

1. A pharmacist made a tincture of althaea root. What is the proportion of herbal crude drug and extractant?

- a. 1:100
- b. 1:400
- c. 1:10
- d. 1:30
- e. 1:20**

2. A pharmacist revealed incompatibility in the formulation. Rp.: Sol. Collargoli 1% - 10 ml Sol. Adrenalinii hydrochloridi 0,1% - 1 ml M.D.S. Nasal drops. What chemical process underlies this incompatibility?

- a. Absorption
- b. Oxidation**
- c. Precipitation
- d. Neutralization
- e. Hydrolysis

3. A pharmacist prepared solution of ethacrydine lactate. What is the peculiarity of this substance dissolving?

- a. Grinding in a mortar with water
- b. Dissolving in potassium iodide solution
- c. Dissolving in freshly distilled water
- d. Dissolving in cold water
- e. Dissolving in hot water**

4. A pharmacist prepared an oil emulsion containing zinc oxide. Specify the rational method of substance incorporation:

- a. Dissolution in the finished emulsion
- b. Suspension-type incorporation into the prepared emulsion**
- c. Grinding with water for dilution of the primary emulsion
- d. Dissolution in oil
- e. Dissolution in water for preparation of the primary emulsion

5. A pharmacist made a tincture of Adonis herb. A peculiarity of its preparation is that the active substances are derived in:

- a. In the subacid medium
- b. In the acid medium
- c. In the alkalescent medium
- d. In the alkaline medium
- e. In the neutral medium**

6. A pharmacist is preparing fat-based suppositories by method of pouring. What base is to be used for this purpose?

- a. Butirol**
- b. Cocoa butter
- c. Spermaceti
- d. Wax
- e. Vaseline (petrolatum)

7. A pharmacist-technologist received an ointment formulation. Rp.: Unguentum Resorcini 1,5% - 10,0 Da. Signa. To be applied on the affected skin areas. The pharmacist incorporated dry medical substance into the ointment by the following way:

- a. Triturated with a part of vaseline
- b. Triturated with a few vaseline oil drops**
- c. Triturated with a few water drops
- d. Triturated with a few ethanol drops
- e. Added to molten vaseline

8. A pharmacy got an order for eye drops containing 1% solution of pilocarpine hydrochloride. What substance was used in order to ensure isotonicity?

- a. Sodium sulfate
- b. Sodium chloride**
- c. Glucose
- d. Boric acid
- e. Sodium nitrate

9. A pharmacist prepared some powders whose composition includes camphor. What capsules are required for their packaging?

- a. Waxed
- b. Paper
- c. Parchment**
- d. Paraffin
- e. Cellophane

10. Ophthalmic drops are produced on the base of concentrated riboflavin solution (1:5000). How much solution should be taken if the formulation says "0,001 of riboflavin"?

- a. 4 ml
- b. 1 ml
- c. 2 ml
- d. 3 ml
- e. 5 ml**

11. A doctor prescribed a patient 100 ml of tincture made out of 0,25 of Herba Thermopsisidis. How much dried concentrated extract of Herba Thermopsisidis should be weighed by a pharmacist?

- a. 0,2 g
- b. 0,1 g
- c. 0,5 g
- d. 0,3 g
- e. 0,25 g**

12. A patient has ordered 50 g of zinc ointment. How much zinc and Vaseline should be weighed by a pharmacist?

- a. 2,5 g and 47,5 g
- b. 10,0 g and 40,0 g
- c. 5,0 g and 45,0 g**
- d. 1,0 g and 49,0 g
- e. 0,5 g and 49,5 g

13. A doctor prescribed an olive oil emulsion whose composition includes anesthesin. In order that anesthesin can be incorporated into the emulsion it should be dissolved:

- a. In the alcohol and add to the primary emulsion
- b. In the oil before emulsifying**
- c. In the treated water
- d. In the mature emulsion
- e. In the primary emulsion

14. 100 ml of 0,9% sodium chloride solution were prepared according to the doctor's prescription. What sterilization schedule is required for this solution?

- a. 120°C - 15 minutes
- b. 120°C - 12 minutes
- c. 120°C - 8 minutes**
- d. 180°C - 30 minutes
- e. 100°C - 15 minutes

15. A pharmacist-technologist has to prepare a medication with the following formulation:
Rp.:Mentholi 0,1 Glycerini 10,0 M.D.S. Nasal drops. What is the reason for their incompatibility?

a. Adsorption of the medicinal agent

b. Separation of the mixture

c. Insolubility of ingredients

d. Eutectic alloy formation

e. Coagulation of colloidal system

16. A pharmacy got an order for a mixture containing manzanita decoction and belladonna extract.

What is the reason for their incompatibility?

a. Redox (oxidation-reduction) processes

b. Hydrolysis

c. Sedimentation

d. Liberation of gaseous substances

e. Coagulation of colloidal systems

17. A pharmacist prepared eyedrops with boric acid. What sterilization method was applied?

a. Sterilization by dry heat

b. Tyndallization

c. Sterilization by saturation vapor pressure

d. Sterilization by gases

e. By high-frequency current

18. A pharmacist refused preparation of nasal drops to a patient because of incompatibility between collargol and dimedrol written in the prescription. What is the reason for incompatibility between these ingredients?

a. Coagulation

b. Adsorption

c. Eutectic formation

d. Dissemination

e. Immiscibility

19. Preparation of multicomponent powders with phenyl salicylate and camphor is accompanied by generation of some fluid. What is the reason for their incompatibility?

a. Eutectic alloy formation

b. Crystallization water exudation

c. Gases separation

d. Hygroscopic components

e. Adsorption

20. A pharmacist was preparing an ointment with ricin oil and Vaseline but failed to get homogenous system. What is the most likely cause of incompatibility between these components?

a. Adsorption

b. Component immiscibility

c. Release of water of crystallization

d. Restricted solubility

e. Coagulation

21. A pharmacist revealed incompatibility in a prescription for powders with ascorbic acid and hexamethylenetetramine. What process takes place when these components are combined?

a. Crystallization water exudation

b. Mixture dampening

c. Immiscibility

d. Eutectic formation

e. Substances adsorption

22. A pharmacist revealed physical incompatibility caused by coagulation. This process takes place in a solution if the combination of the following substances is present:

a. Dimedrol and collargol

b. Dimedrol and sodium chloride

- c. Dimedrol and glucose
- d. Dimedrol and diazoline
- e. Dimedrol and novocaine

23. A pharmacist made a medicinal preparation according to the following formulation:

Rp.:Chloroformii Olei Helianthi Methylili salicylatis ana 10,0 M.D.S. For friction. Specify the kind of disperse system:

- a. Liniment - solution

- b. Liniment - emulsion
- c. Liniment - extractional
- d. Liniment suspension
- e. Liniment - combined

24. A pharmacist revealed physical incompatibility in a recipe. Specify the combination of drug substances demonstrating eutectic when blended:

- a. Camphor and menthol

- b. Streptocid and antipyrine
- c. Basic bismuth nitrate and magnesium oxide
- d. Ascorbic acid and hydrocarbonate sodium
- e. Glucose and phenyl salicylate

25. A pharmacist prepared a surface action ointment. What ointment base was used?

- a. Vaseline (petrolatum)

- b. Kutumovas basis
- c. Polyethylene oxide basis
- d. Gelatin-glycerol base
- e. Lanoline

26. A pharmacy received a prescription for preparation of dermatological ointment with benzylpenicillin. Specify the type of ointment that necessary to prepare:

- a. Combined

- b. Suspension ointment

- c. Hydrophilic ointment
- d. Liquid ointment
- e. Alloy ointment

27. During production of powders in a pharmacy physicochemical properties of certain ingredients should be taken into consideration. What pharmaceutical substance can be incorporated into the powder mass without additional grinding?

- a. Salicylic acid

- b. Streptocid

- c. Camphor

- d. Menthol

- e. Starch

28. Suspensions as heterogenous systems can be characterized by kinetic and sedimentary instability. What substance is used for increasing suspension stability with hydrophobic substances?

- a. Glucose

- b. Gelatose

- c. Boric acid

- d. Sodium chloride

- e. Sodium sulfate

29. Liquid dosage forms are prepared with concentrated solutions of pharmaceutical substances or under consideration of volume increase factor during substance dissolution when the following substance is used as a solvent:

- a. Polyethylene glycol-400

- b. Treated water

- c. Glycerol
- d. Aromatic water
- e. Ethanol (ethyl alcohol)

30. While preparing decoctions in volume from 1000 to 3000 ml time of processing in boiling water bath should be:

- a. 45 minutes
- b. 15 minutes
- c. 25 minutes
- d. 30 minutes

e. 40 minutes

31. Dispersion degree of drug substances is of great importance for the preparation of ophtalmic ointments. What drug substance should be thoroughly triturated with sterile vaseline oil before incorporating it into the pharmacopoeia-recommended ointment base?

