

1. 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. 0,3 g
- B. 0,15 g
- C. 1,5 g
- D. 0,03 g
- E. 0,015 g

2. A pharmaceutical company focuses on selling a diverse range of products covering different customer groups and regions. What kind of organizational structure is typical for such company?

- A. Divisional
- B. Bureaucratic
- C. Functional
- D. Centralized
- E. Decentralized

3. A pharmaceutical company produces cordiamin solution. During the quality control its quantitative content was determined by means of refractometry. For this purpose an analytical chemist measured:

- A. Index of refraction
- B. Viscosity
- C. Density
- D. Intensity of absorption
- E. Angle of rotation

4. Which of the following drugs is used for thrombolytic therapy in case of myocardial infarction?

- A. Streptokinase
- B. Heparin
- C. Phenylinim
- D. Ticlopidine
- E. Acetylsalicylic acid

5. On the 4th day of treatment with indomethacin a 55-year-old patient developed gastric bleeding as a result of ulceration of the gastric mucosa. Ulcerogenic effect of this drug is due to a decrease in activity of the following enzyme:

- A. Cyclooxygenase-1 (COX-1)
- B. Cyclooxygenase-2 (COX-2)
- C. Lipoxygenase (LOX)
- D. Thromboxane synthetase
- E. Prostacyclin synthetase

6. A patient complaining of dry mouth, photophobia and blurred vision has been

delivered to the admission ward. Objectively: the skin is hyperaemic, dry; mydriatic pupils and tachycardia are present. He has been diagnosed with belladonna alkaloids intoxication. Which of the drugs should be given as an antidote?

- A. Neostigmine
- B. Aceclidine
- C. Pylocarpine
- D. Arminum
- E. Dipiroximum

7. To stop the delusions and hallucinations in a schizophrenic patient a doctor administered aminazine. What is the mechanism of antihypoxic action of this drug?

- A. Inhibition of dopaminergic processes in the CNS
- B. Stimulation of adrenergic and dopaminergic processes in the CNS
- C. Stimulation of cholinergic processes in the CNS
- D. Inhibition of cholinergic processes in the CNS
- E. Inhibition of adrenergic processes in the CNS

8. During a surgical operation the muscle relaxant tubocurarine chloride was used. What antagonist drug should be injected in order to allow the patient to breathe independently?

- A. Neostigmine
- B. Dithylinum
- C. Cytitonum
- D. Aethimizolum
- E. Benzohexonium

9. A patient came to a drugstore and ordered cowberry leaves. Which of the available herbal raw materials can be offered as a substitute?

- A. *Folium Uvae ursi*
- B. *Rizoma Calami*
- C. *Rizoma et radix Sanquisorbae officinalis*
- D. *Herba Achilleae millefolii*
- E. *Radix Taraxaci officinalis*

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

- A. 1:20
- B. 1:10
- C. 1:30
- D. 1:100
- E. 1:400

11. An analytical chemist working at a pharmacy identifies oxacillin sodium salt. As a reagent he uses hydroxylamine hydrochloride solution in presence of sodium hydroxide solution and copper nitrate solution. What structural fragment of a drug molecule can be detected by means of these reagents?

- A. Beta-lactam cycle
- B. Thiazolidine cycle
- C. Isoxazole cycle
- D. Furan cycle
- E. Thiadiazole cycle

12. Diethyl ether relates to simple ethers. Prior to its identification by using the boiling temperature an analytical chemist must ensure that there are no:

- A. Peroxides
- B. Reducing substances
- C. Alcohols
- D. Non-volatile residue
- E. Carboxylic acids

13. In order to detect peroxides in the anesthetic ether an analytical chemist should use the following reagent:

- A. Potassium iodide
- B. Potassium chloride
- C. Potassium permanganate
- D. Sodium thiosulfate
- E. Sodium hydroxide

14. A syrup contains 82 parts of sugar syrup; 1 part of *KJ* (*KBr*); 12 parts of liquid thyme extract and 5 parts of 96% ethanol. What is this medicine called?

- A. Pertussinum
- B. Cholosasum
- C. Ambroxol
- D. Broncholytin
- E. Licorice syrup

15. A pharmaceutical enterprise that has achieved high sales rates and customers' recognition will reach the highest profit at the following stage of the product life cycle:

- A. Maturity
- B. Market penetration
- C. Growth
- D. Decrease
- E. Development

16. A pharmaceutical plant producing ointments can use the following equipment at the packing stage:

- A. Screw and piston dosing machines
- B. Rezipin automatic machine
- C. Rotary machines
- D. Eccentric machines
- E. Disc machines

17. Aerosol workshop of a pharmaceutical plant uses propellents of different groups. What propellents relate to the group of compressed gases?

