Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF PHARMACY

B. Pharm. Winter 2022 - 23 Examination

Semester: 7 **Date: 17/10/2022**
Subject Code: BP 704T **Time: 10:00am to 1:00pm**
Subject Name: Novel Drug Delivery System (NDDS) **Total Marks: 75**

Instructions:
1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions (MCQs) (1 Mark Each) **(20)**

1. A positive temperature-sensitive hydrogel has _____ critical solution temperature
   a) Lower b) Upper
   c) Hybrid d) Mixed
2. Which amongst this is a physicochemical factor of the drug that should be considered while formulating a controlled drug delivery system?
   a) Diffusivity b) Half life
   c) Side effects d) Absorption
3. In Pulmonary Drug Delivery, the drug absorption is achieved due to
   a) High lipophilicity and small surface area b) High lipophilicity and large surface area
   c) High hydrophilicity and large surface area d) Low hydrophilicity and Small surface area
4. Which of the following does not constitute an appendageal route?
   a) Sweat glands b) Hair follicle
   c) Sebaceous gland d) Stratum corneum
5. A Polymer used for colonic systems is
   a) Carboxymethyl cellulose b) Cellulose acetate phthalate
   c) Gelatin d) Acacia
6. A Phospholipid based multilamellar or unilamellar vesicular structure is
   a) Microspheres b) Liposome
   c) Niosome d) Nanoparticle
7. Which among the following can be used as a hydrophobic matrix to formulate Sustained drug delivery system?
   a) Hydroxyporpyl methylcellulose b) Hydroxypropyl cellulose
   c) Ethyl cellulose d) Sodium carboxy methyl cellulose
8. Which of the following is a pH-sensitive bioerodible polymer?
   a) HPMC b) Polymethacrylate
   c) Na CMC d) Ethyl cellulose
9. Use of monoclonal antibodies for drug delivery to tumors is
   a) Active targeting b) Passive targeting
   c) Triggered drug targeting d) Vector targeting
10. _____ is an advanced method of determining surface morphology of nano particles
    a) Atomic force microscopy b) Ultrasound scattering
    c) Compound microscopy d) Molecular microscopy
11. Ocusert is an example of
    a) Feedback regulated system b) Activation modulated system
    c) Bio -responsive system d) Membrane permeation system

12. Stealth liposomes
    a) Have short half-life
    b) Are taken up by macrophages
    c) Have very large size
    d) Are sterically stabilized
13. Chitosan is a _____ mucoadhesive polymer
    a) Cationic
    b) Anionic
    c) Synthetic
    d) Non-ionic
14. Which from the following factor does not affect Osmotic systems
    a) Osmotic pressure gradient
    b) Delivery orifice
    c) Membrane - permeability, Surface area, thickness
    d) Change in pH of environment
15. A microcapsule has_____
    a) Drug dispersed in matrix
    b) Dug core surrounded by distinct wall
    c) Drug adsorbed on the surface
    d) Drug distributed in polymeric matrix
16. An advantage of Novel Drug Delivery Systems is
    a) It causes fluctuation of blood levels
    b) It cannot be target specific
    c) It increases toxicity of the drug
    d) It reduces side effects of the drug
17. Niosomes are prepared from which of the following
    a) Phospholipids
    b) Lecithin
    c) Spingolipid
    d) Surfactants
18. An ocular device that has the shape of a flag
    a) Ocusert
    b) Lacrisert
    c) NODS
    d) SODI
19. The time for which the floating dosage form floats on dissolution medium is called,
    a) Mean Residence Time
    b) Buoyancy Time
    c) Floating Lag Time
    d) Transit Time
20. Which of the following is used to produce effervescence in Floating drug delivery systems?
    a) Magnesium Stearate
    b) Sorbitol
    c) Sodium Bicarbonate
    d) Talc

Q.2 Long Answers (any 2 out of 3) (10 Mark Each) **(20)**

1. Describe the factors affecting permeation of drug through barrier of skin. Write a note on transdermal drug delivery system (TDDS).
2. Write a note on dissolution and diffusion controlled drug release systems.
3. Discuss the factors affecting Pulmonary Drug Delivery system. Write a note on Dry Powder Inhaler.

Q.3 Short Answers (any 7 out of 9) (5 Mark Each) **(35)**

1. Differentiate Microsphere and Microcapsule. Explain solvent evaporation method of microsphere formulation.
2. Enlist approaches for gastric retention. Discuss high density and raft forming approaches.
3. Discuss approaches for Targeted Drug Delivery system.
4. Write a note on Liposomes.
5. Write a note on ALZET pump.
6. Explain concept of Bioadhesion/ Muscoadhesion. Explain evaluation of Buccal patch.
7. Give a brief account on biodegradable polymers.
8. Discuss any one innovation in ophthalmic drug delivery system in details.
9. Write a note on Intra Uterine Devices (IUD).