QUESTION FOR THE EXAM FROM PHARMACEUTICAL TECHNOLOGY (2)

General

1. Pharmaceutical technology. Galenics. Systematic classification of pharmaceutical preparations and their dosage forms. Latin nomenclature of dosage forms.
2. Drug as a dispersion system, application pathways of drugs.
3. Particle size and polymorphism of solid substances, relationship with bioavailability.
4. Solubilization and solubilizers.
5. Formulation and production of pharmaceutical preparations containing low-soluble drugs. Solid solutions.
6. Dissolution rate of solid substances, relationship with bioavailability.
7. Surface and interface phenomena in liquid systems.
8. Colloidal systems. Phase, molecular, and association colloids.
9. Solutions. Solubility.
10. Dispersion systems of a solid substance in a liquid. Meaning of wetting of solids. Sedimentation.
11. Comminution and sorting of solid substances.
12. Separation of liquid heterogeneous dispersions. Filtration.
13. Methods for preparing extracts.
14. Properties of parenteral drugs: transparency, pH, osmotic and oncotic pressure, sterility, pyrogenicity.
15. Quality control of parenteral drugs.
16. Injection production cycle, injection quality control.
17. Bio-clean premises. Aseptic preparation of medicines.
18. Sterile. Sterilized. Sterilization, aseptic procedure, disinfection.
19. Sterilization methods.
20. Production of semi-solid preparations for cutaneous application (solution, emulsion, suspension systems).
21. Formulation of suppositories and pessaries.
22. Stability and stabilization of medicines. Incompatibility.
23. Microbiological stability of medicines. Categories of drugs according to microbiological quality.
24. Pharmaceutical packaging, functions of pharmaceutical packaging: protective, economic, communication.
25. Packaging materials.
26. Viscosity. Structural viscosity. Rheology of drugs.
27. Pharmaceutical quality, principles of good manufacturing practice.
28. Validation as part of good manufacturing practice.

Excipients

29. Constitutive excipients (vehicles, bases).
30. Pharmaceutical solvents.
31. Water as a pharmaceutical solvent. Waters in European Pharmacopeia. Preparation of waters with high purity.

32. Bases of semi-solid preparations for cutaneous application.
33. Excipients in tablets and granules, functional classification, examples.
34. Excipients for the controlled release of drugs from oral drugs.
35. Excipients of suppositories and pessaries.
36. Excipients stabilizing dispersion systems of solid substances in liquids, kinetic and aggregate instability.
37. Excipients stabilizing dispersion systems of liquid substances in liquids, instability of emulsions.
38. Surfactants, surface activity, chemical structure, the hydrophilic-lipophilic balance of surfactants, classification, and examples of surfactants.
39. Excipients stabilizing the composition of pharmaceutical preparations (antioxidants, chelating substances, buffer solutions, preservatives, and antimicrobial substances).
40. Excipients modifying sensory perceptions (isotonizing substances, taste corrigents, dyes).
41. Polymers as pharmaceutical excipients.

Dosage forms

42. Solutions as dosage form, application pathways, and composition.
43. Aromatic waters. Aromatic spirits. Syrups.
44. Therapeutic systems. Ocular, intrauterine, oral, transdermal, parenteral.
45. Patches. Cutaneous and transdermal patches.
46. Medicines prepared by drug extraction.
47. Powders as a semi-product and as a dosage form.
48. Granulates, granulation.
49. Gelatin capsules, gelatin pearls.
50. Oral tablets.
51. Coated tablets. Excipients for core coating.
52. Oral drugs with modified drug release.
53. Oromucosal dosage forms. Buccal tablets, gels, solutions, films. Lozenges. Chewing gums.
54. Single and multiple dosage forms.
55. Oral drugs with modified drug release, matrix, and reservoir systems.
56. Parenteral preparations. Sites of parenteral application.
57. Drug carriers. Liposomes. Microemulsions. Nanoparticles.
58. Use of intravenous infusions (replacement of blood, blood derivatives and body fluids, osmotic therapy, peritoneal dialysis, parenteral nutrition).
59. Microforms. Pellets. Microcapsules. Phase separation in the production of microcapsules.
60. Semi-solid preparation for cutaneous application. Classification.
61. Emulsions as dosage forms.
62. Suspensions as dosage forms.
63. Ointments.
64. Creams.
65. Pastes and poultices.
66. Liquid preparations for cutaneous application.

67. Powders for cutaneous application.
68. Eye preparations. Properties of ophthalmic drugs.
69. Ear and nasal preparation.
70. Rectal preparations.
71. Suppositories.
72. Vaginal preparations.
73. Pessaries.
74. Sprays and medicated foams.
75. Preparations for inhalation.
76. Pressurized pharmaceutical preparations. Pressure packaging of aerosols. Propellant gases.
77. Gels, gel structure.
78. Technology of radiopharmaceuticals´ preparation.
79. Preparations for veterinary use.

Biopharmaceutics

80. Biopharmaceutics. Bioavailability – absolute and relative. Bioequivalence
81. Release of drugs from pharmaceutical preparations. Disintegration and dissolution tests.
82. Absorption of drugs in relation to the dosage form and the application site of the drug.
83. Biopharmaceutic aspects of topical preparations.
84. Biopharmaceutic aspects of rectal preparations.
85. Biopharmaceutic aspects of oral preparations.
86. Bioavailability. Basic parameters of bioavailability.
87. Kinetics of drug release from pharmaceutical preparation.
88. Controlled drug availability during parenteral administration, depot drugs.
89. Targeted drug delivery and biodistribution. Targeting.
90. Biopharmaceutic aspects of eye, ear, and nose preparations.
91. Biopharmaceutic aspects of pulmonary preparations. Inhalation.

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