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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2021

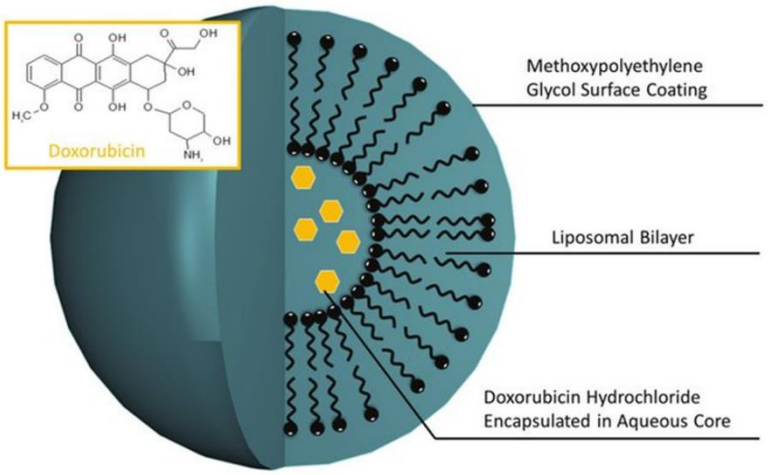
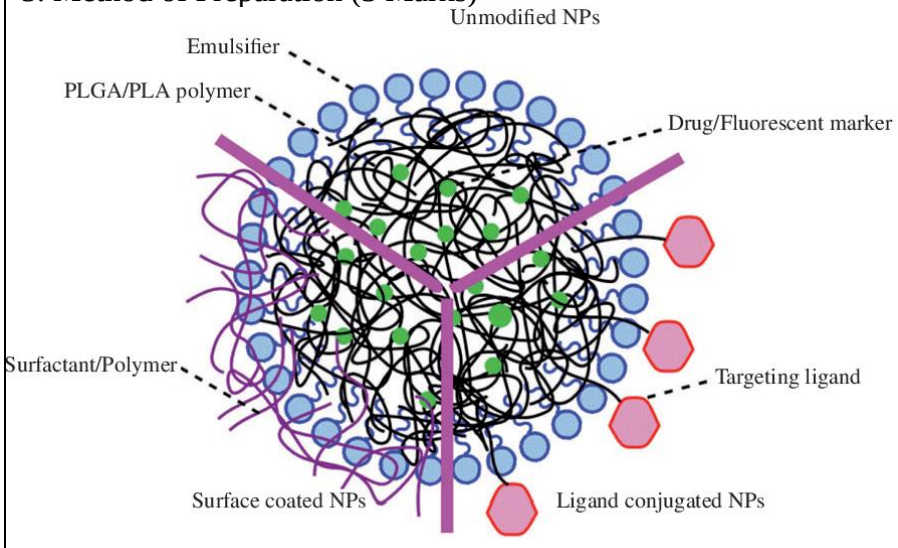
Course: Advanced Drug Delivery System **Semester: III**

Program: MSc(Clinical Research) **Duration: 03 hrs.**

Course Code: HSCR8006P **Max. Marks: 100**

Instructions:

