eutectic mixture **c)** Aerosol

Q4 **a)** What is Carnot's cycle? How isit operated in heat engine? **(10)**

b) Derive $\eta = 1 - (T_2/T_1)$. Where η=efficiency, T_2=source of heat, T_1 =sink heat. **(5)**

Q5 **a)** What is Raoult's law? How Raoult's related is applicable in lowering of vapour pressure and osmotic pressure? **(10)**

b) How isa solution Ideal or real according to Raoult's law? **(5)**

Q6 **a)** What is isotonic solution? Explain the methods for measurement of tonicity. **(10)**

b) Briefly describe tonicity adjustment for hypotonic solutions. **(5)**

Q7 **a)** What is shelf life of drug? How can it be determined through accelerated stability study? **(10)**

b) Write BET equation with its significance. **(5)**

Q8 **a)** What is CST? How can we represent phenol-water system in bimodal curve? **(10)**

b) Write short notes on HLB scale. **(5)**

Q9 **a)** Define phase, component and degree of freedom. Derive **F=C – P+2.** **(10)**

b) Classify differ types of complexes. **(5)**