PHB Education

Government Exam and D. Pharm Exit Exam Preparation

Questions Bank

Subject: Pharmaceutics

Chapter 19 : Novel Drug Delivery System

Section A: Introduction to Novel Drug Delivery System (NDDS) (30 MCQs)

1. NDDS stands for —
   a) New Drug Development System
   b) Novel Drug Delivery System
   c) Non-Drug Delivery System
   d) None of these
   Answer: b
2. The main objective of NDDS is —
   a) To increase drug sales
   b) To improve drug bioavailability and therapeutic efficacy
   c) To reduce manufacturing cost
   d) To increase marketing potential
   Answer: b
3. Novel Drug Delivery System is designed to —
   a) Deliver the drug at controlled rate
   b) Deliver drug at desired site
   c) Minimize side effects
   d) All of these
   Answer: d
4. NDDS mainly aims to overcome —
   a) Conventional drug delivery limitations
   b) Regulatory barriers
   c) Clinical trials
   d) Packaging issues
   Answer: a
5. Conventional dosage forms include —
   a) Tablets and capsules
   b) Transdermal patches
   c) Liposomes
   d) Niosomes
   Answer: a
6. Controlled drug delivery aims at —
   a) Constant plasma concentration

b) Sudden release

c) Burst effect

d) Irregular absorption

Answer: a

7. Sustained release system releases drug —

a) Immediately

b) Gradually over time

c) After lag period only

d) In large burst

Answer: b

8. Targeted drug delivery ensures —

a) Drug reaches specific site

b) Drug release in stomach only

c) Drug metabolized quickly

d) Drug destroyed before absorption

Answer: a

9. NDDS helps in —

a) Reducing dosing frequency

b) Increasing patient compliance

c) Reducing side effects

d) All of these

Answer: d

10. The concept of NDDS became popular during —

a) 1970s

b) 1980s

c) 1990s

d) 2000s

Answer: b

11. Oral controlled release dosage forms are example of —

a) NDDS

b) Conventional system

c) External preparation

d) None

Answer: a

12. Drug targeting can be achieved by —

a) Nanoparticles

b) Liposomes

c) Microspheres

d) All of these

Answer: d

13. NDDS improves therapeutic efficacy by —

a) Altering pharmacokinetic parameters

b) Reducing half-life

c) Increasing metabolism

d) Reducing absorption

Answer: a

14. Controlled release systems maintain drug levels within —

a) Therapeutic window

b) Toxic range

c) Sub-therapeutic range

d) None

Answer: a

15. The success of NDDS depends on —

a) Drug properties

b) Carrier properties

c) Route of administration

d) All of these

Answer: d

16. Biodegradable polymers used in NDDS include —

a) PLA, PLGA

b) PVC, Nylon

c) PEG, PVA

d) Teflon

Answer: a

17. Pharmacokinetics is improved in NDDS due to —

a) Controlled release

b) Targeted delivery

c) Bypassing first-pass metabolism

d) All of these

Answer: d

18. The aim of controlled delivery is —

a) Constant blood level

b) Rapid clearance

c) Poor compliance

d) None

Answer: a

19. NDDS is helpful for drugs with —

a) Short half-life

b) Long half-life

c) Poor solubility

d) All of these

Answer: d

20. The release kinetics of NDDS can follow —

a) Zero order

b) First order

c) Higuchi model

d) All of these

Answer: d

21. NDDS can be developed for —

a) Oral route only

b) Parenteral route

c) Topical route

d) All routes

Answer: d

22. A good NDDS should —

a) Release drug in predictable manner

b) Be biocompatible

c) Be stable during storage

d) All of these

Answer: d

23. The main challenge in NDDS development is —

a) Biocompatibility

b) Cost

c) Regulatory issues

d) All of these

Answer: d

24. Site-specific delivery is especially useful in —

a) Cancer therapy

b) Skin diseases

c) Fever

d) Cold

Answer: a

25. A good carrier system should be —

a) Non-toxic and biodegradable

b) Chemically reactive

c) Expensive

d) Insoluble

Answer: a

26. NDDS can improve —

a) Stability of drug

b) Patient compliance

c) Therapeutic index

d) All of these

Answer: d

27. In NDDS, the release rate depends on —

a) Matrix system

b) Drug solubility

c) Polymer characteristics

d) All of these

Answer: d

28. One of the first NDDS types developed was —

a) Transdermal system

b) Liposome

c) Microparticle

d) Nanoparticle

Answer: a

29. The most preferred route for NDDS is —

a) Oral

b) Parenteral

c) Transdermal

d) Inhalation

Answer: a

30. NDDS can overcome problems of —

a) Poor bioavailability

b) Drug degradation

c) Frequent dosing

d) All of these

Answer: d

Section B: Classification of NDDS with Examples (40 MCQs)

