MANIPAL COLLEGE
OF PHARMACEUTICAL SCIENCES
MANIPAL
(A constituent unit of MAHE, Manipal)

REG. NO.....

BPharm Semester VII - End Semester Examination (Makeup Exam)
January 2023

PCE-BP704T: Novel Drug Delivery Systems (Theory)

Date: 25 January 2023 **Duration:** 3h **Max. Marks:** 75

Instructions: Answer ALL questions.

	I Multiple Choice Questions (MCQs) **20 Q × 1 mark = 20 marks**	**Answer**
1	Indicate which one of the following statements is NOT correct A. The most important route of drug administration into the body is through mucosal membranes. B. Mucosal membranes are a stronger barrier to drug uptake than the skin. C. The mucosal membranes of the small intestine are specialized sites for absorption D. There are many mucosal membranes that can be used for drug administration.	
2	Indicate which one of the following statements is NOT correct A. Delayed-release dosage forms can be defined as systems formulated to release the active ingredient a time other than immediately after administration B. Colon-specific dosage forms are developed for the treatment of local and systemic diseases in the colon. C. In the plasma concentration versus time profile of a delayed-release oral dosage form, C_{max} is strongly dependent on the gastric emptying times D. Delayed-release systems can be used to protect the stomach from irritation by the drug.	
3	Indicate which one of the following statements is NOT correct A. If a drug has a short biological half-life, this means that the drug must be administered frequently. B. Drugs that have a long biological half-life (longer than 8 h), usually benefit from formulation as a sustained-release dosage form. C. If the half-life of a drug is short (shorter than 2 h), the dose necessary to be administered in a slow release form may become too large to allow convenient oral administration in a solid dosage form.	
4	Highly soluble drugs need A. Slower release and shorter duration of action B. Fast release and longer duration of action C. Slower release and longer duration of action D. Fast release and shorter duration of action	
5	For a sustained drug delivery system, drug should have A. Low therapeutic dose B. Low therapeutic window C. High therapeutic dose D. Low absorption rate	
6	Chitosan is a Mucoadhesive polymer, and it is a (choose the correct answer) A. Synthetic polymer B. Anionic polymer C. Cationic polymer D. Non-ionic polymer	

173

REG. NO.....

7	Alzet is an implantable DDS, and it works on the principle of A. Hydration activation B. Magnetic activation C. Vapor pressure activation D. Osmotic pressure activation	
8	Microcapsules prepared by simple coacervation-phase using.... A. Non solvent B. Pressure C. pH D. Titration	
9	Spray congealing method of microencapsulation includes A. Globulization B. Agitation C. Powdering D. Compaction	
10	Which one is NOT a flux regulator for osmotic controlled DDS A. Dimethoxy ethylphthalate B. Polyethylene glycols C. Polyhydric alcohol D. Allyl alcohol	
11	The normal rate of mucocilliary clearance in the tracheal region is .....mm/min A. 1 to 5 B. 5 to 10 C. 0 to 15 D. 15 to 20	
12	Drug delivery is administered via the nasal route to an extent of (Select the CORRECT one) A. 8 percent B. 20 percent C. 2 percent D. 15 percent	
13	Which region of the oral mucosa shows highest blood flow? A. Buccal B. Sublingual C. Floor of mouth D. Ventral tongue	
14	Which of the following describes the "Upper Airway"? A. Nasopharyngeal region B. Tracheobronchial region C. Bronchus D. Alveolar region	

REG. NO.....

15	Which of the following describes the "Upper Airway"? A. Nasopharyngeal region B. Tracheobronchial region C. Bronchus D. Alveolar region	
16	Retention of a drug within liposomes is dependent on the A. drug insolubility B. drug non-lipophilicity C. bilayer composition D. incorporation of cholesterol in core of liposomes	
17	Which type of intrauterine device (IUD) is available in the market? A. Copper B. Hormonal C. Titanium D. All of the above	
18	Polymeric micelles as drug-targeting systems A. use highly soluble drug B. use simple polymers C. have hydrophilic coat to promote 'stealth' properties D. have targeting groups non conjugated to their surface	
19	Which of the following evaluation test is essential for floating dosage forms? A. Porosity B. Muco-adhesive strength C. Buoyancy lag time D. Swelling index	
20	What is the maximum particle size preferred for solid particle blend containing drug in dry powder inhalers? A. Less than 0.05 μ B. Less than 0.5 μ C. Less than 5 μ D. Less than 50 μ	

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II Long Answers **2 Q × 10 marks = 20 marks**

1. Discuss on designing controlled release formulation based on Diffusion, Dissolution, and Ion exchange principles? 10 marks
2. Write briefly on microencapsulation preparation by Coacervation phase separation and polymerization techniques. What are the advantages and disadvantages of microencapsulation? 10 marks

III Short Answers **7 Q × 5 marks = 35 marks**

1. With a neat diagram of skin structure, explain how permeation occurs from a transdermal drug delivery system? 5 marks
2. Write briefly on any TWO methods of Gastro retentive drug delivery? 5 marks
3. Write the mechanism of ocular absorption. With a diagram show the fate of drug absorption by ocular route. 5 marks
4. What are the advantages and disadvantages of Liposomes as Targeted drug delivery? 5 marks
5. Write briefly on the role of polymers in controlled Drug delivery. 5 marks
6. Write briefly on IUDs 5 marks
7. What are Osmotically Controlled Drug Delivery System? explain 5 marks

Page No 4