- A. Nitrogen, nitrous oxide, carbon dioxide
- B. Freons
- C. Propane, butane, isobutane
- D. Vinyl and methyl chloride
- E. Methylene chloride, ethylene chloride

18. An analytical laboratory received calcium gluconate for analysis. What method is used for its quantification?

- A. Chelatometry
- B. Bromatometry
- C. Iodometry
- D. Mercurimetric determination
- E. Nitritometric determination

19. Which preparation is the specific antidote in case of intoxication with iron preparations?

- A. Deferoxamium
- B. Protamine sulfate
- C. Bemegridum
- D. Atropinum
- E. Penicillamine

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

- A. Dissolving in hot water
- B. Dissolving in freshly distilled water
- C. Dissolving in cold water
- D. Grinding in a mortar with water
- E. Dissolving in potassium iodide solution

21. A pharmacy produces compounded drugs. What kinds of internal control of drugs production are required?

- A. Written, organoleptic, sell control
- B. Written, interrogatory, sell control
- C. Written, qualitative and quantitative analysis
- D. Written, physics and chemical
- E. Written and sell control

22. A pharmacy analyst can verify presence of iron cation (II) in a drug formulation by means of the following solution:

- A. Ammonium sulfide
- B. Sodium chloride
- C. Magnesium sulfate
- D. Potassium bromide
- E. Sodium phosphate

23. A pregnant woman fell ill with severe pneumonia. Which of these antimicrobials should be administered to this patient?

- A. Cefotaxime
- B. Gentamicin sulfate
- C. Tetracycline hydrochloride
- D. Ofloxacin
- E. Biseptol

24. A pharmacy manager is working out a schedule for a pharmacist who is responsible for prescription reception and drug serving out. What is the weekly working time for one employee?

- A. 36 hours
- B. 38 hours
- C. 40 hours
- D. 30 hours
- E. Irregular working week

25. A pharmacist was on a business trip. What is the deadline for submitting a travel expense report?

- A. Three working days after returning from a trip
- B. Four working days after returning from a trip
- C. Ten working days after returning from a trip
- D. A week after returning from a trip
- E. There is no deadline

26. An advance holder (accountant) was given some money from the cash fund of an enterprise for purchase of office accessories. After the cash advance the advance holder must submit the complete application of funds statement no later than:

- A. Third banking day
- B. Five working days
- C. Ten working days
- D. One week
- E. Such term isn't established

27. A pharmacy selling officinal drugs is a successful participant of the pharmaceutical market. Specify the business transaction which is qualified as pharmacy revenue:

- A. Proceeds of a structural subdivision of a pharmacy
- B. Writing-off of the cost of goods sold
- C. Receipt of advance payment made by a customer
- D. Tax charge
- E. Salary accounting

28. A pharmacy provides its customers with officinal medicines. Specify the business transaction which is qualified as pharmacy expenses:

- A. Write-off of cost of goods sold
- B. Pharmacy proceeds
- C. Proceeds of a structural subdivision
- D. Personal income tax
- E. Posting of goods

29. Medicinal plant *Rhamnus cathartica* is used as a laxative. What part of this plant is used as herbal raw material?

- A. Fruits
- B. Leaves
- C. Rind
- D. Roots
- E. Shoots

30. When the glucose is heated with the copper-tartrate reagent (Fehling's reagent) the brick-red precipitate settles down. It indicates presence of the following group:

- A. Aldehyde
- B. Ketonic
- C. Carboxyl
- D. Etherific
- E. Amide

31. For the purpose of sales stimulation a pharmaceutical wholesale company grants its customers a discount according to the social contract and on condition of their loyalty. Specify the type of discount:

- A. Bonus
- B. Dealer
- C. Seasonal
- D. Discounts for quantity of purchased goods
- E. -

32. Before accepting the goods by a pharmacy, they should be checked for quantity and quality. If there is no discrepancy, the pharmacy issues a warrant for receipt of goods. This warrant is valid for:

- A. 10 days
- B. 3 months
- C. 1 year
- D. 15 days
- E. 20 days

33. A patient got intoxicated with an unknown substance. Test of biological material revealed pH=2,0-3,0. The chemico-toxicological analysis should be carried out for the following group of substances:

- A. Mineral acids or large amounts of organic acids
- B. Alkalis
- C. Ammonia
- D. Weak organic acids and heavy metal salts
- E. Alkali metal salts

34. One of the quality indicators for finished ampoules is lack of residual stress in the glass. Which operation at the stage "Preparation of ampoules to be filled" eliminates this imperfection?

