Total No. of Questions: 3 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Pharmacy
End Sem Examination Dec-2023
PY3CO10 Physical Pharmaceutics -I

Programme: B. Pharm. Branch/Specialisation: Pharmacy

Duration: 3 Hrs. **Maximum Marks: 75**

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1
- i. Among amorphous and crystalline form of drug which is more soluble in water and why? **2**
- ii. Draw a phase diagram of one component system. **2**
- iii. Define the following: **2**
  (a) Refractive index
  (b) Optical rotation
- iv. What are liquid crystals? **2**
- v. Define Contact angle and give its relation to wetting. **2**
- vi. Name any two methods to measure surface tension. **2**
- vii. Give any four suitable applications of complexation in pharmacy. **2**
- viii. Why human serum albumin is considered as important protein for binding of drugs? **2**
- ix. Give examples of various buffers used in pharmaceutical purposes. **2**
- x. State true or false with justification… **2**
  (a) Any strong acid can form a buffer with a weak base.
  (b) Hypertonic solutions can never be administered by IV route.

Q.2 Attempt any two:
- i. What is meant by ideal solution of a liquid in liquid? With the help of Raoult's law explain deviation in it. **10**
- ii. What is meant by relative humidity? Explain its method of determination. Add a note on importance of relative humidity in pharmacy. **10**
- iii. (a) Explain the mechanisms of solute solvent interactions **5**

(b) What is polymorphism? Enlist different forms of polymorphism. Add a note of pseudopolymorphs. **5**

Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A
- i. Discuss various methods to determine surface and interfacial tension. **5**
- ii. What are amphiphiles? Give their applications in Pharmacy. **5**
- iii. Write a note on HLB scale. **5**

Section - B
- iv. What do you mean by inclusion complexes? Add a note on Cyclodextrin complexation. **5**
- v. Compare and contrast between inorganic complexes and chelates. **5**
- vi. Describe factors affecting complexation and protein binding. **5**

Section - C
- vii. What are different biological buffering systems? Explain anyone. **5**
- viii. Write a note on pH indicators. **5**
- ix. What are different methods of adjusting tonicity of preparation? Explain anyone. **5**

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Marking Scheme
Physical Pharmaceutics-I (T) PY3CO10

Q.1	i)	Suitable ……. crystalline form	2 Marks	2
	ii)	Correct …….. system	2 Marks	2
	iii)	Correct definition	(1 Mark*2)	2
	iv)	General definition of liquid crystals	2 Marks	2
	v)	Correct definition with suitable description	(1 Mark*2)	2
	vi)	Any two methods to measure surface tension	(1 mark*2)	2
	vii)	Four suitable …… in pharmacy	(0.5 Marks*4)	2
	viii)	Human serum ……. binding of drugs	(As per explanation)	2
	ix)	Enlistment of various buffers min.	(0.5 Mark*4)	2
	x)	• Answer : False	1 Marks	2
		• Justification	1 Marks	
		• Answer : False	1 Marks	
		• Justification :	1 Marks	

Q.2		Attempt any two:		
	i.	• Explanation ……. in liquid	4 Marks	10
		• Raoult's law and its deviation in detail	6 Marks	
	ii.	• Explanation about term relative humidity	2 Marks	10
		• method of determination (any.3)	5 Marks	
		• importance of relative humidity any 3	(1 Mark*3)	
	iii.	• Suitable ……..interections	(1 Mark*5)	5
		• Definition of polymorphism	1 Marks	5
		• Enlistment of different forms of polymorphism	2 Marks	
		• Short description of pseudopolymorphs	2 Marks	

Q.3 Attempt any seven: Two questions from each section is compulsory.

Section - A

	i.	• Enlistment of various methods	2 Marks	5
		• Suitable description about various methods	3 Marks	
	ii.	• Discription about amphiphiles	2 Marks	5
		• their applications in Pharmacy	3 Marks	
	iii.	Definition of HLB scale	2 Marks	5
		General in details about HLB scale	3 Marks	

Section – B

	iv.	• General ……. complexes	2 Marks	5
		• note on Cyclodextrin complexation	3 Marks	
	v.	• Suitable Comparison ……	5 Marks	5
	vi.	• Main 3 factors with suitable description	5 Marks	5

Section - C

	vii.	• Enlistment …….systems :	2 Marks	5
		• Suitable explanation about any one :	3 Marks	
	viii.	• Enlistment of …… description	5 Marks	5
	ix.	• Enlistment of …….tonicity of preparation	2 Marks	5
		• Explanition about any one	3 Marks	

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