- a. Pilocarpine hydrochloride
- b. Resorcin
- c. Mercuric oxide yellow**
- d. Zinc sulfate
- e. Ethyl morphine hydrochloride

32. A pharmacist has prepared an ointment intended for application on the open wound surface. Such kind of ointment should meet the following additional requirement:

- a. Prolonged action
- b. Sterility**
- c. Isoviscosity
- d. Isotonicity
- e. Isoionicity

33. Powders make up an important group among the extemporal medicinal preparations. Which of the following components can be incorporated into a powder without being preliminarily ground?

- a. Basic Bismuth nitrate**
- b. Camphor
- c. Calcium gluconate
- d. Xeroform
- e. Ascorbic acid

34. A pharmacist is preparing powders according to the following formulation: Rp.:Scopolamini hydrobromidi 0,0003 Ephedrini hydrochlorodi 0,05 Sachari 0,15 M.f. pulvis D.t.d. № 10 S. 1 powder thrice a day. Calculate the mass of 1 powder providing that the trituration (1:100) is used:

- a. 0,203
- b. 0,20**
- c. 0,23
- d. 0,15
- e. 0,17

35. A pharmacist is preparing powders by the way of triturating one of the components with ethyl alcohol. Such technology of preparation is typical for the following substance:

- a. Starch
- b. Zinc oxide
- c. Bolus alba
- d. Streptocid**
- e. Talc

36. A pharmacist prepared a suspension. It must contain the following amount of fluid in order to comply with Deriagins rule:

- a. 0,1-1,0 millilitre for 1,0 substance
- b. 0,4-0,6 millilitre for 1,0 substance**

- c. 1,5-0,7 millilitre for 1,0 substance
- d. 1-0,8 millilitre of 1,0 substance
- e. 0,9-2 millilitres for 1,0 substance

37. A pharmacy got an order for powders containing ascorbic acid and sodium hydrocarbonate. What process takes place between the ingredients?

- a. Sedimentation
- b. Stratification
- c. Oxidization
- d. Absorption
- e. Dampening**

38. A pharmacy got the following recipe: Rp.:Mucilaginis Amyli 50,0 Da. Signa. For the enema purposes. How much starch and distilled water did the pharmacist use in order to make this preparation?

- a. 5,0 g of starch; 45 ml of distilled water
- b. 10,0 g of starch; 40 ml of distilled water
- c. 1,0 g of starch; 50 ml of distilled water
- d. 2,0 g of starch; 48 ml of distilled water
- e. 1,0 g of starch; 49 ml of distilled water**

39. A pharmacy produces some injection solutions that have to be apyrogenic. Solution of the following substance can be depyrogenized by method of adsorption with activated carbon?

- a. Scopolamine hydrobromide
- b. Platiphyllini hydrotartras
- c. Atropine sulfate
- d. Papaverine hydrochloride
- e. Glucose**

40. Powders that quickly enter into a reaction in presence of water and emit carbon dioxide relate to the following group:

- a. Powders for external use
- b. Effervescent powder**
- c. Powders for oral use
- d. Soluble powder
- e. Nasal powders

41. Calculate the quantity of dried belladonna extract (1:2) required for preparing the following drug formulation: Extracti Belladonnae 0,015 Magnesii oxydi 0,5 Natrii hydrocarbonatis 0,2 Misce ut fiat pulvis Da tales doses №10 Signa. 1 powder thrice a day

- a. 0,15
- b. 0,6
- c. 0,015
- d. 0,3**
- e. 0,4

42. A pharmacist is preparing rectal suppositories based on cocoa butter and containing dimedrol with mass concentration less than 5%. For rational incorporation of dimedrol into the base it should be solved:

- a. In the melted cocoa butter
- b. In olive oil
- c. In the minimum amount of treated water**
- d. In vaseline oil
- e. In alcohol

43. A pharmacist needs to sterilize 250 ml of glucose solution for injections. How many minutes should the solution undergo sterilization in the autoclave under the temperature of 120°C?

- a. 25

- b. 30
- c. 8
- d. 15

e. 12

44. A pharmacist is preparing an ointment under aseptic conditions on the sterile ointment base - composition of vaseline and lanoline at a ratio 6:4. The drug substance is incorporated by suspension type. Such technology of ointment preparation is typical for the following substance:

- a. Pilocarpine hydrochloride
- b. Sodium sulfate
- c. Sodium chloride
- d. Thiamine chloride

e. Benzylpenicillin sodium salt

45. This substance is of blue colour but unlike the colouring substances it doesn't leave any stain. The powders prepared out of it are made according to the general rules. What substance is it?

- a. Furacilin
- b. Copper sulfate
- c. Riboflavin
- d. Ethacridine lactate
- e. Acrichine

46. A pharmacist brews an aqueous extract out of medicinal raw material in the tightly closed infusion vessel for 15 minutes and stirs it without opening the lid. Such technology of infusion preparation is typical for the following medicinal raw material:

- a. Cowberry leaves
- b. Mint leaves
- c. Senna leaves
- d. Bilberry leaves
- e. Manzanita leaves

47. A pharmacist made 10 powders containing atropine sulfate at a rate of 0,00005 pro dose. What trituration did he use?

- a. 1:100
- b. 1:1000
- c. 1:20
- d. 1:50
- e. 1:10

48. A pharmacy got an order for manzanita decoction and hexamethylenetetramine. A pharmacist cancelled it with a stamp "Invalid prescription". What is the reason for the incompatibility?

- a. Insolubility
- b. Deposition
- c. Oxidation
- d. Eutectic
- e. Moisture-repellant

49. A pharmacist prepares internal drops with the following formulation: 5 ml of adoniside, 10 ml of valerian and lily-of-the-valley tincture each, 0,1 g of menthol, 2,0 g of potassium bromide. It will be efficient to dissolve potassium bromide in the following substance:

- a. Potassium bromide should be added into the selling vial last of all
- b. In the adoniside
- c. In the valerian tincture
- d. In the lily-of-the-valley tincture
- e. In the mixture of tinctures

50. A pharmacist technologist revealed incompatibility in the following prescription: Rp.:Mentholi 0,5 Natrii hydrocarbonatis Natrii tetraboratis aa 1,5 Aquae purificatae 100 ml M.D.S. 1 tablespoon twice a

day. In order to prepare this drug form the pharmacist should apply the following techniques:

- a. Apply fractional dissolution
- b. Change one of the component
- c. Change dosage form
- d. Add stabilizer**
- e. Apply another solvent

51. A pharmacist is preparing vaginal suppositories by method of pouring. Which hydrophilic base can he use for this purpose?

- a. Cocoa butter
- b. Hard fat
- c. Butyrol
- d. Polyethylene oxide**
- e. Vitepsol

52. An edema can be relieved by means of hypertonic solutions. What phenomenon takes place in the blood cells after injection of such solution?

- a. Hydrolysis
- b. Lipolysis
- c. Electrolysis
- d. Plasmolysis**
- e. Hemolysis

53. A pharmacist made a tincture of althaea root. What is the proportion of herbal crude drug and extractant?

- a. 1:30
- b. 1:10
- c. 1:20**
- d. 1:100
- e. 1:400

54. A pharmacist revealed incompatibility in the formulation.Rp.:Sol. Collargoli 1% - 10 mlSol. Adrenalinini hydrochloridi 0,1% - 1 mlM.D.S. Nasal drops.What chemical process underlies this incompatibility?

- a. Adsorption
- b. Oxidation**
- c. Precipitation
- d. Neutralization
- e. Hydrolysis

55. A pharmacist made a tincture of Adonis herb. A peculiarity of its preparation is that the active substances are derived in:

- a. In the alkalescent medium
- b. In the subacid medium
- c. In the acid medium
- d. In the neutral medium**
- e. In the alkaline medium

56. A pharmacist is preparing fat-based suppositories by method of pouring. What base is to be used for this purpose?

- a. Wax
- b. Spermaceti
- c. Vaseline (petrolatum)
- d. Cocoa butter
- e. Butirol**

57. A pharmacist-technologist received an ointment formulation. Rp.:Unguentum Resorcini 1,5% - 10,0Da. Signa. To be applied on the affected skin areas.The pharmacist incorporated dry medical

substance into the ointment by the following way:

- a. Triturated with a part of vaseline
- b. Triturated with a few vaseline oil drops**
- c. Triturated with a few water drops
- d. Triturated with a few ethanol drops
- e. Added to molten vaseline

58. A pharmacy got an order for eye drops containing 1% solution of pilocarpine hydrochloride. What substance was used in order to ensure isotonicity?

- a. Glucose
- b. Boric acid
- c. Sodium chloride**
- d. Sodium nitrate
- e. Sodium sulfate

59. Ophthalmic drops are produced on the base of concentrated riboflavin solution (1:5000). How much solution should be taken if the formulation says "0,001 of riboflavin"?

- a. 2 ml
- b. 4 ml
- c. 1 ml
- d. 5 ml**
- e. 3 ml

60. A pharmacist made eye drops of pilocarpine hydrochloride and adrenaline hydrochloride solution. A peculiarity of the incorporation of the adrenaline hydrochloride solution is that it is added:

- a. After isotoning
- b. After sterilization, aseptic**
- c. To the half dose of solvent
- d. After dissolving of solids
- e. In the first place

61. A doctor prescribed a patient 100 ml of tincture made out of 0,25 of Herba Thermopsisidis. How much dried concentrated extract of Herba Thermopsisidis should be weighed by a pharmacist?