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31. NDDS can be classified based on —

a) Route of administration

b) Release rate

c) Technology used

d) All of these

Answer: d

32. Controlled release system is classified as —

a) Rate-controlled system

b) Activation-controlled system

c) Feedback-regulated system

d) All of these

Answer: d

33. Liposomes are —

a) Vesicular systems

b) Polymeric systems

c) Osmotic systems

d) Transdermal devices

Answer: a

34. Niosomes are —

a) Non-ionic surfactant vesicles

b) Ionic vesicles

c) Polymeric nanoparticles

d) Micelles

Answer: a

35. Polymeric nanoparticles are used for —

a) Targeted delivery

b) Sustained release

c) Gene delivery

d) All of these

Answer: d

36. Microspheres are —

a) Spherical polymeric particles

b) Hollow capsules

c) Lipid vesicles

d) Micelles

Answer: a

37. Osmotic pumps are based on —

a) Osmosis principle

b) Diffusion

c) Pressure release

d) Adsorption

Answer: a

38. Transdermal patches deliver drug via —

a) Skin

b) Oral route

c) Eye

d) Lungs

Answer: a

39. Iontophoresis enhances drug delivery through skin using —

a) Electric current

b) Heat

c) Pressure

d) Light

Answer: a

40. Microneedle patches work by —

a) Creating microchannels in skin

b) Heating the skin

c) Dissolving stratum corneum

d) Pressure application

Answer: a

41. Buccal drug delivery targets —

a) Mucosa of mouth

b) Intestine

c) Stomach

d) Colon

Answer: a

42. Nanoparticles size range is —

a) 1–100 nm

b) 1–100 µm

c) 100–1000 µm

d) 1 cm

Answer: a

43. Liposomes are made of —

a) Phospholipids and cholesterol

b) Polysaccharides

c) Proteins

d) PEG only

Answer: a

44. Niosomes are used as —

a) Targeted carriers

b) Vaccines

c) Transdermal systems

d) All of these

Answer: d

45. Examples of biodegradable polymers used in NDDS —

a) PLA, PLGA, PCL

b) PVC, Nylon

c) Polyurethane

d) Teflon

Answer: a

46. Reservoir system consists of —

a) Core surrounded by membrane

b) Uniform matrix

c) Multiple layers

d) None

Answer: a

47. Matrix system consists of —

a) Drug dispersed in polymer

b) Drug in hollow cavity

c) Coated core

d) Vesicular structure

Answer: a

48. Example of transdermal drug delivery system —

a) Nitroglycerin patch

b) Paracetamol tablet

c) Cough syrup

d) Capsule

Answer: a

49. Gastro-retentive system delivers drug to —

a) Stomach

b) Colon

c) Liver

d) Kidney

Answer: a

50. Floating tablets belong to —

a) Gastro-retentive system

b) Osmotic system

c) Colon-targeted system

d) None

Answer: a

51. Colon-targeted systems are designed for —

a) Local action in colon

b) Systemic action

c) Oral cavity

d) Skin

Answer: a

52. Mucoadhesive systems adhere to —

a) Mucosal surfaces

b) Skin surface

c) Nail

d) Bone

Answer: a

53. Nanosponges are used for —

a) Controlled release

b) Enhanced solubility

c) Site-specific delivery

d) All of these

Answer: d

54. Liposomes were first described by —
    a) Bangham
    b) Higuchi
    c) Langer
    d) Vesely
    Answer: a
55. Targeted drug delivery includes —
    a) Active and Passive targeting
    b) Static targeting
    c) Random targeting
    d) None
    Answer: a
56. Active targeting involves —
    a) Ligand-receptor binding
    b) Diffusion
    c) Osmosis
    d) Adsorption
    Answer: a
57. Magnetic microspheres are targeted by —
    a) External magnetic field
    b) Light
    c) Pressure
    d) Heat
    Answer: a
58. Polymeric micelles are formed by —
    a) Amphiphilic block copolymers
    b) Proteins
    c) Sugars
    d) Lipids
    Answer: a
59. Erythrocyte-based drug delivery uses —
    a) Red blood cells as carriers
    b) Lipid vesicles
    c) Nanotubes
    d) None
    Answer: a

