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**MPH 102 T**

Roll No. of candidate | | | | | | | | | | |

**2023**

**M.Pharm. 1st Semester End-Term Examination**

**DRUG DELIVERY SYSTEM**

Full Marks – 75 Time – Three hours

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

1. Answer the following : (15 × 1 = 15)

(i) Dosage form which releases drug at a constant rate and provide plasma concentration that remains invariant with time is known as ————————

(a) Controlled release dosage form

(b) Sustained release dosage form

(c) Repeat action dosage form

(d) Mixed action dosage form

(ii) ———————— generally, do not follow zero order kinetic pattern

(a) Controlled release dosage form

(b) Sustained release dosage form

(c) Repeat action dosage form

(d) Mixed action dosage form

(iii) In osmosis, solvent ———————— through the semipermeable membrane

(a) migrates from high concentration to low concentration

(b) migrates from low concentration to high concentration

(c) do not migrate

(d) none

(iv) Weakly basic drugs exist as ———————— form in the stomach

(a) Unionized (b) Ionized

(c) Zwitterionic (d) None of the above

(v) In polymer membrane permeation-controlled drug delivery systems, the release of drug molecules is controlled by

(a) Partition coefficient of the drug molecule

(b) Diffusivity of the drug molecule

(c) Both

(d) None

(vi) In micro-reservoir partition - controlled drug delivery system, the release of drug molecule is controlled by

(a) Partition coefficient (b) Diffusivity of drug

(c) Solubility of drug (d) All the above

(vii) Syncro-Mate-C is an example of

(a) Polymer membrane permeation-controlled drug delivery

(b) Polymer matrix diffusion-controlled drug delivery system

(c) Micro-reservoir partition-controlled drug delivery system

(d) All the above

(viii) In hydrodynamic pressure-activated drug delivery systems, the release of drug molecule is controlled by

(a) Fluid permeability

(b) Effective surface area of the wall with the annular opening

(c) Hydrodynamic pressure gradient

(d) All the above

(ix) Which one of the following is not a drug release mechanism from CRDDS?

(a) Dissolution (b) Diffusion

(c) Corrosion (d) Chemical degradation

(x) Which factor not affects ocular absorption?

(a) GI pH (b) Lacrimal drainage

(c) Dilution of dose (d) Protein in lacrimal fluid

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(xi) Which property is not ideal for ocular DDS?

(a) Sterility (b) Isotonicity

(c) Less drainage tendency (d) Maximum protein binding

(xii) Which of the following factors does not affect diffusion of the drug through stratum corneum?

(a) Drug concentration

(b) Surface tension

(c) Partition coefficient of the drug

(d) Aqueous solubility of the drug

(xiii) From which of the following mechanisms most of the drugs get absorbed via skin

(a) Active transport (b) Passive Transport

(c) Facilitated transport (d) Osmosis

(xiv) Identify the component which is not a part of the Transdermal Patch

(a) Seal Coat (b) Adhesive layer

(c) Backing membrane (d) Polymer matrix

(xv) Unfolding of a protein can be termed as

(a) Renaturation (b) Denaturation

(c) Oxidation (d) Reduction

2. Answer any *eight* questions : $(8 \times 5 = 40)$

(a) Differentiate controlled release formulations from sustained release formulations.

(b) Enlist advantages and disadvantages of controlled release dosage forms.

(c) Write a note on bioelectronic medicine.

(d) Point out the advantages and disadvantages of 3D printing of pharmaceuticals.

(e) Write a concise note on Tele pharmacy.

(f) Write a note on Activation modulated drug delivery systems.

(g) Explain the barriers of ocular drug delivery systems.

(h) Explain the advantages and disadvantages or transdermal DDS.

(i) Classify proteins according to their biological roles.

(j) Outline the stability problems of protein and their causes.

3. Answer any *two* questions : (2 × 10 = 20)

(a) Describe Physicochemical properties of a drug that can influence the development of sustained released formulations.

(b) Write a note on Bioelectronic Medicines.

(c) Explain the approaches for GRDDS.

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