Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Sessional I (Odd) Semester Examination September 2025

Roll no.....

Name of the Course: B.Pharm
Semester: 3rd
Name of the Paper: Physical Pharmaceutics-I
Paper Code: BP-302T
Time: 1.5 hour **Maximum Marks: 30**

Note:
(i) This question paper contains three sections
(ii) All the sections are compulsory

Section-A

MULTIPLE CHOICE QUESTION **10 X 1 = 10 MARKS**

S.N	CONTENTS	CO's
1.	Raoult's law is applicable to: a) Real solutions b) Non-ideal solutions c) Ideal solutions d) Supersaturated solutions	CO-1
2.	The distribution law was given by: a) Arrhenius b) Nernst c) Raoult d) Henderson	
3.	The mechanism of solute–solvent interaction in solubility is primarily due to: a) Osmosis b) Diffusion and molecular interactions c) Evaporation d) Capillary action	
4.	Which of the following best explains why gases are more soluble in cold water than hot water? a) Henry's law constant decreases with temperature b) Gas molecules move faster at low temperatures c) Heat breaks hydrogen bonds between gas and water d) Cooling increases gas pressure	
5.	Critical solution temperature is defined as: a) The temperature at which a solute completely dissolves in solvent b) The lowest temperature at which two partially miscible liquids are completely miscible c) The boiling point of binary solution d) The freezing point of solution	
6.	The temperature at which a solid changes directly into vapor without passing through the liquid state is called: a) Melting point b) Sublimation point c) Critical temperature	CO-2

Sessional I (Odd) Semester Examination September 2025

	d) Eutectic temperature	
7.	A eutectic mixture is characterized by: a) Having a melting point higher than its components b) Having a melting point lower than its components c) No fixed melting point d) Forming azeotropes	
8.	A drug exists in crystalline and amorphous forms. Which statement is correct? a) Crystalline form is more soluble b) Amorphous form is more soluble c) Both have same solubility d) Solubility depends only on pH	
9.	An inhaler delivers drug using an aerosol system. The function of the propellant is to: a) Increase drug solubility b) Provide pressure to expel drug as fine mist c) Prevent sublimation d) Increase viscosity	
10.	Relative humidity is defined as: a) Ratio of actual vapor pressure to saturated vapor pressure × 100 b) Mass of water vapor per unit volume of air c) Vapor pressure of liquid at critical point d) Amount of water dissolved in liquid	

Section B

Short questions: Attempt any two. **2x5 = 10 marks**

SN	QUESTIONS	CO's
1.	Describe solvation and association in drug solubility	CO 1
2.	Distinguish between real solutions showing positive and negative deviations from Raoult's law.	CO 1
3.	Apply the concept of relative humidity in the storage of hygroscopic drugs..	CO2

Section C

Long questions: Attempt any one **1x10 = 20 marks**

SN	QUESTIONS	CO's
1	Explain ideal solubility parameters and their application in predicting drug solubility	CO1
2	Describe triple point of a substance with phase diagram illustrations.	CO2