- a. 0,1 g
- b. 0,25 g**
- c. 0,3 g
- d. 0,5 g
- e. 0,2 g

62. A patient has ordered 50 g of zinc ointment. How much zinc and Vaseline should be weighed by a pharmacist?

- a. 5,0 g and 45,0 g**
- b. 2,5 g and 47,5 g
- c. 0,5 g and 49,5 g
- d. 1,0 g and 49,0 g
- e. 10,0 g and 40,0 g

63. A patient has been administered powders containing menthol. What is the best way to achieve the required extent of menthol comminution?

- a. To triturate it with purified water
- b. To triturate it with glycerine or chloroform
- c. To triturate it with alcohol or ether**
- d. To triturate it with other components of the formulation
- e. To triturate it thoroughly with sugar

64. Stability of suspensions can be enhanced by substances which increase the viscosity of the dispersion medium. Specify the substance that exhibits such properties:

- a. Ether

b. Glycerol

c. Ethanol

d. Purified water

e. Dimexid

65. A doctor prescribed an olive oil emulsion whose composition includes anesthesin. In order that anesthesin can be incorporated into the emulsion it should be dissolved:

a. In the oil before emulsifying

b. In the treated water

c. In the alcohol and add to the primary emulsion

d. In the primary emulsion

e. In the mature emulsion

66. 100 ml of 0,9% sodium chloride solution were prepared according to the doctor's prescription.

What sterilization schedule is required for this solution?

a. 120°C - 12 minutes

b. 180°C - 30 minutes

c. 100°C - 15 minutes

d. 120°C - 8 minutes

e. 120°C - 15 minutes

67. A pharmacist-technologist has to prepare a medication with the following

formulation: Rp.:Mentholi 0,1Glycerini 10,0M.D.S. Nasal drops.What is the reason for their

incompatibility?

a. Coagulation of colloidal system

b. Insolubility of ingredients

c. Adsorption of the medicinal agent

d. Separation of the mixture

e. Eutectic alloy formation

68. A pharmacist prepared eyedrops with boric acid. What sterilization method was applied?

a. Sterilization by gases

b. By high-frequency current

c. Tyndallization

d. Sterilization by dry heat

e. Sterilization by saturation vapor pressure

69. A pharmacist refused preparation of nasal drops to a patient because of incompatibility

between collargol and dimedrol written in the prescription. What is the reason for incompatibility

between these ingredients?

a. Immiscibility

b. Dissemination

c. Eutectic formation

d. Coagulation

e. Adsorption

70. Preparation of multicomponent powders with phenyl salicylate and camphor is accompanied by generation of some fluid. What is the reason for their incompatibility?

a. Crystallization water exudation

b. Adsorption

c. Eutectic alloy formation

d. Hygroscopic components

e. Gases separation

71. A pharmacist was preparing an ointment with ricin oil and Vaseline but failed to get homogenous system. What is the most likely cause of incompatibility between these components?

a. Release of water of crystallization

b. Restricted solubility

c. Component immiscibility

d. Coagulation

e. Adsorption

72. A doctor wrote a prescription for the tincture of digitalis with hydrochloric acid. What is the reason for their incompatibility?

a. Change in odour

b. Hydrolysis (with no visible change)

c. Gassing

d. Precipitation

e. Change in colour

73. A pharmacist revealed incompatibility in a prescription for powders with ascorbic acid and hexamethylenetetramine. What process takes place when these components are combined?

a. Eutectic formation

b. Substances adsorption

c. Crystallization water exudation

d. Mixture dampening

e. Immiscibility

74. A pharmacist revealed physical incompatibility caused by coagulation. This process takes place in a solution if the combination of the following substances is present:

a. Dimedrol and sodium chloride

b. Dimedrol and novocaine

c. Dimedrol and collargol

d. Dimedrol and diazoline

e. Dimedrol and glucose

75. A pharmacist made a medicinal preparation according to the following formulation: Rp.: Chloroformii Olei HelianthiMethylii salicylatis ana 10,0M.D.S. For friction. Specify the kind of disperse system:

a. Liniment - combined

b. Liniment suspension

c. Liniment - extractional

d. Liniment - solution

e. Liniment - emulsion

76. A pharmacist revealed physical incompatibility in a recipe. Specify the combination of drug substances demonstrating eutectic when blended:

a. Streptocid and antipyrine

b. Glucose and phenyl salicylate

c. Camphor and menthol

d. Ascorbic acid and hydrocarbonate sodium

e. Basic bismuth nitrate and magnesium oxide

77. A pharmacist prepared a surface action ointment. What ointment base was used?

a. Polyethylene oxide basis

b. Vaseline (petrolatum)

c. Kutumovas basis

d. Lanoline

e. Gelatin-glycerol base

78. A pharmacy received the following prescription: 0,0002 g of scopolamine hydrobromide per 1 powder. How much of 1:100 trituration is required for the preparation of 10 powders?

a. 2,0

b. 0,2

c. 4,0

d. 0,04

e. 0,4

79. A pharmacy received a prescription for 3% alcohol solution of boric acid. What concentration of ethyl alcohol is required for preparing the drug form?

- a. 60%
- b. 90%
- c. 96%
- d. 70%**
- e. 40%

80. Eye drops are prepared with an ointment base which is an alloy of vaseline and lanolin. Specify the method of its sterilization:

- a. Flowing steam
- b. Ethylene oxide
- c. Dry heat**
- d. Pasteurization
- e. Tyndallization

81. A pharmacy received a prescription for preparation of dermatological ointment with benzylpenicillin. Specify the type of ointment that necessary to prepare:

- a. Hydrophilic ointment
- b. Liquid ointment
- c. Suspension ointment**
- d. Alloy ointment
- e. Combined

82. Suspensions as heterogenous systems can be characterized by kinetic and sedimentary instability. What substance is used for increasing suspension stability with hydrophobic substances?

- a. Sodium sulphate
- b. Glucose
- c. Sodium chloride
- d. Boric acid
- e. Gelatose**

83. Liquid dosage forms are prepared with concentrated solutions of pharmaceutical substances or under consideration of volume increase factor during substance dissolution when the following substance is used as a solvent:

- a. Treated water**
- b. Glycerol
- c. Polyethylene glycol-400
- d. Ethanol (ethyl alcohol)
- e. Aromatic water

84. While preparing decoctions in volume from 1000 to 3000 ml time of processing in boiling water bath should be:

- a. 15 minutes
- b. 40 minutes**
- c. 30 minutes
- d. 25 minutes
- e. 45 minutes

85. How much water should be taken in order to prepare 200 ml of aqueous extract of motherwort (water absorption coefficient = 2 ml/g)?

- a. 160 ml
- b. 210 ml
- c. 220 ml
- d. 200 ml
- e. 240 ml**

86. Dispersion degree of drug substances is of great importance for the preparation of ophthalmic ointments. What drug substance should be thoroughly triturated with sterile vaseline oil before incorporating it into the pharmacopoeia-recommended ointment base?

- a. Resorcin
- b. Zinc sulfate
- c. Ethyl morphine hydrochloride
- d. Mercuric oxide yellow**
- e. Pilocarpine hydrochloride

87. A pharmacist has prepared an ointment intended for application on the open wound surface. Such kind of ointment should meet the following additional requirement:

- a. Sterility**
- b. Isovicosity
- c. Prolonged action
- d. Isoionicity
- e. Isotonicity

88. In course of preparation of suppositories by the pumping method the suppository mass became viscous and fluid after the incorporation of chloral hydrate into the cocoa butter. What substance should be added to the suppository mass in order to restore its density and plasticity?

- a. Starch
- b. Wax**
- c. Purified water
- d. Glycerine
- e. Dimexid

89. Powders make up an important group among the extemporal medicinal preparations. Which of the following components can be incorporated into a powder without being preliminarily ground?

- a. Ascorbic acid
- b. Xeroform
- c. Calcium gluconate
- d. Basic Bismuth nitrate**
- e. Camphor

90. A pharmacist is preparing powders according to the following formulation: Rp.: Scopolamini hydrobromidi 0,0003 Ephedrini hydrochlorodi 0,05 Sachari 0,15 M.f. pulvis D.t.d. № 10S. 1 powder thrice a day. Calculate the mass of 1 powder providing that the trituration (1:100) is used:

- a. 0,17
- b. 0,203
- c. 0,15
- d. 0,23
- e. 0,20**

91. A pharmacist is preparing powders by the way of triturating one of the components with ethyl alcohol. Such technology of preparation is typical for the following substance:

- a. Talc
- b. Starch
- c. Streptocid**
- d. Zinc oxide
- e. Bolus alba

92. A pharmacist prepares several different solutions with antibiotics under aseptic conditions. He can sterilize the solution of the following substance:

- a. Neomycin sulphate
- b. Benzylpenicillin-sodium
- c. Chloramphenicol**
- d. Benzylpenicillin-potassium
- e. Polymyxin sulphate

93. A pharmacist prepared a suspension. It must contain the following amount of fluid in order to comply with Dericins rule:

- a. 1,5-0,7 millilitre for 1,0 substance
- b. 1-0,8 millilitre of 1,0 substance
- c. 0,4-0,6 millilitre for 1,0 substance**
- d. 0,9-2 millilitres for 1,0 substance
- e. 0,1-1,0 millilitre for 1,0 substance

94. A pharmacist has revealed an incompatibility in the prescription. What drug substances form an eutectic mixture?

- a. Calcium chloride + sodium chloride
- b. Antipyrine + analgin
- c. Chloral hydrate + camphor**
- d. Ephedrine hydrochloride + glucose
- e. Sodium hydrocarbonate + hexamethylenetetramine

95. A pharmacy got the following recipe: Rp.: Mucilaginis Amyli 50,0Da. Signa. For the enema purposes. How much starch and distilled water did the pharmacist use in order to make this preparation?

