BP 403 T

Roll No. of candidate		1	m,			

Bina Chowdhury Central Library Girijananda Chowdhury University Hatkhowapara, Azara, Ghy-17

2023

B.Pharm. 4th Semester End-Term Examination

PHYSICAL PHARMACEUTICS - II

Full Marks - 75	

Time - Three hours

		The figures in the margin indic	ate full	marks for the questions.				
1.	Choos	se the correct answer from the fo	llowing	$(20 \times 1 = 20)$				
	(i)			colloidal chemistry for the purpose				
		(a) Stabilization	(b)	Purification				
		(c) Identification	(d)	Synthesis				
	(ii)	Which method is commonly us	ed for d	estruction of colloid?				
		(a) Addition of electrolytes	(b)	Condensation				
		(c) Dialysis	(d)	Filtration by animal membrane				
(iii) The term used to determine the protecting power of a lyophilic coll								
		(a) Oxidation number	(b)	Coagulation value				
		(c) Gold number	(d)	Critical micelle concentration				
	(iv)	3.0	wder, th	ne Carr's compressibility index should				
		(a) Less than 10	(b)	11-15				
		(c) 16-20	(d)	26-31				
	(v)	True density of a sample of powder can be determined by which of the following method?						
		(a) Helium displacement me	ethod					
		(b) Angle of repose						
		(c) Air permeability method						
		(d) Conductivity method						

(vi)	The ratio of stress to strain is called								
	(a)	Poisson ratio	(b)	Youngs modulus					
	(c)	Shear Strain	(d)	Elastic modulus					
(vii)	Struto:	actured vehicle is included	le is included in the formulation of a suspension in order						
	(a)	Decrease interfacial tensi							
	(b)	Reduce the size by chemic	ins						
	(c)	(c) Prevent cake formation							
	(d)	(d) Prevent sedimentation of particles							
(viii)		he density of the disperse lium, then the Creaming is	is more than that of the dispersion						
	(a)	(a) At the centre of the emulsion							
	(b) In both the direction								
	(c) In downward direction								
	(d)	(d) In upward direction							
(ix)	Wh	ich of the following ingredi	ents im	aproves the flow property of granules?					
	(a)	Surfactant	(b)	Glidant					
	(c)	Emollient	(d)	Lubricant					
(x)	Liq	uid who shows increased vi	scosity	on applying stress is					
	(a)	Dilatant	(b)	Pseudo plastic					
	(c)	Plastic	(d)	Thixotropic					
(xi)		Which of the following equipment is used for determining the particle size distribution of pharmaceutical powders?							
	(a)	Andreason pipette	(b)	Shear box					
	(c)	Ostward viscometer	(d)	Pycnometer					
(xii)	Which the following equation is used for predicting the shelf life of a drug product?								
	(a) Noyes-Whitney equation								
	(b) Henderson-hasselbalch equation								
	(c)	(c) Michaelis-Menten equation							
	(d) Arrhenius equation								
(xiii)	Void volume of powder can be defined as:								
	(a) True volume-bulk volume								
	(b)	Bulk volume-True volum	e						
	(c) Bulk volume-Tapped volume								
	(4)	True volume-Tanned volu	ıme						

	(xiv)	Permanent deformation of particles observed in which of the following condition?							
		cond							
		(a)	After reaching yield value	(b)	Before the yield value				
orary ersity		(c)	During rearrangement	(d)	Elastic limit				
Bina Chowdhury Central Library Girijananda Chowdhury University Hatkhowapara, Azara, Ghy-17	(xv)	The system which undergoes gel-to-sot transformation is known as:							
uy Centro owdhury a, Azara,		(a)	Newtonian	(b)	Elastic				
Bina Chowdhur irijananda Cho Hatkhowapara		(c)	Shear thinning	(d)	Shear thickening				
na Ch janan atkho	(xvi)	Which of the following instrument is used for determination of viscosity of							
B 5 I		non	- Newtonian flow?						
		(a)	Ostwald viscometer	(b)	Falling sphere viscometer				
		(c)	MacMichael viscometer	(d)	Du Nouy tensiometer				
	(xvii)	Which one of the following is the instability marker of an emulsion?							
		(a)	Creaming	(b)	Flocculation				
		(c)	Phase inversion	(d)	All of the above				
	(xviii)) Bin	ngham bodies show which typ	oe of fl	low?				
		(a)	Newtonian flow	(b)	Plastic flow				
		(c)	Pseudoplastic flow	(d)	Dilatant				
	(xix) Thixotropy phenomenon can be applied to system.								
		(a)	Shear thinning system	(b)	Shear thickening system				
		(c)	Both of above	(d)	None of above				
	(xx)	Movement of charged particles through a liquid under the influence of an							
		ap	plied potential difference is l	known	as:				
		(a)	Zeta potential	(b)	Steaming potential				
		(c)	Electro-osmosis	(d)	Electrophoresis				

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[Turn over

2. Answer the following questions: (Any seven)

 $(7 \times 5 = 35)$

- (a) Describe the various methods for preparation of colloids.
- (b) What do you mean by thixotropy? Describe the role of thixotropy in formulation.
- (c) Describe the principle and working of Ostwald viscometer with a labelled diagram.
- (d) What is controlled flocculation? Discuss the various means by which controlled flocculation of a suspension can be achieved.
- (e) Describe the signs of instability in an emulsion and suggest the preventive measures.
- (f) Explain the working principle of Coulter-counter method for particle size measurement with the help of a labelled diagram.
- (g) Discuss the different methods for purification of colloids.
- (h) Discuss briefly the different factors affecting rate of chemical reaction in drug stability.
- (i) Define 'order of reaction'? Derive the expression to calculate rate constant, half-life and shelf life for a zero-order reaction.
- 3. Answer the following questions: (Any two)

 $(2 \times 10 = 20)$

- (a) Describe the flow behaviour of Newtonian and Non-Newtonian systems with suitable examples and graphs. (10)
- (b) Discuss different methods for determination of flow properties of powders. How flow properties of powders can be improved? (6 + 4 = 10)
- (c) Write short note on: (Any two)

(5+5=10)

- (i) Acceleration stability testing.
- (ii) Optical properties of colloids
- (iii) DLVO theory.