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2021

B.Pharm. 7th Semester Regular Examination

NOVEL DRUG DELIVERY SYSTEM

(NEW REGULATION)

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following questions : (20 × 1 = 20)

- (i) Cellulose is a _____ polymer
(a) Natural (b) Synthetic
(c) Semisynthetic (d) Artificial
- (ii) The drug permeation through mucosa is more through _____ region
(a) Keratinized (b) Non-Keratinized
(c) Both (a) and (b) (d) None
- (iii) More than 95% of drugs are absorbed by this mechanism
(a) Dissolution (b) Diffusion
(c) Passive diffusion (d) Direct diffusion
- (iv) Wurster apparatus is used in _____ method of microencapsulation.
(a) Coacervation phase separation
(b) Air suspension
(c) Multiorifice- centrifugal process
(d) Polymerization
- (v) Microencapsulation by coacervation phase separation process forms
(a) Liquid manufacturing phase (b) Core material phase
(c) Coating material phase (d) All of the above

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- (vi) _____ on buccal buccoadhesive dosage form is responsible for preventing the drug loss.
- (a) Penetration enhancer (b) Mucous membrane
(c) Backing membrane (d) Tissue membrane
- (vii) Diffusion mediated drug release is the feature of _____ implants.
- (a) Passive (b) Active
(c) Electromechanical (d) None of the above
- (viii) The TDDS is developed for the
- (a) Prevention of first pass metabolism
(b) Prevent gastric irritation
(c) Improve Patient Compliance
(d) All of the above
- (ix) Transdermal Permeation mechanisms involves
- (a) Passive diffusion (b) Active diffusion
(c) Both (a) and (b) (d) None of the above
- (x) Important factor considered in calculation of dose in transdermal delivery systems include
- (a) Half life (b) Volume of distribution
(c) Total body clearance (d) All of the above
- (xi) Gastro retentive drug delivery system (GRDDS) is an approach to prolong _____.
- (a) Gastric (b) Intestine
(c) Both (a) and (b) (d) None of the above
- (xii) What is not the approach of GRDDS
- (a) Floating (b) Inflatable System
(c) Drug in Adhesive (d) Swelling System
- (xiii) The copper IUD can cause
- (a) Allergic reaction (b) Infection
(c) Bleeding (d) All of the above

- (xiv) _____ is either chemically or enzymatically metabolized to the active parent compound.
- (a) Active drug (b) Placebo drug
(c) Concentrated drug (d) Prodrug
- (xv) The major limitation of nanoparticles is
- (a) Particle-particle aggregation
(b) Handling of nanoparticles is difficult in solid and dry forms.
(c) Limited drug loading
(d) All of the above
- (xvi) Ideal characteristics of targeted drug delivery system
- (a) Non toxicity and biodegradability
(b) Biocompatibility and physicochemical stability
(c) Predictable and controllable rate of drug release
(d) All of above
- (xvii) The main objective of designing nanoparticles as drug delivery system is
- (a) To control size and surface characteristics of nanoparticles
(b) To achieve site specific action drug delivery
(c) Controlled Drug Delivery
(d) All of the above
- (xviii) Which of the following IUD is available?
- (a) Copper (b) Titanium
(c) Hormonal (d) (a) and (c)
- (xix) Tertiary Level in active targeted Drug Delivery System means
- (a) Targeting the particular Organ
(b) Targeting the particular Cell
(c) Targeting the particular intracellular organelle
(d) None of the above
- (xx) Spatial Control in drug delivery refers to
- (a) Controlling the rate of release
(b) Controlling the site of release
(c) Controlling the mode of delivery
(d) None of the above

2. Answer any seven from the following: (7 × 5 = 35)
- (a) Explain the important factors for consideration while designing a Controlled Drug Delivery system.
 - (b) Classify and explain the different polymers used in formulation of Controlled Drug Delivery Systems.
 - (c) Explain the different theories of mucoadhesion.
 - (d) Define and classify different mucoadhesive formulations.
 - (e) Explain the types, advantages and disadvantages of IDDS.
 - (f) Write in detail about the implantable drug delivery system.
 - (g) Explain what do you mean by Gastro Retentive Drug Delivery System? Explain various approaches of GRDDS.
 - (h) Describe the advantages and disadvantages of Nasal Drug Delivery Systems.
 - (i) Explain Targeted Drug Delivery Systems. Discuss the strategies and components of targeted Drug Delivery systems.

3. Answer any two out of three: (2 × 10 = 20)
- (a) (i) Enumerate the advantages, limitations and applications of Controlled Drug Delivery System. (4)
(ii) Explain the various approaches for Controlled Drug Delivery. (6)
 - (b) (i) Give the advantages, limitations and applications of Transdermal Drug Delivery System. (4)
(ii) Explain in details the formulation and different designs of Transdermal Drug Delivery System. (6)
 - (c) (i) Describe the different methods of preparation of Microcapsules. (5)
(ii) Explain how you will perform the evaluation of microcapsules. (5)