- a. 2,0 g of starch; 48 ml of distilled water
- b. 1,0 g of starch; 50 ml of distilled water
- c. 1,0 g of starch; 49 ml of distilled water**
- d. 5,0 g of starch; 45 ml of distilled water
- e. 10,0 g of starch; 40 ml of distilled water

96. A pharmacy produces some injection solutions that have to be apyrogenic. Solution of the following substance can be depyrogenized by method of adsorption with activated carbon?

- a. Atropine sulfate
- b. Scopolamine hydrobromide
- c. Platiphyllini hydrotartras
- d. Glucose**
- e. Papaverine hydrochloride

97. A pharmacy received a prescription for a topical powder including a substance that is hard to disperse. Which of the listed fluids may be used for dispersing the substance?

- a. Water for injections
- b. Purified water
- c. Diethyl ether**
- d. Dimexid
- e. Isopropyl alcohol

98. A pharmacist has to prepare suppositories with a glycerine gelatin base by the molding method. What is the ratio of gelatin, water and glycerine required for the base?

- a. 2:2:4
- b. 2:1:5
- c. 3:2:3
- d. 1:2:5**
- e. 1:3:4

99. Powders that quickly enter into a reaction in presence of water and emit carbon dioxide relate to the following group:

- a. Powders for oral use
- b. Soluble powder
- c. Effervescent powder**
- d. Nasal powders
- e. Powders for external use

100. Calculate the quantity of dried belladonna extract (1:2) required for preparing the following drug

formulation: Extracti Belladonnae 0,015Magnesii oxydi 0,5Natrii hydrocarbonatis 0,2Misce ut fiat pulvis Da tales doses №10Signa. 1 powder thrice a day

a. 0,3

b. 0,4

c. 0,015

d. 0,6

e. 0,15

101. Specify the type of the following liniment: Ol. Helianthi 7,4Sol. Ammonii caustici 25 mlAc. Oleinici 0,1M.f. linimentumD.S. To be rubbed in

a. Liniment-solution

b. Combined liniment

c. Liniment, emulsion o/w

d. Liniment-suspension

e. Liniment, emulsion w/o

102. A pharmacist needs to sterilize 250 ml of glucose solution for injections. How many minutes should the solution undergo sterilization in the autoclave under the temperature of 120°C?

a. 12

b. 15

c. 30

d. 25

e. 8

103. A pharmacist is preparing an ointment under aseptic conditions on the sterile ointment base - composition of vaseline and lanoline at a ratio 6:4. The drug substance is incorporated by suspension type. Such technology of ointment preparation is typical for the following substance:

a. Thiamine chloride

b. Sodium chloride

c. Benzylpenicillin sodium salt

d. Pilocarpine hydrochloride

e. Sodium sulfate

104. This substance is of blue colour but unlike the colouring substances it doesn't leave any stain. The powders prepared out of it are made according to the general rules. What substance is it?

a. Ethacridine lactate

b. Acrichine

c. Furacilin

d. Copper sulfate

e. Riboflavin

105. A pharmacy got an order for manzanita decoction and hexamethylenetetramine. A pharmacist cancelled it with a stamp "Invalid prescription". What is the reason for the incompatibility?

a. Oxidation

b. Eutectic

c. Deposition

d. Moisture-repellant

e. Insolubility

106. A pharmacist technologist revealed incompatibility in the following prescription: Rp.:Mentholi 0,5Natrii hydrocarbonatisNatrii tetraboratis aa 1,5Aquaee purificatae 100 mlM.D.S. 1 tablespoon twice a day. In order to prepare this drug form the pharmacist should apply the following techniques:

a. Apply another solvent

b. Apply fractional dissolution

c. Add stabilizer

d. Change one of the component

e. Change dosage form

107. A pharmacist is preparing vaginal suppositories by method of pouring. Which hydrophilic base can he use for this purpose?

- a. Hard fat
- b. Butyrol
- c. Cocoa butter
- d. Vitepsol
- e. Polyethylene oxide**

108. A pharmacist prepared powders including extract of belladonna in the amount of 0,015 per dose. For ten doses he had to take the following amount of dry extract:

- a. 0,03 g
- b. 0,015 g
- c. 0,15 g
- d. 1,5 g
- e. 0,3 g**

109. A pharmacist has prepared a tincture of althaea root. What is the proportion of herbal raw material and extractant?

- a. 1:400
- b. 1:20**
- c. 1:30
- d. 1:10
- e. 1:100

110. A pharmacist revealed incompatibility in the formulation.Rp.: Sol. Collargoli 1% - 10 mlSol. Adrenalinii hydrochloridi 0,1% - 1 mlM.D.S. Nasal drops.What chemical process underlies this incompatibility?

- a. Neutralization
- b. Hydrolysis
- c. Adsorption
- d. Oxidation**
- e. Precipitation

111. A pharmacist prepared an oil emulsion containing zinc oxide. Specify the rational method of substance incorporation:

- a. Suspension-type incorporation into the prepared emulsion**
- b. Grinding with water for dilution of the primary emulsion
- c. Dissolution in the finished emulsion
- d. Dissolution in water for preparation of the primary emulsion
- e. Dissolution in oil

112. A pharmacist made a tincture of Adonis herb. A peculiarity of its preparation is that the active substances are derived in:

- a. In the neutral medium**
- b. In the alkaline medium
- c. In the acid medium
- d. In the subacid medium
- e. In the alkalescent medium

113. A pharmacist is preparing fat-based suppositories by method of pouring. What base is to be used for this purpose?

- a. Vaseline (petrolatum)
- b. Wax
- c. Spermaceti
- d. Butirol**
- e. Cocoa butter

114. A pharmacist-technologist received an ointment formulation. Rp.: Unguentum Resorcini 1,5% -

10,0 Da. Signa. To be applied on the affected skin areas. The pharmacist incorporated dry medical substance into the ointment by the following way:

- a. Triturated with a few water drops
- b. Triturated with a few ethanol drops
- c. Triturated with a few vaseline oil drops
- d. Added to molten vaseline
- e. Triturated with a part of vaseline

115. A pharmacy got an order for eye drops containing 1% solution of pilocarpine hydrochloride. What substance was used in order to ensure isotonicity?

- a. Boric acid
- b. Sodium nitrate
- c. Sodium sulfate
- d. Sodium chloride
- e. Glucose

116. A pharmacist prepared some powders whose composition includes camphor. What capsules are required for their packaging?

- a. Cellophane
- b. Parchment
- c. Waxed
- d. Paper
- e. Paraffin

117. A pharmacist prepared suppository mass with novocaine and cocoa butter, but it turned out to be crumbling. What substance to be added to form a plastic mass:

- a. Anhydrous lanolin
- b. Paraffin
- c. Wax
- d. Vaseline
- e. Hydrous lanolin

118. A pharmacist has to sterilize 400 ml of calcium gluconate solution for injections. Specify the time of autoclave sterilization of the solution at 120°C:

- a. 10 minutes
- b. 30 minutes
- c. 20 minutes
- d. 15 minutes
- e. 12 minutes

119. Ophthalmic drops are produced on the base of concentrated riboflavin solution (1:5000). How much solution should be taken if the formulation says "0,001 of riboflavin"?

- a. 3 ml
- b. 2 ml
- c. 5 ml
- d. 4 ml
- e. 1 ml

120. A pharmacist made eye drops of pilocarpine hydrochloride and adrenaline hydrochloride solution. A peculiarity of the incorporation of the adrenaline hydrochloride solution is that it is added:

- a. To the half dose of solvent
- b. After dissolving of solids
- c. After sterilization, aseptic
- d. In the first place
- e. After isotoning

121. A patient acquired mint leaves at a pharmacy. What recommendations regarding infusion of this herbal raw material must be given by the pharmacist?