- A. Ampoule annealing
- B. Capillary opening
- C. Ampoule washing
- D. Ampoule drying
- E. Ampoule sterilization

35. Companies producing injectable dosage forms apply different methods of ampoule sealing. Sealing against a jet of inert gases (nitrogen, argon, carbon dioxide) is suitable for the following injection solutions:

- A. Easily oxidable
- B. Viscous
- C. Thermostable
- D. Hydrolytically unstable
- E. Photosensitive

36. Quality control of tablets produced at a pharmaceutical enterprise involves quantitative determination of such subsidiary substances as talc and aerosil. What method is applied for such determination?

- A. Gravimetric
- B. Titrimetric
- C. Photocolorimetric
- D. Spectrophotometric
- E. Chromatographic

37. A 6-year-old child with pneumonia has been administered an antibiotic. After treatment the child lost his hearing. What group of antibiotics might have caused this complication?

- A. Aminoglycosides
- B. Cephalosporins
- C. Macrolides
- D. Natural penicillins
- E. Semi-synthetic penicillins

38. A 52-year-old patient had myocardial infarction and was discharged from the hospital after the stationary treatment. What daily dose of acetylsalicylic acid should be administered in order to prevent thrombosis?

- A. 100 mg
- B. 500 mg
- C. 1000 mg
- D. 200 mg
- E. 50 mg

39. A woman died from pesticide poisoning as a result of processing of agricultural crops. Measurement of organophosphorous compounds in the extracts of biological material should be started with the following test:

- A. Biochemical assay
- B. Test for the phosphate ion
- C. Test for methoxy or ethoxy groups
- D. Test for the presence of chlorine atom
- E. Test for the presence of a sulfur atom

40. In the medical practice this compound is used as a disinfectant. In case of intoxication with this compound the patient's urine turns olive or olive-black. Specify the compound:

- A. Phenol
- B. Isoamyl alcohol
- C. Iodoform
- D. Ethyl ether
- E. Ethyl benzoate

41. In order to identify a drug an analytical chemist of the State Inspectorate for Quality Control of Medicines carries out the reaction with ninhydrin solution. Specify the drug to be identified:

- A. Methionine
- B. Cortisone acetate
- C. Paracetamol
- D. Streptocide
- E. Ascorbic acid

42. 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. Hydrus lanolin
- C. Paraffin
- D. Vaseline
- E. Wax

43. 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. 12 minutes
- B. 20 minutes
- C. 15 minutes
- D. 10 minutes
- E. 30 minutes

44. Anesthesin relates to substances with local anesthetic activity and is a derivative of the following acid:

- A. Para-aminobenzoic
- B. Para-aminosalicylic
- C. Para-aminobenzolsulfonic
- D. Para-chlorbenzoic
- E. Para-aminophthalic

45. According to the State Pharmacopoeia of Ukraine, in order to test a substance for the highest level of magnesium impurities an analytical chemist must use the following solution:

- A. Hydroxyquinoline
- B. Resorcin
- C. Pyridine
- D. Formaldehyde
- E. Benzaldehyde

46. Select a reagent that should be applied by an analytical chemist in order to detect alkaloids in the herbal raw material:

- A. Dragendorff reagent
- B. Bromine water
- C. Alkaline solution
- D. Stahl's reagent
- E. Trim-Hill reagent

47. Preparations of sorrel roots can have both a laxative and astringent effect. This is due to the presence of the following biologically active substances:

- A. Anthracene derivatives and tannins
- B. Flavonoids and essential oils
- C. Essential and fatty oils
- D. Coumarins and phenol glycosides
- E. Iridoids and vitamins

48. Emodin, an anthracene derivative, has purgative effect. Large quantities of anthracene-derived groups of emodin are contained in the fruits of the following

plant:

- A. Buckthorn
- B. Elder (*Sambucus*)
- C. Blackcurrant
- D. Blueberry (*Vaccinium myrtillus*)
- E. Alder buckthorn (*Frangula alnus*)

49. A pharmacy manager is writing the monthly "Inventory report". What business transactions should be represented in the expenditure item of the report?

