


Name:			
Enrolment No:			
<b>UPES</b> <b>End Semester Examination, December 2024</b>			
<b>Course: Physical Pharmaceutics I</b> <b>Program: B. Pharmacy</b> <b>Course Code: BP302T</b>		<b>Semester : III</b> <b>Duration : 03 Hours</b> <b>Max. Marks: 75</b>	
<b>Instructions: Read all the questions carefully. Follow the instructions mentioned against each section.</b>			
<b>SECTION A</b> <b>(20Qx1M=20 Marks)</b>			
S. No.		Marks	COs
Q 1	Define saturated solution.	1	CO1
Q 2	The temperature at which a mixture of two partially miscible liquids becomes completely miscible at all proportions is known as _____. A. Critical solution temperature      B. Melting point C. Critical miscible temperature      D. Miscibility point	1	CO1
Q 3	If the solvent-solute interactions are much stronger than the solute-solute interactions, the solution will likely _____. A. form precipitate      B. be unsaturated C. be highly soluble      D. be insoluble.	1	CO1
Q 4	Increasing temperature always increases the solubility of gas in liquid. A. True      B. False	1	CO1
Q 5	State any one method used to determine pH of solution.	1	CO1
Q 6	Describe the difference between permanent and induced dipole moments.	1	CO2
Q 7	According to Snell's Law, the refractive index is calculated as the ratio of _____. A. Wavelengths in two media      B. Velocities of light in two media C. Frequencies of light in two media      D. Angles of incidence and reflection	1	CO2
Q 8	Inhalers are used for delivery of drug to _____. A. Lungs      B. Brain C. Kidney      D. Gastro-intestinal tract	1	CO2
Q 9	Define relative humidity.	1	CO2
Q 10	Optical activity is a property exhibited only by chiral molecules. A. True      B. False	1	CO2
Q 11	_____ method uses the force required to detach a ring from a liquid surface to measure surface tension. A. Drop Weight Method      B. Capillary Rise Method C. Drop Volume Method      D. DuNouy Ring Method	1	CO3
Q 12	Chemisorption involves low heat of absorption. A. True      B. False	1	CO3
Q 13	Surface tension is _____.	1	CO3

	A. inversely proportional to the number of drops in drop count method B. inversely proportional to density of liquid C. inversely proportional to surface free energy D. directly proportional to circumference of liquid drop		
<b>Q 14</b>	According to Freundlich isotherm, the mass of gas adsorbed per unit weight of adsorbent is directly proportional to pressure of gas. A. True B. False	<b>1</b>	<b>CO3</b>
<b>Q 15</b>	The formation of micelles is primarily dependent on which factor. A. Temperature B. Critical Micelle concentration C. Pressure D. pH	<b>1</b>	<b>CO3</b>
<b>Q 16</b>	Complexation always decreases the solubility of a drug. A. True B. False	<b>1</b>	<b>CO4</b>
<b>Q 17</b>	Define co-ordinate bond with example.	<b>1</b>	<b>CO4</b>
<b>Q 18</b>	Select the type of complex that does not involve any type of bond or transfer of electrons. A. Coordination complex B. Clathrate complex C. Organometallic complex D. Chelate complex	<b>1</b>	<b>CO4</b>
<b>Q 19</b>	The Henderson-Hasselbalch equation is used to calculate the. A. pH of buffer solution B. isotonicity of solution C. osmolarity of solution D. vapor pressure of solution	<b>1</b>	<b>CO5</b>
<b>Q 20</b>	The RBCs shrink in hypertonic solutions. A. True B. False	<b>1</b>	<b>CO5</b>
<b>SECTION B (20 Marks)</b> <b>(2Qx10M=20 Marks)</b> <b>Attempt 2 Question out of 3</b>			
<b>Q 1</b>	Summarize the inclusion type of complexes.	<b>10</b>	<b>CO4</b>
<b>Q 2</b>	a. Write a short note on optical rotation. b. Explain the working and construction of polarimeter with schematic diagram.	<b>5+5</b>	<b>CO2</b>
<b>Q 3</b>	a. Discuss the hydrophilic lipophilic balance (HLB) value. b. Enlist the applications of surface-active agents in pharmacy.	<b>5+5</b>	<b>CO3</b>
<b>SECTION-C (35 Marks)</b> <b>(7Qx5M=35 Marks)</b> <b>Attempt 7 Question out of 9</b>			
<b>Q 1</b>	Enlist and explain the use of buffered isotonic solutions in production of dosage forms.	<b>5</b>	<b>CO5</b>
<b>Q 2</b>	Justify the statement. "Carbon dioxide molecule does not have net dipole moment."	<b>5</b>	<b>CO2</b>
<b>Q 3</b>	Describe different types of solvents used in the pharmaceutical industry.	<b>5</b>	<b>CO1</b>
<b>Q 4</b>	Classify and explain in brief the types of adsorptions.	<b>5</b>	<b>CO3</b>
<b>Q 5</b>	Interpret the effect of various factors that influences solubility of gases in liquids.	<b>5</b>	<b>CO1</b>
<b>Q 6</b>	Explain inorganic and chelate type of complexes.	<b>5</b>	<b>CO4</b>
<b>Q 7</b>	Illustrate the mechanism of buffering action provided by acidic buffers.	<b>5</b>	<b>CO5</b>
<b>Q 8</b>	Write a short note on the binding of drug to plasma proteins.	<b>5</b>	<b>CO4</b>
<b>Q 9</b>	Differentiate and discuss the liquid crystals.	<b>5</b>	<b>CO2</b>