- a. The extract is to be immediately filtered after infusing
- b. The extract is to be artificially cooled 15 minutes after infusing
- c. The infusion is to be prepared on an open fire
- d. The infusion is to be prepared at room temperature
- e. The infusion is to be prepared in a tightly closed vessel**

122. A patient has ordered 50 g of zinc ointment. How much zinc and Vaseline should be weighed by a pharmacist?

- a. 10,0 g and 40,0 g
- b. 1,0 g and 49,0 g
- c. 0,5 g and 49,5 g
- d. 5,0 g and 45,0 g**
- e. 2,5 g and 47,5 g

123. A patient has been administered a solution containing boric acid and camphor. What solvent should his doctor prescribe in order to prevent physical incompatibility?

- a. Ethyl alcohol 40%
- b. Ethyl alcohol 70%**
- c. Sunflower oil
- d. Purified water
- e. Glycerol

124. A patient has been administered powders containing menthol. What is the best way to achieve the required extent of menthol comminution?

- a. To triturate it with glycerine or chloroform
- b. To triturate it with other components of the formulation
- c. To triturate it thoroughly with sugar
- d. To triturate it with alcohol or ether**
- e. To triturate it with purified water

125. Stability of suspensions can be enhanced by substances which increase the viscosity of the dispersion medium. Specify the substance that exhibits such properties:

- a. Dimexid
- b. Ether
- c. Purified water
- d. Ethanol
- e. Glycerol**

126. A doctor prescribed his patient an emulsion of olive oil which includes anesthesin. To incorporate anesthesin into the emulsion it must be dissolved:

- a. In the alcohol, and then added to the primary emulsion
- b. In oil before preparing the emulsion**
- c. In the purified water
- d. In the finished emulsion
- e. In the primary emulsion

127. The patient has been prescribed Linimentum Rosentali. It is composed of:

- a. Castor oil, calcium chloride, alcohol
- b. Iodine, potassium chloride, glycerin
- c. Sunflower oil, ammonia, oleic acid
- d. Paraffin, alcohol, chloroform, iodine**
- e. Chloroform, methyl salicylate, turpentine

128. 100 ml of 0,9% sodium chloride solution were prepared according to the doctor's prescription. What sterilization schedule is required for this solution?

- a. 100°C - 15 minutes
- b. 120°C - 8 minutes**
- c. 120°C - 15 minutes

- d. 120°C - 12 minutes
- e. 180°C - 30 minutes

129. A pharmacist-technologist has to prepare a medication with the following formulation: Rp.:
Mentholi 0,1Glycerini 10,0M.D.S. Nasal drops. What is the reason for their incompatibility?

- a. Insolubility of ingredients
- b. Adsorption of the medicinal agent
- c. Coagulation of colloidal system
- d. Eutectic alloy formation
- e. Separation of the mixture

130. A pharmacy got an order for a mixture containing manzanita decoction and belladonna extract. What is the reason for their incompatibility?

- a. Coagulation of colloidal systems
- b. Sedimentation
- c. Redox (oxidation-reduction) processes
- d. Hydrolysis
- e. Liberation of gaseous substances

131. A pharmacist prepares a suspension ointment. What substance is soluble in water, but should be incorporated into the dermatological ointments as a suspension?

- a. Resorcinol
- b. Sulfacyl sodium
- c. Potassium iodide
- d. Furacilin
- e. Zinc oxide

132. A pharmacist prepared eyedrops with boric acid. What sterilization method was applied?

- a. Sterilization by saturation vapor pressure

- b. Sterilization by dry heat
- c. By high-frequency current
- d. Sterilization by gases
- e. Tyndallization

133. A pharmacist refused preparation of nasal drops to a patient because of incompatibility between collargol and dimedrol written in the prescription. What is the reason for incompatibility between these ingredients?

- a. Adsorption
- b. Immiscibility
- c. Coagulation
- d. Dissection
- e. Eutectic formation

134. Preparation of multicomponent powders with phenyl salicylate and camphor is accompanied by generation of some fluid. What is the reason for their incompatibility?

- a. Gases separation
- b. Eutectic alloy formation
- c. Crystallization water exudation
- d. Adsorption
- e. Hygroscopic components

135. A pharmacist was preparing an ointment with ricin oil and Vaseline but failed to get homogenous system. What is the most likely cause of incompatibility between these components?

- a. Component immiscibility
- b. Release of water of crystallization
- c. Adsorption
- d. Coagulation
- e. Restricted solubility

136. A doctor gave a prescription for the tincture of digitalis with hydrochloric acid. What is the reason for their incompatibility?

- a. Change in colour
- b. Change in odour
- c. Precipitation
- d. Gassing
- e. Hydrolysis (with no visible changes)**

137. A pharmacist revealed incompatibility in a prescription for powders with ascorbic acid and hexamethylene tetramine. What process takes place when these components are combined?

- a. Mixture dampening**
- b. Immiscibility
- c. Isolation of crystallization water
- d. Adsorption
- e. Eutectic

138. A pharmacist revealed physical incompatibility caused by coagulation. This process takes place in a solution if the combination of the following substances is present:

- a. Dimedrol and novocaine
- b. Dimedrol and diazoline
- c. Dimedrol and glucose
- d. Dimedrol and collargol**
- e. Dimedrol and sodium chloride

139. A pharmacist made a medicinal preparation according to the following formulation: Rp.: ChloroformiiOlei HelianthiMethylii salicylatis ana 10,0M.D.S. For friction. Specify the kind of disperse system:

- a. Liniment - emulsion
- b. Liniment - combined
- c. Liniment - solution**
- d. Liniment suspension
- e. Liniment - extractional

140. A pharmacy received the following prescription: 0,0002 g of scopolamine hydrobromide per 1 powder. How much of 1:100 trituration is required for the preparation of 10 powders?

- a. 0,04
- b. 0,4
- c. 2,0
- d. 0,2**
- e. 4,0

141. A pharmacy received a prescription for 3% alcohol solution of boric acid. What concentration of ethyl alcohol is required for preparing the drug form?

- a. 70%**
- b. 40%
- c. 96%
- d. 90%
- e. 60%

142. A pharmacy received a prescription for preparation of dermatological ointment with benzylpenicillin. Specify the type of ointment that necessary to prepare:

- a. Liquid ointment
- b. Alloy ointment
- c. Combined
- d. Suspension ointment**
- e. Hydrophilic ointment

143. A pharmacy received a prescription for powders with doctors instruction to dispense powders in

gelatin capsules. Which of the following substances is included in the composition of these powders?

- a. Streptocide
- b. Magnesium oxide
- c. Ethacridine lactate
- d. Diphenhydramine
- e. Glucose

144. During production of powders in a pharmacy physiochemical properties of certain ingredients should be taken into consideration. What pharmaceutical substance can be incorporated into the powder mass without additional grinding?

- a. Menthol
- b. Camphor
- c. Starch
- d. Salicylic acid
- e. Streptocid

145. Suspensions as heterogenous systems can be characterized by kinetic and sedimentary instability. What substance is used for increasing suspension stability with hydrophobic substances?

- a. Glucose
- b. Gelatose
- c. Boric acid
- d. Sodium chloride
- e. Sodium sulphate

146. A pharmacist prepared 150 ml of Adonis vernalis infusion using dry extract concentrate [1:1] that had to be weighed in the amount of:

- a. 10,0
- b. 7,5
- c. 5,0
- d. 15,0
- e. 22,5

147. While preparing decoctions in volume from 1000 to 3000 ml time of processing in boiling water bath should be:

- a. 40 minutes
- b. 30 minutes
- c. 15 minutes
- d. 45 minutes
- e. 25 minutes

148. How much water should be taken in order to prepare 200 ml of aqueous extract of motherwort (water absorption coefficient = 2 ml/g)?

- a. 240 ml
- b. 200 ml
- c. 210 ml
- d. 160 ml
- e. 220 ml

149. A pharmacy received a prescription: Rp.: Dibazoli 0,05 Papaverini hydrochloridi 0,15 Sacchari 2,5 M. fiat pulv. Divide in partes aequales №10. Specify the weight of a single powder dose:

- a. 0,30
- b. 0,27
- c. 0,25
- d. 2,7
- e. 0,26

150. In course of preparation of suppositories by the pumping method the suppository mass became viscous and fluid after the incorporation of chloral hydrate into the cocoa butter. What substance

should be added to the suppository mass in order to restore its density and plasticity?

- a. Purified water
- b. Glycerine
- c. Wax
- d. Dimexid
- e. Starch

151. Powders make up an important group among the extemporal medicinal preparations. Which of the following components can be incorporated into a powder without being preliminarily ground?