- A. Drug sales
- B. Herbal raw material purchases
- C. Payroll payment
- D. Amortization charged to operation
- E. Extra-evaluation of laboratory-packaging works

50. A pharmacy has a license for selling narcotic drugs. The warrant for the receipt of these drugs from the pharmacy warehouse is valid for:

- A. No longer than 10 calendar days from the date of issue
- B. No longer than 3 months from the date of issue
- C. No longer than 1 calendar days from the date of issue
- D. No longer than 1 year from the date of issue
- E. No longer than 5 calendar days from the date of issue

51. Which of the pharmacy departments is responsible for checking the quantity and quality of received goods, their storage and dispensing to other departments?

- A. Inventory department
- B. Compounding and production department
- C. Department of finished dosage forms
- D. Department of over-the-counter drugs
- E. Department of curative cosmetics

52. The possible admixture in the crop of raw coltsfoot leaves (*Tussilago farfara*) is the leaf of:

- A. Cotton burdock (*Arctium tomentosum*)
- B. Common plantain
- C. Nettle
- D. Marshmallow (*Althaea officinalis*)
- E. *Primula officinalis*

53. In order to determine the purity a drop of lavender essential oil was applied on a strip of filter paper and warmed up in the stream of warm air. Some time later the stain increased in diameter. What impuri-

ty substance was found in the lavender oil?

- A. Fatty or mineral oil
- B. Phenol
- C. Ethanol
- D. Acetone
- E. Diethyl ether

54. A pharmacy received a batch of raw material - chamomile flowers. How should this material be stored?

- A. Separately from all other kinds of raw material
- B. According to the list B requirements
- C. According to the list A requirements
- D. As a narcotic raw material
- E. In a light room

55. 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 infusion is to be prepared in a tightly closed vessel
- B. The infusion is to be prepared on an open fire
- C. The infusion is to be prepared at room temperature
- D. The extract is to be immediately filtered after infusing
- E. The extract is to be artificially cooled 15 minutes after infusing

56. 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 70%
- B. Purified water
- C. Sunflower oil
- D. Glycerol
- E. Ethyl alcohol 40%

57. A patient has chronic pancreatitis with apparent presentations of pancreatic exocrine hypofunction. Which of the following drugs would be the most appropriate in this case?

- A. Pancreatinum
- B. Drotaverine
- C. De-Nol
- D. Omeprazole
- E. Acidin pepsinum

58. A patient got an injection of 0,25% novocaine solution for the purpose of

anaesthetization. Suddenly the patient has presented with red spots, intense sweating, tachycardia, bronchospasm, edema of nasal mucous membrane. What is the cause of this complication?

- A. Immediate allergy
- B. Delayed allergy
- C. Local irritation
- D. Tachyphylaxis
- E. Abstinence syndrome

59. A 15-year-old patient has been first diagnosed with type I diabetes mellitus. Which antihyperglycemic drug should be administered in this case?

- A. Insulin
- B. Metformin
- C. Diabetone
- D. Glurenorm
- E. Glibenclamide

60. A patient with gastric ulcer has been administered omeprazole. What is its mechanism of action?

- A. Inhibition of H^+K^+ -ATPase
- B. Blockade of histamine H_2 receptors
- C. Blockade of M -cholinergic receptors
- D. HCl neutralization
- E. Stimulation of mucus production

61. A manufacturing company initiates changes to the package insert of a drug aimed at limitation of its use. What type of marketing is used by the company in this case?

- A. Counteractive
- B. Conversion
- C. Remarketing
- D. Synchromarketing
- E. Stimulating

62. When developing a new drug a manufacturer may apply different strategies of brand use. If a company uses one brand name for all of its products, such strategy is called:

- A. Group brands
- B. Individual brands
- C. Brands for individual drugs
- D. The combination of brand name with an individual drug brand
- E. Multi-brand approach

63. 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 finished emulsion
- C. In the purified water
- D. In the primary emulsion
- E. In the alcohol, and then added to the primary emulsion

64. The patient has been prescribed Lini-mentum Rosentali. It is composed of:

- A. Paraffin, alcohol, chloroform, iodine
- B. Castor oil, calcium chloride, alcohol
- C. Chloroform, methyl salicylate, turpentine
- D. Iodine, potassium chloride, glycerin
- E. Sunflower oil, ammonia, oleic acid

65. Injection solutions of salts derived from weak acids and strong bases require stabilization. What stabilizers are used for these solutions?

