

Final Year B.Pharm.(Sem VIII) 2020-21

BPH_E_811_T–Novel Drug Delivery Systems

Sample questions for practice- Novel Drug Delivery system

SET 1

1. A spherical solid lipid particle prepared from physiological lipid, dispersed in water or in aqueous surfactant solution.

- A. Solid lipid nanoparticle
- B. Liposome
- C. Niosome
- D. Nanoparticle

2. A prominent structure for ocular absorption of drugs

- A. Conjunctiva
- B. Choroid
- C. Sclera
- D. Cornea

3. The polymer used in “Lacrisert”

- A. Hydroxy ethyl cellulose
- B. Hydroxy Methyl cellulose
- C. Methyl cellulose
- D. Hydroxy propyl cellulose

4. An ocular device that has the shape of a flag

- A. Ocusert
- B. Lacrisert
- C. NODS
- D. SODI

5. Which of the following does not constitute an appendageal route?

- A. Sweat glands
- B. Hair follicle
- C. Sebaceous gland
- D. Stratum corneum

6. "Transderm-Scop" is used in the treatment of

- A. Hypertension
- B. Angina
- C. Motion sickness
- D. Antidote for smoking

7. The size of particles in a parenteral suspension should be

- A. 10 to 20 μm
- B. Less than 10 μm
- C. 100 to 200 μm
- D. 50 to 100 μm

8. The anterior part of the nasal cavity opening towards the face.

- A. Nasopharynx
- B. Nasal septum
- C. Nasal vestibule
- D. Nasal turbinate

9. Monolithic devices

- A. have drugs with large therapeutic indices
- B. have rapid drug permeation
- C. only hydrophilic polymers are used
- D. release is through a polymer membrane

10. Drug release from osmotic drug delivery systems depends on

- A. osmotic pressure
- B. ionic strength
- C. osmotic pressure & ionic strength
- D. osmotic pressure & environment in git

11. One method to prepare nanoparticles is

- A. pan coating
- B. filtration
- C. solubilisation
- D. precipitation

12. Excipient to increase density of GRDDS is

- A. zinc oxide
- B. talc
- C. sodium bicarbonate
- D. calcium carbonate

13. _____ is a dispersed matrix system

- A. nanospheres
- B. nanoparticles
- C. nanocapsules
- D. nanopolymers

14. Chitosan is a _____ mucoadhesive polymer

- A. cationic
- B. anionic
- C. synthetic
- D. non-ionic

15. Which of the following is a natural polymer used in nanoparticles.

- A. Polycaprolactone
- B. Polylactic acid
- C. Alginate
- D. Polystyrene

16. A microcapsule has _____

- A. Drug dispersed in matrix
- B. Drug core surrounded by distinct wall
- C. Drug adsorbed on the surface
- D. Drug distributed in polymeric matrix

17. A polymeric implant that is biodegradable

- A. Prepared from silicone
- B. Prepared from Polyurethane
- C. Prepared from Polylactic acid
- D. Prepared from polyacrylate

18. Paracellular route for nasal drug delivery is

- A. Slow and passive lipoidal pathway
- B. Slow and passive aqueous pathway
- C. Fast and active aqueous pathway
- D. Fast and active lipoidal pathway

19. Sodium taurocholate used as penetration enhancer is

- A. A Surfactant
- B. Fatty acid with surfactant property
- C. Bile salt with surfactant property
- D. Bile salt but no surfactant property

20. pH of nasal formulation in the physiological range

- A. Keeps the drug in ionized state
- B. Alters physiological ciliary movements
- C. Increases mucosal irritation
- D. Keeps the drug in unionized state and sustains physiological ciliary movements

21. Mucocilliary clearance is

- A. A barrier to nasal absorption
- B. Not a barrier to nasal absorption
- C. It is protective in function
- D. It is a barrier to nasal absorption but also protective in function

22. Reservoir systems

- A. do not depend on area
- B. have a rate controlling membrane
- C. follow any order of kinetics
- D. are highly porous

23. Factors affecting lymphatic uptake include

- A. larger aqueous phase
- B. greater hydrophilicity of nanoparticles
- C. low concentration of surfactant
- D. longer chain length of lipid

24. Stealth liposomes

- A. have short half-life
- B. are taken up by macrophages
- C. have very large size
- D. are sterically stabilized

25. An example of a polymer incorporated into dendrimers is

- A. propylene glycol
- B. polyethyleneimine
- C. polyurethane
- D. styrene copolymers

26. Modified balance method is used to evaluate

- A. particle size
- B. adhesive strength
- C. drug release
- D. swelling

27. Eudragit L100 is a type of

- A. cellulose polymer
- B. vinyl co-polymer
- C. methacetic acid co-polymer
- D. methacrylic acid co-polymer