- a. Xeroform
- b. Calcium gluconate
- c. Ascorbic acid
- d. Camphor
- e. Basic Bismuth nitrate

152. A pharmacist is preparing powders according to the following formulation:

Rp.: Scopolamini hydrobromidi 0,0003

Ephedrini hydrochlorodi 0,05

Sachari 0,15

M.f. pulvis

D.t.d. № 10

S. 1 powder thrice a day.

Calculate the mass of 1 powder providing that the trituration (1:100) is used:

- a. 0,203
- b. 0,20
- c. 0,23
- d. 0,15
- e. 0,17

153. A pharmacist is preparing powders by the way of triturating one of the components with ethyl alcohol. Such technology of preparation is typical for the following substance:

- a. Bolus alba
- b. Streptocid
- c. Talc
- d. Starch
- e. Zinc oxide

154. A pharmacist prepares several different solutions with antibiotics under aseptic conditions.

He can sterilize the solution of the following substance:

- a. Polymyxin sulphate
- b. Chloramphenicol
- c. Neomycin sulphate
- d. Benzylpenicillin-sodium
- e. Benzylpenicillin-potassium

155. A pharmacist has prepared an emulsion. Specify the way of incorporation of the fat-soluble substances:

- a. They are incorporated in undissolved form
- b. They are dissolved in purified water
- c. They are dissolved in oil
- d. They are added to the finished emulsion
- e. They are added to the emulsifier

156. A pharmacist has revealed an incompatibility in the prescription. What drug substances form an eutectic mixture?

- a. Chloral hydrate + camphor
- b. Calcium chloride + sodium chloride
- c. Sodium hydrocarbonate + hexamethylenetetramine

- d. Ephedrine hydrochloride + glucose
- e. Antipyrine + analgin

157. A pharmacy received a prescription for a mixture. What drug substances are incompatible?

- a. Papaverine hydrochloride + aminophylline
- b. Sodium bromide + sodium chloride
- c. Phenobarbital + glucose
- d. Codeine phosphate + extract of Thermopsis
- e. Novocaine + diphenhydramine

158. A pharmacy got an order for powders containing ascorbic acid and sodium hydrocarbonate. What process takes place between the ingredients?

- a. Dampening
- b. Absorption
- c. Stratification
- d. Sedimentation
- e. Oxidization

159. A pharmacy got the following recipe: Rp.: Mucilaginis Amyli 50,0Da. Signa. For the enema purposes. How much starch and distilled water did the pharmacist use in order to make this preparation?

- a. 1,0 g of starch; 50 ml of distilled water
- b. 5,0 g of starch; 45 ml of distilled water
- c. 10,0 g of starch; 40 ml of distilled water
- d. 1,0 g of starch; 49 ml of distilled water
- e. 2,0 g of starch; 48 ml of distilled water

160. A pharmacy has to prepare a soft drug based on the gel made from inorganic substances. Which of these high-molecular compounds can be used for preparing such a base?

- a. Polyethylene oxides
- b. Collagen
- c. Cellulose ethers
- d. Starch
- e. Bentonites

161. A pharmacy received a prescription for a topical powder including a substance that is hard to disperse. Which of the listed fluids may be used for dispersing the substance?

- a. Purified water
- b. Dimexid
- c. Isopropyl alcohol
- d. Diethyl ether
- e. Water for injections

162. A pharmacist has to prepare suppositories with a glycerine gelatin base by the molding method. What is the ratio of gelatin, water and glycerine required for the base?

- a. 2:1:5
- b. 3:2:3
- c. 2:2:4
- d. 1:3:4
- e. 1:2:5

163. A pharmacy received an order for 2500 ml of isotonic sodium chloride solution. How much sodium chloride and water for injections should be taken to prepare this dosage form?

- a. 25,0 g of sodium chloride and 2500 ml of water for injections
- b. 50,0 g of sodium chloride and 2450 ml of water for injections
- c. 22,5 g of sodium chloride and 2500 ml of water for injections
- d. 30,0 g of sodium chloride and 2500 ml of water for injections
- e. 100,0 g of sodium chloride and 2400 ml of water for injections

164. Powders that quickly enter into a reaction in presence of water and emit carbon dioxide relate to the following group:

- a. Nasal powders
- b. Powders for external use
- c. Soluble powder
- d. Powders for oral use
- e. Effervescent powder

165. Calculate the quantity of dried belladonna extract (1:2) required for preparing the following drug formulation: Rp.: Extracti Belladonnae 0,015Magnesii oxydi 0,5Natrii hydrocarbonatis 0,2Misce ut fiat pulvis Da tales doses №10Signa. 1 powder thrice a day

- a. 0,15
- b. 0,6
- c. 0,015
- d. 0,3
- e. 0,4

166. Specify the type of the following liniment: Ol. Helianthi 7,4Sol. Ammonii caustici 25 mlAc. Oleinici 0,1M.f. linimentumD.S. To be rubbed in

- a. Liniment, emulsion w/o
- b. Liniment, emulsion o/w
- c. Liniment-solution
- d. Combined liniment
- e. Liniment-suspension

167. A pharmacist is preparing rectal suppositories based on cocoa butter and containing dimedrol with mass concentration less than 5%. For rational incorporation of dimedrol into the base it should be solved:

- a. In alcohol
- b. In the minimum amount of treated water
- c. In the melted cocoa butter
- d. In olive oil
- e. In vaseline oil

168. A pharmacist needs to sterilize 250 ml of glucose solution for injections. How many minutes should the solution undergo sterilization in the autoclave under the temperature of 120°C?

- a. 30
- b. 12
- c. 15
- d. 8
- e. 25

169. A pharmacist is preparing an ointment under aseptic conditions on the sterile ointment base - composition of vaseline and lanoline at a ratio 6:4. The drug substance is incorporated by suspension type. Such technology of ointment preparation is typical for the following substance:

- a. Sodium sulfate
- b. Benzylpenicillin sodium salt
- c. Thiamine chloride
- d. Sodium chloride
- e. Pilocarpine hydrochloride

170. This substance is of blue colour but unlike the colouring substances it doesn't leave any stain. The powders prepared out of it are made according to the general rules. What substance is it?

- a. Acridine
- b. Furacilin
- c. Ethacridine lactate
- d. Riboflavin
- e. Copper sulfate

171. A pharmacist brews an aqueous extract out of medicinal raw material in the tightly closed infusion vessel for 15 minutes and stirs it without opening the lid. Such technology of infusion preparation is typical for the following medicinal raw material:

- a. Mint leaves
- b. Senna leaves
- c. Cowberry leaves
- d. Manzanita leaves
- e. Bilberry leaves

172. A pharmacy got an order for manzanita decoction and hexamethylenetetramine. A pharmacist cancelled it with a stamp "Invalid prescription". What is the reason for the incompatibility?

- a. Moisture-repellant
- b. Insolubility
- c. Eutectic
- d. Oxidation
- e. Deposition

173. A pharmacist prepares internal drops with the following formulation: 5 ml of adoniside, 10 ml of valerian and lily-of-the-valley tincture each, 0,1 g of menthol, 2,0 g of potassium bromide. It will be efficient to dissolve potassium bromide in the following substance:

- a. In the valerian tincture
- b. In the lily-of-the-valley tincture
- c. In the adoniside
- d. In the mixture of tinctures
- e. Potassium bromide should be added into the selling vial last of all

174. A pharmacist technologist revealed incompatibility in the following prescription: Rp.: Mentholi 0,5Natrii hydrocarbonatis Natrii tetraboratis aa 1,5Aqua purificatae 100 ml M.D.S. 1 tablespoon twice a day. In order to prepare this drug form the pharmacist should apply the following techniques:

- a. Change dosage form
- b. Add stabilizer
- c. Apply another solvent
- d. Apply fractional dissolution
- e. Change one of the component

175. A pharmacist prepared powders including extract of belladonna in the amount of 0,015 per dose. For ten doses he had to take the following amount of dry extract:

- a. 0,15 g
- b. 0,03 g
- c. 0,015 g
- d. 0,3 g
- e. 1,5 g

176. A pharmacist has to prepare an oil emulsion with menthol. Specify the appropriate way of the active substance incorporation:

- a. Dissolution in the ready emulsion by heating
- b. Incorporation into the ready primary emulsion
- c. Dispersion with the addition of ready emulsion
- d. Dissolution in water intended for diluting the primary emulsion
- e. Dissolution in oil

177. It is required to prepare a decoction of bearberry leaves. Specify the ratio of raw materials to the extractant if not indicated in the formulation:

- a. 1:20
- b. 1:5
- c. 1:400
- d. 1:10
- e. 1:30

178. A pharmacist prepared an injectable solution of novocaine. What stabilizer had been used?

- a. Sodium bicarbonate solution
- b. Sodium sulfite solution
- c. Sodium thiosulfate solution
- d. Hydrochloric acid solution**
- e. Stabilizer of Weibel

179. A pharmacist has prepared a tincture of althaea root. What is the proportion of herbal raw material and extractant?

- a. 1:100
- b. 1:400
- c. 1:10
- d. 1:30
- e. 1:20**

180. A pharmacist revealed incompatibility in the formulation. Rp.: Sol. Collargoli 1% - 10 ml Sol. Adrenalin hydrochloridi 0,1% - 1 ml M.D.S. Nasal drops. What chemical process underlies this incompatibility?