	SECTION A (Type the answers in test box)	**(20Q x1.5M= 30 Marks)**	**CO**
	MCQs or Fill in the blanks	**1.5**	
Q.1	A lipid bilayer structure that encloses an internal aqueous volume. A. Niosome B. Liposome C. Solid lipid nanoparticle D. Nanoparticle		**CO1**
Q.2	A spherical solid lipid particle prepared from physiological lipid, dispersed in water or in aqueous surfactant solution. A. Solid lipid nanoparticle B. Liposome C. Niosome D. Nanoparticle		**CO2**
Q.3	A non-ionic surfactant based multilamellar or unilamellar vesicular structure A. Microspheres B. Liposome C. Niosome D. Nanoparticle		**CO1**
Q.4	Which of the following is a non- erodible insert? A. Ocusert B. Collagen shield C. NODS D. SODI		**CO2**
Q.5	The polymer used in "Lacriset" A. Hydoxy ethyl cellulose B. Hydoxy Methyl cellulose C. Methyl cellulose D. Hydroxy propyl cellulose		**CO1**
Q.6	An advantage of Novel Drug Delivery Systems is A. it causes fluctuation of blood levels B. it cannot be target specific C. it increases toxicity of the drug D. it reduces side effects of the drug		**CO2**
Q.7	Monolithic devices A. Have drugs with large therapeutic indices B. Have rapid drug permeation C. Only hydrophilic polymers are used D.Release is through a polymer membrane		**CO1**
Q.8	Polymer used for colonic systems is A. carboxymethyl cellulose B. cellulose acetate phthalate C. gelatin D. acacia		**CO2**
Q.9	One method to prepare nanoparticles is A. pan coating B. filtration C. solubilisation D. precipitation		**CO1**
Q.10	Microspheres are prepared by coacervation using A. non solvent B. trituration C. pH D. pressure		**CO2**
Q.11	Chitosan is a _____ mucoadhesive polymer A. cationic B. anionic C. synthetic D. non-ionic		**CO1**
Q.12	Sodium taurocholate used as penetration enhancer is A. A Surfactant B. Fatty acid with surfactant property C. Bile salt with surfactant property D. Bile salt but no surfactant property		**CO2**
Q.13	The term magic bullet was given by A.Edward Jenner B.Louis Pasteur C.Paul Enrlich D. Albert Einstein		**CO1**
Q.14	The protein used by immune system to neutralize foreign objects like bacteria and viruses is called A.Antigen B. Antibody C. concanvillin A D. None		**CO2**
Q.15	Use of monoclonal antibodies for drug delivery to tumors is A. active targeting B. passive targeting C. triggered drug targeting D. vector targeting		**CO1**
Q.16	PLGA is approved polymer by A. FDA B.CDSCO C. TGA D. WHO		**CO2**
Q.17	It is the drug release over time irrespective of concentration A.Zero- order B. Second- order C.Third- order D.None of these		**CO1**
Q.18	Which one of the following is not a route of administration? A. Intravenous (IV) B. Oral C. Topical D. Dissolution		**CO2**
Q.19	Following is the example of invasive brain targeting A. Osmogens B. Colloidal carriers C. Amino acid transporters D. Neosomes		**CO1**
Q.20	Which of the following is used as chemical cross-linking agent in preparation of nanoparticles? A.Glutaraldehyde B 2,2, di-methyl propane C. Lactides and glycolides		**CO2**

	D Poly (acryl) starch		
	SECTION B **(Scan and upload)**	**(4Qx5M=20 Marks)**	**CO**
	Short Answer Type Question (5 marks each)		
Q.1	Describe properties of drug candidates for controlled drug delivery system. .		**CO1**
Q.2	Write a short note on pharmacokinetic design for drug delivery system.		**CO2**
Q.3	Comment on mechanisms of drug release in Vaccine Delivery systems?		**CO3**
Q.4	Describe in brief about pulmonary drug delivery system. Give their advantages and disadvantages (2.5M+2.5M)		**CO4**
	SECTION C **(Scan and upload)**	**(2Qx15M=30 Marks)**	**CO**
	Two case studies 15 marks each subsections		
Q.1	Comment on the Liposome system on following points 1. Morphology and structure (5 Marks) 2. Application in Treatment of disease (5 Marks) 3. Pharmacokinetics and Pharmacodynamics of drug after encapsulation (5 Marks) 		CO5
Q.2	Comment on the nanoparticles on following points 1. Morphology and structure (3 Marks) 2. Application in Treatment of diseases (3 Marks) 3. Targeting modalities (3 Marks) 4. Diagnostic modalities (3 Marks) 5. Method of Preparation (3 Marks) 		CO5

	SECTION- D (Scan and upload)	(2Qx10M=20 Marks)	CO
	Long Answer type Question		
Q.1	Write different approaches for designing controlled release formulation. Mention advantages and disadvantages of polymers used in controlled release formulations in detail.(5M+5M)		CO3
Q.2	Describe preparation and characterization of Nanoparticles for drug delivery ? (5M+5M)		CO4