PAPER ID-311459

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Subject Code: BP403T

Roll No: | | | | | | | | | | | | | |

BPHARM
(SEM IV) THEORY EXAMINATION 2025-26
PHYSICAL PHARMACEUTICS II – THEORY

TIME: 3 HRS **M.MARKS: 75**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 10 x 2 = 20

a.	What is an ideal solubility parameter? Write its importance in pharmacy.
b.	Define Solvation, Desolvation, and Association with one simple example each.
c.	What is critical solution temperature (CST)? Write its types.
d.	What is a eutectic mixture? Give two examples used in pharmacy.
e.	Define Sorensen's pH scale and write its formula.
f.	What is Critical Micellar Concentration (CMC)? Mention two factors that affect CMC
g.	Define Detergency. How is it different from simple cleaning?
h.	Define Nernst potentialand Zetapotential.
i.	What are chelating agents? Give two uses in pharmacy.
j.	Define viscosity and mention one factor affecting the viscosity of liquid.

SECTION B

2. Attempt any *two* parts of the following: 2 x 10 = 20

a.	Explain solubility of liquids in liquids. Describe types of liquid–liquid solubility, factors affecting solubility, the role of CST, and simple pharmaceutical examples.
b.	Derive Raoult's Law for ideal solutions. Explain positive and negative deviations from Raoult's Law using easy examples and neat diagrams.
c.	Explain different methods used to measure surface tension and interfacial tension..

SECTION C

3. Attempt any *five* parts of the following: 7 x 5 = 35

a.	Define tonicity. Write the difference between isosmotic and isotonic. Explain simple methods used to adjust tonicity,
b.	Explain the classification of complexes, their properties, and important pharmaceutical applications with examples.
c.	Classify surface-active agents (surfactants). Explain the HLB system and its importance in emulsification and solubilization.
d.	Describe buffer action in simple words. Write the Henderson–Hasselbalch equation and explain how buffers are used in biological and pharmaceutical systems.
e.	Write the differences between crystalline solids and amorphous solids based on structure, melting point, solubility, and stability. Give suitable examples.
f.	Explain Nernst Distribution Law. Write its applications and limitations in pharmacy in simple language.
g.	What is protein binding? Explain types of protein–drug binding, factors affecting it, and why it is important in pharmacokinetics.