- a. Hydrolysis
- b. Adsorption
- c. Neutralization
- d. Precipitation
- e. Oxidation**

181. Specify the type of capsules which are used for dispensing camphor powders:

- a. Cellophane
- b. Waxed
- c. Common paper
- d. Parchment**
- e. Paraffin

182. A pharmacist prepared solution of ethacrydine lactate. What is the peculiarity of this substance dissolving?

- a. Dissolving in freshly distilled water
- b. Grinding in a mortar with water
- c. Dissolving in potassium iodide solution
- d. Dissolving in hot water**
- e. Dissolving in cold water

183. A pharmacist prepared an oil emulsion containing zinc oxide. Specify the rational method of substance incorporation:

- a. Grinding with water for dilution of the primary emulsion
- b. Dissolution in oil
- c. Suspension-type incorporation into the prepared emulsion**
- d. Dissolution in water for preparation of the primary emulsion
- e. Dissolution in the finished emulsion

184. A pharmacist made a tincture of Adonis herb. A peculiarity of its preparation is that the active substances are derived in:

- a. In the acid medium
- b. In the neutral medium**
- c. In the alkaline medium
- d. In the alkalescent medium
- e. In the subacid medium

185. A pharmacist has prepared a suspension ointment. Specify the substance used for this type of ointments:

- a. Protargolum

- b. Ichthyol
- c. Potassium iodide
- d. Zinc oxide**
- e. Menthol

186. A pharmacist-technologist received an ointment formulation.Rp.:Unguentum Resorcini 1,5% - 10,0Da. Signa. To be applied on the affected skin areas.The pharmaceutist incorporated dry medical substance into the ointment by the following way:

- a. Triturated with a few water drops
- b. Triturated with a few ethanol drops
- c. Triturated with a few vaseline oil drops**
- d. Added to molten vaseline
- e. Triturated with a part of vaseline

187. A pharmaceutist prepared some powders whose composition includes camphor. What capsules are required for their packaging?

- a. Paraffin
- b. Cellophane
- c. Paper
- d. Waxed
- e. Parchment**

188. A pharmaceutist prepared suppository mass with novocaine and cocoa butter, but it turned out to be crumbling. What substance to be added to form a plastic mass:

- a. Hydrous lanolin
- b. Vaseline
- c. Wax
- d. Anhydrous lanolin**
- e. Paraffin

189. A pharmaceutist has to sterilize 400 ml of calcium gluconate solution for injections. Specify the time of autoclave sterilization of the solution at 120oC:

- a. 20 minutes
- b. 10 minutes
- c. 30 minutes
- d. 12 minutes**
- e. 15 minutes

190. Ophthalmic drops are produced on the base of concentrated riboflavin solution (1:5000). How much solution should be taken if the formulation says "0,001 of riboflavin"?

- a. 1 ml
- b. 5 ml**
- c. 3 ml
- d. 2 ml
- e. 4 ml

191. A doctor prescribed a patient 100 ml of tincture made out of 0,25 of Herba Thermopsisidis. How much dried concentrated extract of Herba Thermopsisidis should be weighed by a pharmaceutist?

- a. 0,3 g
- b. 0,5 g
- c. 0,25 g**
- d. 0,2 g
- e. 0,1 g

192. A patient acquired mint leaves at a pharmacy. What recommendations regarding infusion of this herbal raw material must be given by the pharmaceutist?

- a. The infusion is to be prepared at room temperature
- b. The infusion is to be prepared on an open fire

c. The infusion is to be prepared in a tightly closed vessel

d. The extract is to be immediately filtered after infusing

e. The extract is to be artificially cooled 15 minutes after infusing

193. Sterilization methods used for the preparation of drugs under aseptic conditions can be differentiated into physical, mechanical, and chemical ones. Specify the chemical method of sterilization:

a. UV light sterilization

b. Addition of preservatives

c. Radiation sterilization

d. Dry heat sterilization

e. Pressure steam sterilization

194. A patient has been administered a solution containing boric acid and camphor. What solvent should his doctor prescribe in order to prevent physical incompatibility?

a. Sunflower oil

b. Purified water

c. Ethyl alcohol 70%

d. Glycerol

e. Ethyl alcohol 40%

195. Pharmacies prepare triturations of toxic and superpotent substances. They can be prepared in a following ratio:

a. 1:500

b. 1:100 only

c. 1:10 only

d. 1:1000

e. 1:10 and 1:100

196. It is required to prepare furacilin solution (1:5000). What is the dissolution peculiarity of furacilin?

a. It dissolves in the filtered purified water

b. It dissolves in the boiling water purified in the presence of sodium chloride

c. It dissolves in a minimal amount of ethyl alcohol

d. It dissolves in the cold purified water

e. It dissolves in the purified water after the trituration

197. Stability of suspensions can be enhanced by substances which increase the viscosity of the dispersion medium. Specify the substance that exhibits such properties:

a. Glycerol

b. Ethanol

c. Ether

d. Dimexid

e. Purified water

198. The method of suspension preparation depends on the properties of its components. Specify the substances having hydrophobic properties:

a. Sodium bicarbonate, sodium sulfate

b. Zinc oxide, talc

c. White clay, bentonite

d. Camphor, menthol

e. Boric acid, calcium carbonate

199. A doctor prescribed his patient an emulsion of olive oil which includes anesthesin. To incorporate anesthesin into the emulsion it must be dissolved:

a. In oil before preparing the emulsion

b. In the purified water

c. In the alcohol, and then added to the primary emulsion

- d. In the primary emulsion
- e. In the finished emulsion

200. A patient has been prescribed hand-rolled rectal suppositories with 0,1 g of aminophylline. What is the amount of base required for each suppository, provided that the suppository weight is not specified in the formulation?

- a. 2,4 g
- b. 3,9 g
- c. 2,9 g
- d. 1,9 g
- e. 1,4 g

201. 100 ml of 0,9% sodium chloride solution were prepared according to the doctor's prescription. What sterilization schedule is required for this solution?

- a. 120oC - 8 minutes
- b. 120oC - 15 minutes
- c. 100oC - 15 minutes
- d. 180oC - 30 minutes
- e. 120oC - 12 minutes

202. A pharmacy got an order for a mixture containing manzanita decoction and belladonna extract. What is the reason for their incompatibility?

- a. Liberation of gaseous substances
- b. Coagulation of colloidal systems
- c. Hydrolysis
- d. Redox (oxidation-reduction) processes
- e. Sedimentation

203. A pharmacist prepares a suspension ointment. What substance is soluble in water, but should be incorporated into the dermatological ointments as a suspension?

- a. Furacilin
- b. Potassium iodide
- c. Zinc oxide
- d. Sulfacyl sodium
- e. Resorcinol

204. A pharmacist refused preparation of nasal drops to a patient because of incompatibility between collargol and dimedrol written in the prescription. What is the reason for incompatibility between these ingredients?

- a. Eutectic formation
- b. Coagulation
- c. Adsorption
- d. Immiscibility
- e. Dissection

205. A doctor gave a prescription for the tincture of digitalis with hydrochloric acid. What is the reason for their incompatibility?

- a. Change in odour
- b. Hydrolysis (with no visible changes)
- c. Gassing
- d. Precipitation
- e. Change in colour

206. A pharmacist revealed incompatibility in a prescription for powders with ascorbic acid and hexamethylene tetramine. What process takes place when these components are combined?

- a. Isolation of crystallization water
- b. Mixture dampening
- c. Immiscibility

- d. Eutectic
- e. Adsorption

207. A pharmacist revealed physical incompatibility caused by coagulation. This process takes place in a solution if the combination of the following substances is present:

- a. Dimedrol and glucose
- b. Dimedrol and collargol**
- c. Dimedrol and sodium chloride
- d. Dimedrol and novocaine
- e. Dimedrol and diazoline

208. A pharmacist made a medicinal preparation according to the following formulation: Rp.: Chloroformii Olei Helianthi Methylii salicylatis ana 10,0M.D.S. For friction. Specify the kind of disperse system:

- a. Liniment - extractional
- b. Liniment - solution**
- c. Liniment - emulsion
- d. Liniment - combined
- e. Liniment suspension

209. A pharmacist prepared a surface action ointment. What ointment base was used?

- a. Lanoline
- b. Gelatin-glycerol base
- c. Polyethylene oxide basis
- d. Vaseline (petrolatum)**
- e. Kutumovas basis

210. A pharmacy received the following prescription: 0,0002 g of scopolamine hydrobromide per 1 powder. How much of 1:100 trituration is required for the preparation of 10 powders?

- a. 4,0
- b. 0,04
- c. 0,2**
- d. 0,4
- e. 2,0

211. A pharmacy received a prescription for 3% alcohol solution of boric acid. What concentration of ethyl alcohol is required for preparing the drug form?

- a. 40%
- b. 60%
- c. 70%**
- d. 90%
- e. 96%

212. Eye drops are prepared with an ointment base which is an alloy of vaseline and lanolin. Specify the method of its sterilization:

- a. Pasteurization
- b. Tyndallization
- c. Ethylene oxide
- d. Flowing steam
- e. Dry heat**

213. Pharmacies prepare injectable solutions. Which solution is prepared without any stabilizer?

- a. Novocaine solution
- b. Sodium bicarbonate solution**
- c. Solution of caffeine sodium benzoate
- d. Sodium thiosulfate solution
- e. Glucose solution

214. A pharmacy received a prescription for preparation of dermatological ointment with

benzylpenicillin. Specify the type of ointment that necessary to prepare:

- a. Alloy ointment
- b. Combined
- c. Liquid ointment
- d. Hydrophilic ointment
- e. Suspension ointment

215. A pharmacy received a prescription for powders with doctors instruction to dispense powders in gelatin capsules. Which of the following substances is included in the composition of these powders?

