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2021

B.Pharm. 7th Semester (Regular) Examination

NOVEL DRUG DELIVERY SYSTEM THEORY

(New Regulation w.e.f. 2017-18)

Full Marks – 75

Time – Three hours

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

Answer all questions.

1. Multiple choice questions (MCQ) (Answer all questions),. (20 × 1 = 20)
- (i) Immediate release drug delivery system lack this feature
- (a) Dose maintenance (b) Controlled release rate
- (c) Site targeting (d) All of the above
- (ii) The half life of the drug to be considered for controlled release should be
- (a) 3-4 hrs (b) 1-2 hrs
- (c) 6-7 hrs (d) 9-10 hrs
- (iii) Biodegradable polymers break due to cleavage of
- (a) Covalent bonds (b) Polar bonds
- (c) Ionic bonds (d) Metallic bonds
- (iv) Example of natural polymer
- (a) Protiens-collagen (b) Keratin
- (c) Cellulose (d) All of the above
- (v) Bypass of hepatic portal system, increase the _____ of drugs
- (a) Solubility (b) pH
- (c) Bioavailabilty (d) All of the above
- (vi) Following are major components of mucus gel except
- (a) Glycoproteins (b) Lipids
- (c) Water (d) Amino acids

[Turn over

- (vii) Implants are administered in body except
- | | |
|--------------------|-----------------|
| (a) Subcutaneously | (b) Sublingual |
| (c) Intramuscular | (d) Intravenous |
- (viii) It is used to make osmotic pump implant
- | | |
|--------------------|---------------|
| (a) Titanium alloy | (b) Zinc dust |
| (c) Carbon | (d) Magnesium |
- (ix) Skin of a average adult body has surface area
- | | |
|-------------------|-------------------|
| (a) 1m^2 | (b) 2m^2 |
| (c) 3m^2 | (d) 4m^2 |
- (x) Outermost layer of skin is
- | | |
|----------------|-----------------|
| (a) Dermis | (b) Epidermis |
| (c) Hypodermis | (d) Hyperdermis |
- (xi) This is not chemical permeation enhancer
- | | |
|----------------|-------------|
| (a) Fatty acid | (b) Alcohol |
| (c) Zein | (d) Glycol |
- (xii) Materials used for bioadhesion except
- | | |
|----------------|------------------------|
| (a) Chitosan | (b) Sodium bicarbonate |
| (c) Tragacanth | (d) Sodium alginate |
- (xiii) Humectant used in nasal products
- | | |
|---------------|----------------|
| (a) Mannitol | (b) Starch |
| (c) Cellulose | (d) Tragacanth |
- (xiv) The centre of the retina is called
- | | |
|----------------|-----------------------|
| (a) Canula | (b) Macula |
| (c) Eye retina | (d) None of the above |
- (xv) The sclera has large surface area than
- | | |
|------------|----------------------|
| (a) Retina | (b) Ciliary muscle |
| (c) Cornea | (d) All of the above |
- (xvi) Copper containing IUDs causes
- | | |
|--------------------------|----------------------------|
| (a) Fertilization | (b) Lysosomal inactivation |
| (c) Lysosomal activation | (d) None of above |
- (xvii) Disadvantage of TDDS
- | |
|---|
| (a) Cannot be develop for drugs of large molecular size |
| (b) It avoids avoid first pass mechanism |
| (c) It deliver drug in predetermined rate |
| (d) None of the above |

(xviii) Buffer used in nasal spray

- | | |
|----------------------|----------------------|
| (a) Sorbitol | (b) EDTA |
| (c) Sodium phosphate | (d) Sodium bisulfite |

(xix) Pills should have density of _____ g/ml for floating in GRDDS

- | | |
|--------|---------------|
| (a) >1 | (b) <1 |
| (c) <2 | (d) No effect |

(xx) Example of penetration enhancer in TDDS

- | | |
|-----------------------|---------------------|
| (a) Dimethylsulfoxide | (b) Silicon |
| (c) PVC | (d) Polyisobutylene |

2. Long answers (Answer 2 out of 3) (2 × 10 = 20)

- (a) What are IUDs? Give an account of development of IUDs. Discuss about the applications of IUDs.
- (b) Write the mechanism of bioadhesion. Write about the formulation of buccal drug delivery system.
- (c) What do you mean by microencapsulation? Explain the different methods to prepare microspheres.

3. Short answers (Answer 7 out of 9) (7 × 5 = 35)

- (a) What are hydrogels? Write about their advantages and disadvantages.
- (b) What are the ideal characteristics of a polymer? Discuss the applications of polymers.
- (c) Write a note on factors influencing the formulation of controlled drug delivery system.
- (d) Write a note on Universal indicators. Explain the Buffer equation.
- (e) Write down the advantages of TDDS. Explain the components of TDDS.
- (f) Discuss the formulation of inhalers.
- (g) Write a note on nanoparticles.
- (h) What are intraocular barriers? What are the methods to overcome these barriers?
- (i) Write a note on
 - (i) Liposomes
 - (ii) Monoclonal antibodies.