- A. 0,1 M sodium hydroxide solution
- B. 0,1 M acid chloride solution
- C. Trilon B
- D. Ascorbic acid
- E. Butylhydroxytoluene

66. A pharmaceutical plant produces suppositories. What is the best method for their manufacturing in industrial quantities?

- A. Outpouring
- B. Pumping-out
- C. Pressing
- D. Stamping
- E. Lyophilization

67. O-methylation is an important way of biotransformation of organic substances in the body. Compounds subject to O-methylation should contain:

- A. Phenol groups
- B. Amino groups
- C. Thiol groups
- D. Nitro groups
- E. Carboxyl groups

68. 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. Zinc oxide
- C. Sulfacyl sodium
- D. Furacilin
- E. Potassium iodide

69. It is necessary to analyze herbal raw material in form of black glossy drupes

6-8 mm in diameter, with a large, firm, globular, light brown kernel containing one seed. The drupes have sweet and slightly astringent taste. This herbal raw material should be identified as fruits of:

- A. Bird cherry
- B. Blueberry
- C. Black chokeberry
- D. Buckthorn
- E. Hawthorn

70. Method of gas-liquid chromatography is often applied for identification and quantitative determination of toxicologically meaningful substances. Substances can be placed into the chromatograph dispenser in the following aggregate states:

- A. Liquid and gaseous
- B. Liquid and solid
- C. Gaseous and solid
- D. Liquid
- E. Gaseous

71. Which of the following non-steroid anti-inflammatory agents has the least harmful effect on the mucosa of the gastrointestinal tract?

- A. Nimesulide
- B. Diclofenac
- C. Indomethacin
- D. Piroxicam
- E. Acetylsalicylic acid

72. Which drug is used for thrombolysis in case of acute myocardial infarction?

- A. Alteplase
- B. Acetylsalicylic acid
- C. Heparin
- D. Pentoxifylline
- E. Fraxiparine

73. When doing calculations to determine the limit of the cash balance, an accountant must specify the actual amount of cash receipts. What time period should be taken into account?

- A. Three months prior to calculation
- B. Six months prior to calculation
- C. 1 year prior to calculation
- D. 10 days prior to calculation
- E. 7 days prior to calculation

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

- A. Hydrolysis (with no visible changes)
- B. Precipitation
- C. Gassing
- D. Change in colour
- E. Change in odour

75. At the initial stage of establishing a pharmaceutical enterprise the internal disciplinary regulations should be adopted. One of the primary matters is the duration of the lunch break for the employees. According to the Labour Code of Ukraine, the break duration must be as follows:

- A. Up to 2 hours
- B. Up to 1 hour
- C. Not less than 3 hours
- D. 2,5 hours
- E. -

76. A woman asked a pharmacist to dispense an antipyretic for an 8-month-old child. Which drug should be recommended?

- A. Paracetamol
- B. Acetylsalicylic acid
- C. Indomethacin
- D. Diclofenac sodium
- E. Piroxicam

77. A 70-year-old patient consulted a doctor about elevated arterial pressure. He has a history of benign hyperplasia of prostate. What drug should be administered in this case?

- A. Doxazosin
- B. Enalapril
- C. Propranolol
- D. Diltiazem
- E. Losartan

78. Having ascertained that the quality of raw material meets the requirements of the analytical normative documentation the quality control department should issue a document. Specify this document:

- A. Certificate of analysis
- B. Pharmacopoeia entry
- C. Order
- D. Request
- E. Standard

79. 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. Eutectic
- C. Immiscibility
- D. Adsorption
- E. Isolation of crystallization water

80. Efficiency of aerosol therapy is to a considerable extent determined by the size of disperse particles. What factor determines the size of aerosol particles during dispersion of an aerosol?

- A. Exit port diameter, propellant vapour pressure
- B. Reduction range, container quantity
- C. System homogeneity, dispersion velocity
- D. Percentage of phase, filling temperature
- E. Fractional composition, containers filling method

81. Prior hydrolysis is necessary in case of quantitative determination of the following drug by the nitritometric titration:

- A. Paracetamol
- B. Anesthesin
- C. Procaine hydrochloride
- D. Sodium p-aminosalicylate
- E. Dicaine

82. A pharmacy plans to purchase and retail goods of different stock record units. Which group of goods does VAT reduction apply to?