- a. Magnesium oxide
- b. Diphenhydramine
- c. Glucose
- d. Ethacridine lactate
- e. Streptocide

216. During production of powders in a pharmacy physiochemical properties of certain ingredients should be taken into consideration. What pharmaceutical substance can be incorporated into the powder mass without additional grinding?

- a. Camphor
- b. Salicylic acid
- c. Streptocid
- d. Starch
- e. Menthol

217. Liquid dosage forms are prepared with concentrated solutions of pharmaceutical substances or under consideration of volume increase factor during substance dissolution when the following substance is used as a solvent:

- a. Aromatic water
- b. Ethanol (ethyl alcohol)
- c. Polyethylene glycol-400
- d. Treated water
- e. Glycerol

218. How much water should be taken in order to prepare 200 ml of aqueous extract of motherwort (water absorption coefficient = 2 ml/g)?

- a. 210 ml
- b. 240 ml
- c. 200 ml
- d. 220 ml
- e. 160 ml

219. A pharmacy received the following formulation: Rp.: Dibazoli 0,05 Papaverini hydrochloridi 0,15 Sacchari 2,5M. fiat pulv. Divide in partes aequales №10. Specify the weight of a single powder dose:

- a. 2,7
- b. 0,26
- c. 0,30
- d. 0,27
- e. 0,25

220. Dispersion degree of drug substances is of great importance for the preparation of ophthalmic ointments. What drug substance should be thoroughly triturated with sterile vaseline oil before incorporating it into the pharmacopoeia-recommended ointment base?

- a. Ethyl morphine hydrochloride
- b. Mercuric oxide yellow
- c. Pilocarpine hydrochloride
- d. Resorcin
- e. Zinc sulfate

221. A pharmacist has prepared an ointment intended for application on the open wound surface. Such kind of ointment should meet the following additional requirement:

- a. Isotonicity
- b. Isoionicity
- c. Prolonged action
- d. Sterility**
- e. Isovicosity

222. In course of preparation of suppositories by the pumping method the suppository mass became viscous and fluid after the incorporation of chloral hydrate into the cocoa butter. What substance should be added to the suppository mass in order to restore its density and plasticity?

- a. Dimexid
- b. Starch
- c. Glycerine
- d. Purified water
- e. Wax**

223. A pharmacist is preparing powders according to the following formulation: Rp.: Scopolamini hydrobromidi 0,0003 Ephedrini hydrochlorodi 0,05 Sachari 0,15 M.f. pulvis D.t.d. № 10 S. 1 powder thrice a day. Calculate the mass of 1 powder providing that the trituration (1:100) is used:

- a. 0,20**
- b. 0,23
- c. 0,203
- d. 0,17
- e. 0,15

224. A pharmacist prepares several different solutions with antibiotics under aseptic conditions. He can sterilize the solution of the following substance:

- a. Chloramphenicol**
- b. Neomycin sulphate
- c. Polymyxin sulphate
- d. Benzylpenicillin-potassium
- e. Benzylpenicillin-sodium

225. A pharmacist prepared a suspension. It must contain the following amount of fluid in order to comply with Deriagins rule:

- a. 1-0,8 millilitre of 1,0 substance
- b. 0,9-2 millilitres for 1,0 substance
- c. 0,1-1,0 millilitre for 1,0 substance
- d. 0,4-0,6 millilitre for 1,0 substance**
- e. 1,5-0,7 millilitre for 1,0 substance

226. A pharmacist has prepared an emulsion. Specify the way of incorporation of the fat-soluble substances:

- a. They are dissolved in oil**
- b. They are incorporated in undissolved form
- c. They are added to the emulsifier
- d. They are added to the finished emulsion
- e. They are dissolved in purified water

227. A pharmacy received a prescription for a mixture. What drug substances are incompatible?

- a. Codeine phosphate + extract of Thermopsis
- b. Phenobarbital + glucose
- c. Novocaine + diphenhydramine
- d. Sodium bromide + sodium chloride
- e. Papaverine hydrochloride + aminophylline**

228. A pharmacy got an order for powders containing ascorbic acid and sodium hydrocarbonate.

What process takes place between the ingredients?

- a. Absorption
- b. Oxidation
- c. Dampening**
- d. Sedimentation
- e. Stratification

229. A pharmacy got the following recipe:

Rp.:Mucilaginis Amyli 50,0

Da. Signa. For the enema purposes.

How much starch and distilled water did the pharmacist use in order to make this preparation?

- a. 10,0 g of starch; 40 ml of distilled water
- b. 1,0 g of starch; 49 ml of distilled water**
- c. 2,0 g of starch; 48 ml of distilled water
- d. 1,0 g of starch; 50 ml of distilled water
- e. 5,0 g of starch; 45 ml of distilled water

230. A pharmacy produces some injection solutions that have to be apyrogenic. Solution of the following substance can be depyrogenized by method of adsorption with activated carbon?

- a. Glucose**
- b. Papaverine hydrochloride
- c. Platiphyllini hydrotartras
- d. Scopolamine hydrobromide
- e. Atropine sulfate

231. A pharmacy has to prepare a soft drug based on the gel made from inorganic substances. Which of these high-molecular compounds can be used for preparing such a base?

- a. Cellulose ethers
- b. Polyethylene oxides
- c. Collagen
- d. Bentonites**
- e. Starch

232. A pharmacist has to prepare suppositories with a glycerine gelatin base by the molding method. What is the ratio of gelatin, water and glycerine required for the base?

- a. 1:2:5**
- b. 1:3:4
- c. 3:2:3
- d. 2:1:5
- e. 2:2:4

233. Calculate the quantity of dried belladonna extract (1:2) required for preparing the following drug formulation:

Extracti Belladonnae 0,015

Magnesii oxydi 0,5

Natrii hydrocarbonatis 0,2

Misce ut fiat pulvis Da tales doses №10

Signa. 1 powder thrice a day.

- a. 0,4
- b. 0,15
- c. 0,3**
- d. 0,6
- e. 0,015

234. Specify the type of the following liniment:Ol. Helianthi 7,4Sol. Ammonii caustici 25 mlAc. Oleinici 0,1M.f. linimentumD.S. To be rubbed in.

- a. Liniment-solution
- b. Combined liniment

c. Liniment, emulsion o/w

d. Liniment-suspension

e. Liniment, emulsion w/o

235. A pharmacist has to prepare a medication by the following formulation: Rp.: Natrii hydrocarbonatis 2,0Natrii benzoatis 1,5Liquoris Ammonii anisatis 4 mlAquaee Mentae 100 mlM.D.S. 1 tablespoon 3 times a day. Specify the component that is added in the first place:

a. Sugar syrup

b. Sodium hydrogen carbonate

c. Sodium benzoate

d. Mint water

e. Liquoris Ammonii anisatis

236. A pharmacist is preparing rectal suppositories based on cocoa butter and containing dimedrol with mass concentration less than 5%. For rational incorporation of dimedrol into the base it should be solved:

a. In the minimum amount of treated water

b. In the melted cocoa butter

c. In alcohol

d. In vaseline oil

e. In olive oil

237. A pharmacist needs to sterilize 250 ml of glucose solution for injections. How many minutes should the solution undergo sterilization in the autoclave under the temperature of 120°C?

a. 12

b. 15

c. 30

d. 25

e. 8

238. A pharmacist prepares an ointment under aseptic conditions on the sterile ointment base, namely the composition of vaseline and lanoline at a ratio 6:4. The drug substance is incorporated by suspension type. Such technique of ointment preparation is typical for the following substance:

a. Thiamine chloride

b. Sodium chloride

c. Benzylpenicillin sodium salt

d. Pilocarpine hydrochloride

e. Sodium sulfate

239. A pharmacist brews an aqueous extract out of medicinal raw material in the tightly closed infusion vessel for 15 minutes and stirs it without opening the lid. Such technology of infusion preparation is typical for the following medicinal raw material:

a. Bilberry leaves

b. Manzanita leaves

c. Cowberry leaves

d. Mint leaves

e. Senna leaves

240. A pharmacist prepares an infusion at a ratio of 1:30. What herbal raw material will be used?

a. Lily of the valley grass

b. Sage leaves

c. Shoots of Marsh Labrador tea

d. Oak bark

e. Marshmallow root

241. A pharmacy got an order for manzanita decoction and hexamethylenetetramine. A pharmacist cancelled it with a stamp "Invalid prescription". What is the reason for the incompatibility?

a. Deposition

- b. Oxidization
- c. Insolubility
- d. Moisture-repellant
- e. Eutectic

242. A pharmacist is preparing vaginal suppositories by method of pouring. Which hydrophilic base can he use for this purpose?

- a. Butyrol
- b. Polyethylene oxide**
- c. Vitepsol
- d. Cocoa butter
- e. Hard fat