Sem-I
Semester
MPH102T
Jan 2024

Time: 3 hours **Marks: 75**

Q. 1 Attempt all multiple-choice questions (MCQ) **20M**

1 Chitosan is a _____ type of polymer
a) Anionic
b) Cationic
c) Non-ionic
d) Zwitterionic

2 In activation modulated drug delivery systems which of the following is activated by Chemical process
a) Magnetically activated DDS
b) Osmotic pressure activated DDS
c) pH activated DDS
d) Hydration activated DDS

3 PLGA is a _____ polymer used in the sustained/ controlled drug delivery systems
a) Natural copolymer
b) Synthetic copolymer
c) Semi-synthetic cross linking polymer
d) Natural polymer

4 Poloxamer is available in various following common grades except the grade _____
a) 88
b) 407
c) 188
d) 20

5 Enzyme activated drug delivery system involves
a) biochemical process
b) physical process
c) biological process
d) mechanical process

6 Alzet is an example of _____ activated drug delivery system
a) vapour pressure
b) magnetic field
c) osmotic pressure
d) electric field

7 Nitro-Dur exhibits _____ type of controlled drug delivery
a) polymer membrane permeation
b) polymer matrix diffusion
c) micro reservoir partition
d) activation modulated

8 Floating time is an evaluation parameter for _____ drug delivery systems
a) Ocular
b) Transdermal
c) Gastro retentive
d) Buccal

9 Which of the following is a prominent disadvantage of Floating Drug Delivery System
a) Gas production
b) Increased dosing frequency
c) Requirement of high level of stomach fluids to float
d) Gastric discomfort

10 Excipient to increase density of Gastro retentive drug delivery system.
a) zinc oxide
b) talc
c) sodium carbonate
d) calcium carbonate

11 Hollow microspheres, a non-effervescent approach for gastro retentive drug delivery system are also known as
a) Floating beads
b) Macrobeads
c) Microballs
d) Microballoons

12 An ocular device containing hydroxy propyl cellulose is
a) Lacrisert
b) SODI
c) Ocusert
d) Minidisc

13 Following is the example of ophthalmic insert undergoing erosion
a) Contact lens
b) Ocustrip
c) Ocufit
d) Lacrisert

14 Dissolution apparatus for in vitro drug release from transdermal patches is

a) USP 5

b) USP 1

c) USP 3

d) USP 7

15 Which type of Transdermal drug delivery system has " burst'' as disadvantage

a) Drug-in-Adhesive matrix

b) Matrix-controlled

c) Membrane controlled

d) Micro-reservoir systems

16 _____ is not applicable for evaluation of Transdermal drug delivery system

a) Thumb stack test

b) Quick stick test

c) Probe tack test

d) Skin peel test

17 For protein and peptide delivery the preferred route of administration is

a) Oral

b) Nasal

c) Parenteral

d) Otic

18 Factors such as heat, pH and organic solvent lead to protein

a) denaturation

b) stability

c) permeability

d) Metabolism

19 All of the following are used in preparation of vaccines except _____

a) fragment of microorganism

b) killed microorganism

c) attenuated microorganism

d) pathogenic microorganism

20 Fabricated arrays that penetrate through stratum corneum to deliver vaccines are called

a) Thermal ablation

b) Microneedles

c) Sonoporation

d) Electroporation

Q 2. Attempt any two question

i. Classify activation modulated drug delivery systems. Discuss any two types in detail 10M

ii. What are Occuserts. Elaborate on the measures to be taken in order to formulate a therapeutically active Occusert. 10M

iii. Explain the criteria for suitable drug in formulation of Gastro retentive Drug Delivery systems. Describe evaluation of Gastro Retentive Drug Delivery Systems. 10M

Q 3. Attempt any seven questions

i. What are Biodegradable polymers. Discuss their various applications in pharmaceutical formulation development. 5M

ii. Write a note on 3D printing of pharmaceuticals 5M

iii. Explain any two types of rate controlled drug delivery systems 5M

iv. Elaborate on the approaches for modulation of gastric retention time 5M

v. What are Buccal drug delivery systems and how are they evaluated 5M

vi. What are Non-erodible occuserts. Give their advantages, disadvantages and their applications. 5M

vii. Enlist the various approaches adopted for the Transdermal drug delivery system. Discuss any one approach in detail 5M

viii. Enlist the barriers for protein delivery and discuss any one formulation strategy for protein delivery systems 5M

ix. What are vaccines and discuss in detail transdermal delivery of vaccines 5M

****