

B.Pharm. - IVth (CBCS Pattern) Sem-VII  
**BP704T : Novel Drug Delivery System**

P. Pages : 3

Time : Three Hours



**GUG/W/22/14146**

Max. Marks : 75

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- Notes :
1. Diagrams and Chemical equation should be given wherever necessary.
  2. Illustrate your answers wherever necessary with the help of neat sketches.
  3. All questions are compulsory.

**1. Multiple choice questions.**

**20**

- 1) The device containing pilocarpine & alginic acid in a drug reservoir is used for -----  
a) Diabetes Therapy                      b) Dental Therapy  
c) Ocular Therapy                      d) Tuberculosis Therapy
- 2) The pharmaceutical application of polymer ranges from their use as:  
a) Binders  
b) Flow controlling agents  
c) Disintegrant/dissolution agents  
d) All of these
- 3) The step in which formation of weak chemical bonds between entangled polymer chains occurs is  
a) Step I                                      b) Step II  
c) Step III                                    d) None of these
- 4) Detergent removal method is used in the preparation of -----  
a) Liposomes                              b) Nanoparticles  
c) Niosomes                                d) Both a & c
- 5) The purpose of extended release formulation is:  
a) Achieve & maintain therapeutic blood levels of the drug  
b) Immediate release resulting in peaks  
c) To decrease the frequency of dosing  
d) Both a & c
- 6) Wurster apparatus is used in which method of microencapsulation  
a) Co-acervation phase separation  
b) Polymerization  
c) Air suspension  
d) Multi-orifice centrifugal process
- 7) In osmotic pump the release rate is dependent on  
a) Solubility of osmogene  
b) Water permeability of semi permeable membrane  
c) Osmotic gradient  
d) All of these

- 8) Which of the following classes of the drug is not a suitable candidate of Gastroretentive drug delivery system?
  - a) Drugs with good acid solubility
  - b) Drugs with high plasma protein binding
  - c) Drugs with less first pass metabolism
  - d) Drugs which are sensitive to acid
- 9) What is the characteristic of mucoadhesive system?
  - a) Release the drug along the entire length of GIT
  - b) Prolonged the residence time in GIT
  - c) Use of bioadhesive polymer
  - d) Use of high or low density pellet
- 10) ----- is an advanced method of determining size of Nano particles.
  - a) Atomic force microscopy
  - b) Ultrasound scattering
  - c) Compound microscopy
  - d) Molecular microscopy
- 11) Iobitridol used for X-ray imaging encapsulated in Niosomes by film-hydration method using appropriate mixture of
  - a) -alpha tocopheryl polyethylene glycol 1000 succinate
  - b) Sorbitan monostearate,
  - c) Polyethylene glycol 4000 stearate
  - d) All of the above
- 12) combination of ascorbyl palmitate, cholesterol & highly charged lipid diacetyl phosphate lead to formation of vesicles called
  - a) Proniosomes
  - b) Aspasomes
  - c) Nanoparticles
  - d) Liposomes
- 13) Precorneal constraints are
  - a) Solution drainage
  - b) Lacrimation
  - c) Tear dilution
  - d) All of these
- 14) If a drug is targeted to a macromolecule like DNA, protein, then it is called -----
  - a) First order targeting
  - b) Second order targeting
  - c) Third order targeting
  - d) Fourth order targeting
- 15) -----avoids nasal irritation & do not affect drug absorption.
  - a) Surfactants
  - b) Humectants
  - c) Solubilizers
  - d) Antioxidants
- 16) Which of the following technique is used to enhance the permeation of drug through transdermal drug delivery system?
  - a) Iontophoresis
  - b) Sonophoresis
  - c) Magnetophoresis
  - d) All of these
- 17) First IUD device in 1909 was prepared by -----
  - a) Dr. Richard Richter
  - b) Paul Ehrlich
  - c) Davis
  - d) None of these
- 18) The primary barrier to transdermal drug delivery is-
  - a) Dermis
  - b) Stratum corneum
  - c) Epidermis
  - d) Both b & c

- 19) In nasapulmonary drug delivery system the absorption can be enhanced by which of the following approach
- Use of absorption enhancers
  - Increase in residence time
  - Use of physiological modifying agents
  - All of these
- 20) Pregna copper T 380 A (Copper T intrauterine device) is a birth control device can stop pregnancy for period upto -----?
- 6 Years
  - 4 Years
  - 10 Years
  - 3 Years

**2. Solve any two.**

**10x2  
=20**

- Classify and give the applications polymer in pharmaceuticals.
- Describe the Phase separation co-acervation and Spray drying technique of microencapsulation.
- Give the approaches of Gastroretentive DDS & Discuss in detail Gastroretentive floating DDS.

**3. Solve any seven**

**5x7  
=35**

- Write about the Alzet & Duro pumps.
- Describe in detail Inflatable Gastroretentive drug delivery system.
- Explain Air suspension method of microencapsulation
- Describe osmotic implantable pump. (Any two)
- Write about the selection of drug candidate for the development of controlled release drug delivery system.
- Write a short note on contraceptive patches & contraceptive implant.
- Write the theories of mucoadhesion & the steps involved in the mechanism of mucoadhesion.
- What is meant by Transdermal drug delivery system? Describe various basic components of Transdermal drug delivery system.
- Write a note on Novel ocular formulation.

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