Name: Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2021

Course: Physical Pharmaceutics II **Semester: IV**
Program: B. Pharm. **Time: 03 hrs.**
Course Code: BP403T **Max. Marks: 75**
Instructions: All the sections are compulsory.

SECTION A

S. No.	CO		Marks
		Answer all the questions.	**20**
1.	**CO1**	In general, the colloids containing inorganic metal particles as dispersed phase are of _____ type of dispersions. A. Lyophilic B. Lyophobic C. Association D. Hydrophilic	**1**
2.	**CO1**	Colloidal particle can pass through semi-permeable membrane. A. True B. False	**1**
3.	**CO1**	Electrophoresis is used to determine _____ properties of dispersion. A. Molecular weight B. Sedimentation C. Light dispersion D. Electrical	**1**
4.	**CO1**	When a beam of light pass through a colloidal solution scattered light cause the solution to appear turbid; this phenomenon is known as _____. A. Tyndall Effect B. Brownian motion C. Dispersion D. Sedimentation	**1**
5.	**CO2**	The flow behavior characterized by a decrease in apparent viscosity with time under constant shear rate or shear stress is called as _____. A. Dilatant flow B. Pseudo-plastic flow C. Thixotropy D. Plastic flow	**1**
6.	**CO2**	The flow behavior of ketchup is an example of _____. A. Dilatant flow B. Pseudo-plastic flow C. Newtonian flow D. Plastic flow	**1**
7.	**CO2**	The minimum force that must be applied to a non-Newtonian system to convert it to a Newtonian system is known as _____. A. Young's Modulus B. Elastic Modulus C. Bulk Modus D. Yield value	**1**
8.	**CO2**	Plastic deformation is irreversible. A. True B. False	**1**
9.	**CO3**	Suspended particles become flocculated in a suspension , because: A. Attractive forces between particles are appreciable B. Particles are packed closely	**1**

		C. Repulsive forces between particles are appreciable D. Vehicles rejects the particles	
10.	**CO3**	The instability characterized by non-uniform distribution of globules in the emulsion is called as _____. A. Phase inversion B. Coalescence C. Creaming D. Breaking	**1**
11.	**CO3**	Minimum value for degree of flocculation is zero. A. True B. False	**1**
12.	**CO3**	According to wedge theory, calcium stearate favors formation of _____ type of emulsion. A. Water-in-oil B. Oil-in-water B. Microemulsions D. Multiple emulsions	**1**
13.	**CO4**	Define aerodynamic diameter.	**1**
14.	**CO4**	Which of the following method is used to determine the true volume of the particles? A. Adsorption method B. Air permeability method C. Gas displacement method D. Sedimentation method	**1**
15.	**CO4**	Which type of excipients are added to granules to enhance flow properties? A. Emulsifier B. Glidants C. Diluents D. Disintegrants	**1**
16.	**CO4**	Andreasen apparatus is used to estimate _____. A. Particle size B. Particle texture C. Particle shape D. Particle volume	**1**
17.	**CO5**	If the rate of chemical reaction is independent of the initial concentration of drug, the order of reaction is_____. A. Zero B. First C. Second D. mixed	**1**
18.	**CO5**	Which of the following is the unit of reaction rate constant in first order reaction. A. mg/s B. mg/s^2 C. $mg/ml^{-1}.s$ D. min^{-1}	**1**
19.	**CO5**	_____is the minimum energy that the molecule should possess so that molecular collisions results in the formation product. A. Gibb's free energy B. Energy of activation C. Free surface energy D. Energy for decomposition	**1**
20.	**CO5**	Which of the following degradation process is accelerated by presence of traces of heavy metals. A. Oxidation B. Hydrolysis C. Decarboxylation D. Isomerization	**1**

SECTION B			
Answer any two questions of the following.			**20**
1.	**CO4**	a) Describe the principle of Coulter counter used for determination of particle size. b) Calculate bulk density, tapped density and Carr's index if bulk and tapped volume of 100 g granules is 90 ml and 85 ml, respectively.	**5+5**
2.	**CO3**	Explain the following theories of emulsion; a) Monomolecular adsorption theory b) Wedge theory	**10**
3.	**CO1**	Describe various methods of preparation of colloidal dispersions.	**10**
SECTION C			
Answer any seven questions of the following.			**35**
1.	**CO5**	How temperature can affect the rate of reaction?	**5**
2.	**CO2**	Describe plastic flow behavior of the materials with an example.	**5**
3.	**CO3**	Enlist salient features of deflocculated suspension.	**5**
4.	**CO5**	Explain zero order kinetics.	**5**
5.	**CO1**	Discuss the pharmaceutical applications of colloidal dispersions.	**5**
6.	**CO4**	Discuss advantages and disadvantages of optical methods of particle size determination.	**5**
7.	**CO5**	What preventive measures can be employed to avoid oxidation of drug in the pharmaceutical dosage form?	**5**
8.	**CO4**	Explain any one method for determination of true density.	**5**
9.	**CO2**	Write a short note on thixotropy.	**5**
		Total	**75**