Name: **Enrolment No:**	UPES UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Novel Drug Delivery System **Semester: VII**
Program: B. Pharm **Duration: 03 Hours**
Course Code: BP704T **Max. Marks: 75**
Instructions: No additional material like graph paper, log table, *etc* is allowed for this examination.

SECTION A
(20 Q x 1 M = 20 Marks)

S. No.	Attempt all questions from section A.	Marks	COs
Q 1	The controlled release drug delivery systems is usually follow below kinetics a) First order b) Zero order c) pH dependent d) None of the above	**1**	**CO1**
Q 2	The ratio of median toxic dose and median effective dose is known as a) Therapeutic index b) Insomnia c) Gastric irritation d) Sedation	**1**	**CO1**
Q 3	In _____ method a low molecular weight prepolymer form grows in size as time passes a) Air suspension b) Coacervation phase separation c) Polymerization d) None of the above	**1**	**CO1**
Q 4	Which of the following characteristic is suitable for drug to be administered via transdermal route a) Large drug dose b) Large molecular size c) Drug with narrow therapeutic indices d) Drugs which are metabolized in the skin	**1**	**CO1**
Q 5	What are different gastric pH levels? Mention pH values.	**1**	**CO1**
Q 6	Identify the odd from the following list a) Liposomes b) Monoclonal antibodies c) Reticulo endothelial system d) Microspheres	**1**	**CO1**
Q 7	Define nebulizers.	**1**	**CO1**
Q 8	Higuchi's plot is best explained by: a) Log cumulative percentage of drug released versus square root of time b) Cumulative percentage of drug released versus square root of time c) Log cumulative percentage of drug released versus log time d) Log cumulative percentage of drug remaining to release versus time	**1**	**CO1**

Q 9	Differentiate reservoir and matrix systems.	**1**	**CO1**
Q 10	Following is the example of non-biodegradable hydrophobic polymer a) PVC b) PEG c) Polyvinyl pyrrolidone d) None of the above	**1**	**CO2**
Q 11	Define glass transition temperature.	**1**	**CO2**
Q 12	Material not used for packaging of pharmaceutical aerosol is a) Tin plated steel b) Plastic-coated glass c) Paper board d) None of the above	**1**	**CO2**
Q 13	List out any two disadvantages of niosomes delivery.	**1**	**CO2**
Q 14	Bypass of hepatic portal system, increases the ……. of drugs a) Bioavailability b) pH c) Solubility d) All of the above	**1**	**CO2**
Q 15	Which one is not a chemical permeation enhancer? a) Fatty acids b) Alcohol c) Zein d) Glycol	**1**	**CO3**
Q 16	At physiological pH, mucus network carries: a) Positive charge b) Negative charge c) Both d) No charge	**1**	**CO3**
Q 17	Mention one commercial formulation that uses liposomal technology.	**1**	**CO3**
Q 18	The time taken by dosage form to reach the top of dissolution medium after placing in the medium is termed as a) Floating time b) Buoyancy lag time c) Lead time d) Transit time	**1**	**CO4**
Q 19	Which of the following is not an example of semi-crystalline polymer? a) HDPE b) Nylon c) Polyesters d) LDPE	**1**	**CO4**
Q 20	Write down any two disadvantages of nanoparticles as drug delivery carrier.	**1**	**CO4**
SECTION B (20 Marks) **(2 Q x 10 M = 20 Marks)**			

	Attempt any two questions from section B.	**Marks**	
Q 1	Classify polymers. Write properties and applications of polymers in formulation of controlled release drug delivery systems.	**2 + 8**	**CO2**
Q 2	Write in detail on different approaches of gastro-retentive drug delivery systems mentioning merits and limitations of each approach.	**7 + 3**	**CO3**
Q 3	Compare the process of micro-encapsulation via temperature change and non-solvent addition method with well-labelled phase diagram and suitable examples.	**5 + 5**	**CO4**
SECTION-C (35 Marks) **(7 Q x 5 M = 30 Marks)**			
	Attempt any seven questions from section C.	**Marks**	
Q 1	Discuss the principles of ion exchange approach in designing controlled delivery systems.	**5**	**CO1**
Q 2	Write a note on monoclonal antibodies.	**5**	**CO1**
Q 3	Discuss intrauterine devices and their disadvantages.	**5**	**CO1**
Q 4	Explain the principle of bio-adhesion. Highlight formulation approaches in buccal delivery system.	**5**	**CO2**
Q 5	Explain theories of mucoadhesion.	**5**	**CO2**
Q 6	Enlist excipients used for nasal spray preparation.	**5**	**CO3**
Q 7	Explain intraocular barriers and evaluation parameters of ocuserts.	**5**	**CO3**
Q 8	Define transdermal patch. Write a short note on permeation enhancers with example.	**5**	**CO4**
Q 9	Explain various evaluation parameters for nanoparticles.	**5**	**CO4**