28. A Primary Irritation index of <2 for a transdermal patch indicates that patch is

- A. Non-irritant
- B. Slightly irritant
- C. Moderately irritant
- D. Severely irritant

29. Ideal glass transition temperature for a pressure sensitive adhesive used in transdermal system should be

- A. - 20° C to - 40° C
- B. - 2° C to - 4° C
- C. 20° C to 40° C
- D. 2° C to 4° C

30. Ocusert is an example of

- A. Feedback regulated system
- B. Activation modulated system
- C. Bio -responsive system
- D. Membrane permeation system

31. _____ is an advanced method of determining size of nano particles

- A. Atomic force microscopy
- B. Ultrasound scattering
- C. Compound microscopy
- D. Molecular microscopy

32. Chimeric peptides have

- A. chylomicrons
- B. polymeric micelles
- C. peptidomimetic antibodies
- D. polymeric nanoparticles

33. Use of monoclonal antibodies for drug delivery to tumors is

- A. active targeting
- B. passive targeting
- C. triggered drug targeting
- D. vector targeting

34. _____ is an example of a synthetic biodegradable polymer

- A. acrolein
- B. polyethylene glycol
- C. LDPE
- D. polystyrene

35. _____ is an example of a bioerodible polymer

- A. polyorthoesters
- B. polycarbonate
- C. fluorocarbon
- D. polystyrene

36. Which amongst this is a limitation associated with conventional drug delivery systems?

- a. Lower effectiveness
- b. Ease of manufacturing
- c. Decreased side effects
- d. Spatial and temporal control

37. Carbopols are:

- a. Synthetic vinyl polymers with ionizable carbonyl group
- b. Polyoxyethylene ethers with carboxy groups
- c. Mineral waxes with hydrocarbon content ranging from C35 to C55
- d. Polyoxyethylene derivatives of polyoxypropylene

38. Which amongst the following are the smallest liposomes?

- a. Large unilamellar vesicles
- b. Oligolamellar vesicles
- c. Multilamellar vesicles
- d. Multivesicular vesicles

39. Which of the following is used as chemical cross-linking agent in preparation of nanoparticles?

- a. Glutaraldehyde
- b. 2,2, di-methyl propane
- c. Lactides and glycolides
- d. Poly (acryl) starch

40. What type of protein binding characteristics of a drug are desirable to be formulated into an ocular system?

- a. Low
- b. Medium
- c. High
- d. It has no bearing

41. A positive temperature-sensitive hydrogel has ----- critical solution temperature

- a. Upper
- b. Lower
- c. Hybrid
- d. Mixed

42. The stratum corneum consists of -----layers of keratinized cells

- a. 10 to 25
- b. 0 to 10
- c. 25 to 50
- d. Above 50

43. Peel adhesion is tested by measuring the force required to pull a single coated tape, applied to a substrate at a° angle

- e. 180
- f. 360
- g. 45
- h. 90

44. Which of the following is the Noyes – Whitney equation?

- a. $\frac{dC}{dt} = -k(c_r - c)$
- b. $\frac{dC}{dt} = \frac{DAk_{o/w}(c_s - c_b)}{Vh}$
- c. $M_0^{1/3} - M^{1/3} = Kt$
- d. $\frac{M_t}{M_0} = k\sqrt{t}$

45. Which of the following is an effective barrier for drug?
- Tight junctions
 - Pinocytes
 - Glucose transporters
 - Protein carriers
46. To prevent the loss of drug that has migrated into the adhesive layer during storage, this is used
- Release liner
 - Rate controlling membrane
 - Adhesive layer
 - Backing membrane
47. Webels model is used for evaluation of
- Pulmonary Targeting
 - Nasal Targeting
 - Hepatic Targeting
 - Ocular targeting
48. These noninvasive techniques have been used for drug delivery to brain
- Nanogels
 - Bradykinin administration
 - Onmaya reservoir
 - Microgel
49. In Pulmonary Drug Delivery the drug absorption is achieved due to
- High lipophilicity and large surface area
 - Low lipophilicity and small surface area
 - High hydrophilicity and large surface area
 - Low hydrophilicity and Small surface area
50. The dissolution study of colon targeted drugs is carried by
- Bio Dis III apparatus
 - Beaker Method
 - Flow through cell
 - USP Type I AND II Apparatus

51. These are a unique class of synthetic macromolecules having highly branched, three dimensional, nanoscale architecture with very low polydispersity index and high functionality

