

Duration: 3 Hours

Total marks: 75

- N.B.:**
1. All questions are compulsory
 2. Figures to right indicate full marks.
 3. Draw neat labelled diagrams wherever necessary.

- Q.I Multiple Choice Questions. Write the correct option. (Answer all) 20**
- 1 Which of the following is a system comprising of a rate-controlling polymer matrix throughout which a drug is dissolved or dispersed? **1**
 - a) Reservoir system
 - b) Micro-reservoir system
 - c) Monolithic system
 - d) Sandwich system
 - 2 The dose achieving the steady-state plasma concentration immediately is called as: **1**
 - a) Maintenance dose
 - b) Loading dose
 - c) Retention dose
 - d) Total dose
 - 3 The mechanism by which Polyorthoesters release the drug is **1**
 - a) swelling
 - b) surface erosion
 - c) dissolution
 - d) diffusion
 - 4 A temperature responsive polymer is **1**
 - a) polyethylene glycol
 - b) polyglycolic acid
 - c) acrylic acid
 - d) polyisopropylacrylamide
 - 5 Coacervation Phase Separation can be brought about by **1**
 - a) Temperature change
 - b) Pressure change
 - c) Humidity change
 - d) Adiabatic change
 - 6 Reason for microencapsulation of peppermint oil is **1**
 - a) Sustained release
 - b) Conversion into solid
 - c) Gastric protection
 - d) Dose reduction
 - 7 Drug candidate for buccal mucoadhesive system shall have **1**
 - a) High permeability value
 - b) Low permeability value
 - c) High molecular weight
 - d) Bitter taste
 - 8 Water soluble drug passes across the buccal mucosa through **1**
 - a) transdermal pathway
 - b) intercellular pathway
 - c) intracellular pathway
 - d) precellular pathway

- 9 Osmotic drug delivery systems have a membrane that is **1**
a) soluble at intestinal pH
b) impermeable to GI fluids
c) permeable to water
d) swellable
- 10 Copper ions are released from **1**
a) first generation IUDs
b) second generation IUDs
c) third generation IUDs
d) fourth generation IUDs
- 11 An appendageal route does not include **1**
a) hair follicles
b) sebaceous glands
c) stratum corneum
d) sweat glands
- 12 Which of the following is an advantage of transdermal route? **1**
a) Favours absorption of ionized drug
b) Commonly used to deliver macromolecules like proteins and peptides
c) Suitable for only hydrophilic drugs
d) Bypasses first pass metabolism
- 13 Formulating a gastroretentive system of which of the following drugs will be impractical? **1**
a) Captopril – unstable in the small intestine
b) Ranitidine HCl – absorbed from the stomach
c) Misoprostol – locally acting in stomach
d) Penicillin G – unstable in gastric acid
- 14 Which of the following medium should be preferred to carry out the floating time test? **1**
a) Simulated intestinal fluid
b) 0.1 N HCl
c) Distilled water
d) Phosphate buffer pH 7.4
- 15 Mucociliary clearance is **1**
a) caused by non ciliated cells
b) clearance of mucus and entrapped substances into GIT
c) not affected by disease state
d) a destructive function of the nasal mucosa
- 16 If particles greater the one micron are inhaled **1**
a) deposition occurs in the pulmonary region
b) deposition mechanism is interception
c) deposition occurs in upper bronchio-tracheal region
d) deposition mechanism is diffusion
- 17 Advantages of liposomes include **1**
a) Drug leakage
b) Dose reduction
c) Complicated production method
d) Instability

- 18 In the production of monoclonal antibodies, after antigen injection, _____ of animal is removed. **1**
 a) Spleen
 b) liver
 c) Kidney
 d) pancreas
- 19 An EVA ring impregnated with titanium dioxide is added to the Ocusert. What is its purpose? **1**
 a) It controls the rate of drug release
 b) It helps in prolonged retention
 c) It helps in absorption of lachrymal fluid
 d) Provides better visibility so that there is ease of handling and insertion
- 20 Which of the following is a non-erodible ocular insert? **1**
 a) Contact lens
 b) Lacrisert
 c) Minidisc
 d) Soluble ocular drug insert

QII Answer any Two 20

- 1 Describe in detail controlled release formulations based on diffusion mechanism. **10**
- 2 Classify the microcapsules on the basis of their structures. Explain the concept of core and coat. Describe any one large scale method of their production. **10**
- 3 Enlist the advantages and limitations of ocular inserts. Classify them and explain ANY ONE erodible insert in detail. **10**

QIII Answer any Seven 35

- 1 Differentiate between sustained release and controlled release systems. Enumerate the pros and cons of controlled drug delivery. **5**
- 2 Explain the applications of polymers of natural and semi-synthetic origin in controlling drug release. **5**
- 3 Discuss transmucosal permeability. **5**
- 4 Enlist the evaluation parameters for the evaluation of pulmonary drug delivery systems. Describe the use of the Cascade Impactor. **5**
- 5 Briefly describe the various types of Intrauterine devices. **5**
- 6 Explain any one approach for formulation of a transdermal drug delivery system. **5**
- 7 Discuss effervescent floating drug delivery systems. **5**
- 8 Describe any one method for preparation of Nanoparticles. **5**
- 9 Write a note on Lacrisert. **5**