60. Implants are —

a) Long-acting NDDS

b) Short-acting dosage forms

c) Immediate release

d) Aerosols

Answer: a

61. Nanotechnology-based NDDS improves —

a) Drug solubility

b) Targeting

c) Bioavailability

d) All of these

Answer: d

Section C: Advantages and Challenges of NDDS (30 MCQs)

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71. One main advantage of NDDS is —

a) Controlled release

b) Site-specific delivery

c) Reduced toxicity

d) All of these

Answer: d

72. NDDS reduces —

a) Dose frequency

b) Adverse effects

c) Cost of treatment

d) All of these

Answer: d

73. Improved patient compliance is achieved by —

a) NDDS

b) Conventional dosage forms

c) High-dose injections

d) Placebo

Answer: a

74. NDDS helps in —

a) Reducing side effects

b) Reducing dose

c) Increasing efficacy

d) All of these

Answer: d

75. Targeted NDDS is beneficial in —

a) Cancer

b) Diabetes

c) Hypertension

d) All of these

Answer: a

76. One challenge in NDDS is —

a) Complex formulation process

b) High cost

c) Scale-up difficulty

d) All of these

Answer: d

77. Regulatory approval of NDDS is —

a) More stringent

b) Less strict

c) Easy

d) Unnecessary

Answer: a

78. NDDS can enhance bioavailability by —

a) Avoiding first-pass metabolism

b) Rapid excretion

c) Drug degradation

d) None

Answer: a

79. Major limitation of NDDS —

a) Stability problem

b) Manufacturing cost

c) Patient acceptability

d) All of these

Answer: d

80. The biggest challenge in NDDS is —

a) Targeting accuracy

b) Regulatory hurdles

c) Reproducibility

d) All of these

Answer: d

81. NDDS improves therapeutic index by —

a) Decreasing toxicity

b) Increasing efficacy

c) Both a and b

d) None

Answer: c

82. NDDS can improve solubility of —

a) Poorly soluble drugs

b) Water-soluble drugs

c) Stable drugs

d) None

Answer: a

83. Major disadvantage of NDDS —

a) Cost and complexity

b) Simplicity

c) Rapid approval

d) Stability

Answer: a

84. Patient compliance improves because —

a) Fewer doses are needed

b) Drug is tastier

c) Tablets are smaller

d) None

Answer: a

85. NDDS minimizes —

a) Drug fluctuation in plasma

b) Efficacy

c) Safety

d) Potency

Answer: a

86. NDDS can bypass —

a) First-pass metabolism

b) Kidney excretion

c) Liver function

d) None

Answer: a

87. The high development cost of NDDS is due to —

a) Research and technology

b) Packaging

c) Distribution

d) None

Answer: a

88. Drug loading and release are major issues in —

a) Nano-carriers

b) Tablets

c) Syrups

d) Capsules

Answer: a

89. NDDS helps to maintain —

a) Steady plasma concentration

b) High peak concentration

c) Rapid elimination

d) None

Answer: a

90. NDDS provides —

a) Better targeting and efficacy

b) Random absorption

c) Poor bioavailability

d) None

Answer: a

91. Stability of NDDS depends on —

a) Polymer type and storage condition

b) Taste

c) Packaging color

d) pH only

Answer: a

92. Patient acceptability is high in NDDS due to —

a) Painless administration (e.g. patches)

b) Frequent dosing

c) Taste

d) Color

Answer: a

93. NDDS can be designed for —

a) Local or systemic action

b) Diagnostic purpose

c) Both a and b

d) None

Answer: c

94. One limitation of liposomes is —

a) Leakage of drug

b) High cost

c) Short shelf life

d) All of these

Answer: d

95. Controlled release systems reduce —

a) Dose dumping

b) Plasma level fluctuation

c) Toxicity

d) All of these

Answer: d

96. Scale-up of NDDS is difficult because of —

a) Complex equipment

b) Stability problems

c) Process reproducibility

d) All of these

Answer: d

97. Biocompatibility testing is essential for —

a) NDDS carriers

b) Conventional tablets

c) Placebos

d) None

Answer: a

98. Pharmacokinetic optimization is an advantage of —

a) NDDS

b) Conventional delivery

c) Topical creams only

d) None

Answer: a

99. NDDS contributes to —

a) Personalized medicine

b) Traditional therapy

c) Manual dosing

d) Random treatment

Answer: a

100. The future of NDDS involves —

a) Smart drug delivery systems

b) Controlled nanoparticles

c) Targeted gene therapy

d) All of these

Answer: d

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