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MPH 201T

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

2020

M.Pharm 2nd Semester End-Term Examination

MOLECULAR PHARMACEUTICS (NANO TECH AND TARGETED DDS)

Full Marks – 75 Time – Three hours

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

Answer question No. 1 and any *four* from the rest.

1. (A) Multiple choice questions. (10 × 1 = 10)

(i) Selective targeting of Kuffer cells can be considered as

(a) First order targeting

(b) Second order targeting

(c) Third order targeting

(d) Ligand mediated targeting

(ii) The attempts to circumvent and avoid uptake of colloidal carriers by RES is

(a) Passive targeting

(b) Active targeting

(c) Inverse targeting

(d) Dual targeting

(iii) Self assembly of phospholipid molecules in an aqueous environment results into

(a) Niosomes

(b) Aquasomes

(c) Phytosomes

(d) Liposomes

(iv) Which one of the following is a supramolecular drug delivery carrier

(a) Polymeric micelles

(b) Nanoparticle

(c) Resealed erythrocytes

(d) Virosomes

(v) Which one of the following principles signifies 'suicide' gene therapy

(a) Modification of the host immune response towards the tumour

(b) Modification of the function of oncogenes

(c) An inactive prodrug is converted into a cytotoxic drug by gene expressed enzymes

(d) Lysis of tumour cells with replication-competent viruses

(vi) Pro-liposomes mainly enhances

(a) Stability

(b) Drug entrapment

(c) Targeting

(d) Bioavailability

(vii) Drug molecules get covalently bonded with phosphatidylcholine in

(a) Dendrimers

(b) Hydrogel

(c) Phytosomes

(d) Aquasomes

(viii) Surfactants incorporation is essential in the formulation of

(a) SLN

(b) Phytosomes

(c) Hydrogel

(d) Niosomes

(ix) Steric stabilized nanoparticles is developed to overcome

(a) Ionization

(b) Opsonization

(c) Aggregation

(d) Degradation

(x) The method of treating genetic diseases by introducing a remedial gene that prevents the expression of a specific defective gene is

(a) Ex vivo gene therapy

(b) In vivo gene therapy

(c) Somatic cell therapy

(d) Antisense therapy

(B) Define the following : $(5 \times 1 = 5)$

(a) Aptamers

(b) Electrosomes

(c) Aquasomes

(d) Dendrimers

(e) Chemomobilization

2. Give the ideal characteristics, advantages and disadvantages of a targeted drug delivery system. What are the objectives and reasons of drug targeting? Discuss the active, passive and ligand mediated strategies of drug targeting. (5 + 5 + 5)

3. What are the basic differences between normal tissue and tumor tissue? Describe the capillary endothelium in the context of extravasation. How particle size plays an important role in extravasation? (5 + 5 + 5)

4. (a) What are the various molecular targets for tumour targeting?

(b) Discuss the strategies for brain targeting.

(c) Discuss the scope of antibodies in delivering therapeutic compounds to specific sites. (5 + 5 + 5)

5. (a) Give any two methods each for preparation and evaluation of microsphere.

(b) Explain the principle of ex-vivo, in-vivo and viral gene therapy.

(c) Discuss the preparation methods of nanoparticles. (5 + 5 + 5)

6. Write detail notes any three of the following : (5 + 5 + 5)

(a) Phytosomes

(b) Liposomes

(c) Blood brain barrier

(d) Antisense drugs

(e) Aerosols.