- a. Dendrimers
- b. Neosomes
- c. Auasomes
- d. Nanoparticles

52. _____ is carrier for Haemoglobin

- a. Neosome
- b. Nanoparticle
- c. Aquasomes
- d. Phytosomes

53. Following is the example of invasive brain targeting

- a. Osmogens
- b. Colloidal carriers
- c. Amino acid transporters
- d. Neosomes

FINAL YEAR NDDS - SET 2

1. What type of process does the liposomes undergoes?

- A) Oxidation
- B) Acetylation
- C) Reduction
- D) Isomerization

2. Find out the odd type of ocular inserts

- A) Lacrisert
- B) Occusert
- C) SODI
- D) Minidisc

3. What is extrusion?

- A) pushing the heated material through an orifice
- B) producing a hole by a punch
- C) making cup shaped parts from the sheet
- D) process of mixing the ingredient

4. 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

5. Which of the following is the example of Physical theory of mucoadhesion

- A) Wetting
- B) Electronic
- C) Adsorption
- D) Adhesion

6. Niosomes are prepared from which of the following

- A) Phospholipids
- B) Lecithin
- C) Spingolipid
- D) Surfactants

7. Select the physical mechanism by which in situ gelling system is formed

- A) Change in pH
- B) Change in glucose level
- C) Change in electric field
- D) Change in ion concentration

8. What are the characteristics of matrix diffusion controlled release system?

- A) Release the drug along the entire length of GIT
- B) Drug disperse in an insoluble matrix of rigid hydrophobic material
- C) Employ waxes to control the rate dissolution
- D) Release only at specific site

9. Which of the following is not the advantage of Transmucosal DDS?

- A) Drugs sensitive to pH change can be administered via this route
- B) Drug having poor bioavailability through oral route can be administered via this route
- C) Various hormone, steroids, enzymes can be administered by this route
- D) Ease of administration

10. Ocular iontophoresis is a process which does not involve

- A) Electrical potential driving charged ions into eyes
- B) Delivers high concentration to specific sight
- C) Good bioavailability
- D) Disadvantage of epithelial on conjunctival edema

11. Which of the following is not a component of dendrimer?

- A) Central core
- B) Stem
- C) Interior dendritic structure
- D) Exterior surface

12. Which of the following is incorrect about Transdermal DDS?

- A) A stable and controlled blood level can be attained
- B) All potent drugs can be administered as TDDS
- C) Drugs with narrow therapeutic window can be administered as TDDS
- D) Self- medication is possible

13. Which of the following is not a disadvantage of conventional dosage form?

- A) Poor patient compliance
- B) Change in concentration may lead to under or over medication
- C) Attainment of steady state condition difficult.
- D) have high cost

14. Which polymers occur naturally?

- A) Starch and Nylon
- B) Starch and Cellulose
- C) Proteins and Nylon
- D) Proteins and PVC

15. Which of the following characteristics is suitable for transdermal drug?

- A) Large drug dose
- B) Large molecular size
- C) Drug with narrow therapeutic indices
- D) Drugs which are metabolized in the skin

16. Which among the following polymers have lowest solubility?

- A) polyethylene
- B) polystyrene
- C) nylon 6
- D) epoxy resin

17. Which of the following is not a component of buccal patch?

- A) Polymer
- B) Active substance
- C) Flavouring agent
- D) Counter irritant

18. Example of hydrophobic polymer used in nanoparticles is

- A) Gelatin
- B) Alginate
- C) Acrylate
- D) Lectin

19. Which of the method is not used for preparation of nanoparticle?

- A) Imersion polymerization
- B) Dispersion polymerization
- C) Interfacial polymerization
- D) Emulsion polymerization

20. What are the characteristics of continuous release systems?

- A) Release the drug along the entire length of GIT
- B) Prolonged their residence in the GIT and release
- C) Release only at a specific drug
- D) Release as soon as comes in contact to the saliva

21. What is the characteristic of dissolution controlled release systems?

- A) Release the drug along the entire length of GIT
- B) Prolonged their residence in the GIT and release
- C) Release only at a specific drug
- D) Very slow dissolution rate

22. The absorption of the ophthalmic drug does not depend on which of the following?

- A) Physicochemical properties of the permeating molecule
- B) Drainage of tears
- C) Output of tears
- D) Size of the eyeball

23. Which of the following is not a property of Bio-adhesive microspheres?

- A) Achieved by making use of adhesive properties of water soluble polymers
- B) Adhesion of drug delivery device to the mucosal membrane such as buccal, ocular, rectal, nasal.
- C) Exhibit a prolonged residence time at the site of application and causes intimate contact with the absorption site and produces better therapeutic action.
- D) They contain radioisotope i.e. either α , β or γ emitters.

24. What are the characteristics of the reservoir or membrane devices?

- A) The drug has a large therapeutic index
- B) Drug permeation rate is high
- C) Control drug release by partitioning the drug from the oil
- D) Administration of emulsions