- A. Medicaments
- B. Baby food
- C. Optics
- D. Curative cosmetics
- E. Perfumes

83. An analytical chemist determines the admixture of sulphates in the boric acid. What is the main reagent to be added?

- A. Barium chloride
- B. Sodium sulphide
- C. Potassium ferrocyanide
- D. Silver nitrate
- E. Ammonium oxalate

84. Recommend a patient with acute bronchitis a mucolytic drug that facilitates expectoration:

- A. Acetylcysteine
- B. Glaucine
- C. Loratadine
- D. Diclofenac sodium
- E. Drotaverine hydrochloride

85. A patient with atopic dermatitis presented at the hospital. Which drug with anti-inflammatory and antiallergic effect

should be administered to this patient?

- A. Prednisolone
- B. Aethamidum
- C. Oxytocin
- D. Insulin
- E. Retabolil

86. A patient with atherosclerosis has been administered an anti-atherosclerotic agent. Specify this drug:

- A. Fenofibrate
- B. Ascorbic acid
- C. Paracetamol
- D. Dexamethasone
- E. Phenylbutazone

87. A patient after bee's stings has angioedema (Quincke's edema). Which drug should be immediately injected to eliminate this condition?

- A. Epinephrine hydrochloride
- B. Sodium chloride
- C. Platyphyllini hydrotartras
- D. Atropine sulfate
- E. Anaprilinum

88. A pharmacy received a batch of medicines from a pharmacy depot. Specify the drug subject to the controlled substance inventory in pharmacies:

- A. Dicaine
- B. Paracetamol
- C. Analgin
- D. Novocaine
- E. Acetylsalicylic acid

89. A pharmaceutical company conducted an age-specific segment analysis of the regional antihistamine market. It revealed the lack of antihistamines for children. The company will consider this segment as:

- A. Market niche
- B. Unattractive segment
- C. Market share
- D. Segment requiring further research
- E. Market door

90. The manufacturing pharmaceutical company "Elema" set up its own corporate pharmacy. In this case, it uses the following distribution channel:

- A. Zero level
- B. First level
- C. Second level
- D. Third level
- E. Fourth level

91. A pharmacy received some medicines from the warehouse. What medicine is subject to the stocktaking in the pharmaceutical institutions?

- A. Codeine
- B. Aminalolum
- C. Corvalolum
- D. Analginum
- E. Butadionum

92. A pharmacy sells drugs by retail. Omnopon relates to the following group of controlled drugs:

- A. Narcotic
- B. Psychotropic
- C. Toxic
- D. Potent
- E. General sale list

93. A patient with cholelithiasis should be administered the following drug for the dissolution of cholesterol gallstones:

- A. Ursodeoxycholic acid
- B. Gamma-aminobutyric acid
- C. Acetylsalicylic acid
- D. Citric acid
- E. Mefenamic acid

94. A patient with acute heart failure and intolerance of cardiac glycosides has been given an injection of dobutamine. What is the mechanism of its action?

- A. Stimulation of β_1 -adrenoceptors
- B. Stimulation of α_1 -adrenoceptors
- C. Blockade of K^+ -, Na^+ -ATPase
- D. Inhibition of phosphodiesterase
- E. Stimulation of M-cholinergic receptors

95. One of the methods of quantitative analysis of active substances in the raw material is the biological standardization. It can be applied with the following group of biologically active substances:

- A. Cardiac glycosides
- B. Alkaloids
- C. Fatty oils
- D. Tannins
- E. Mucilages

96. In the process of pressing the tablets adhere to the pressing tool. The technological error is the lack of:

- A. Lubricants
- B. Adhesive substances
- C. Disintegrants
- D. Diluents
- E. Dyes

97. An elderly patient has constipation caused by hypotonia of colon. What drug should be administered to this patient?

- A. Bisacodyl
- B. Sodium sulfate
- C. Castor oil
- D. Atropine sulfate
- E. Novocaine amide

98. A forensic medicine laboratory received some biological material. It should be analyzed for the presence of trichlorfon and dichlorvos. For their isolation a toxicologist infuses them with:

- A. Chloroform
- B. Water alkalized with ammonia solution
- C. Propanol acidified with oxalic acid
- D. Ethanol acidified with oxalic acid
- E. Water acidified with sulfuric acid

99. A chemical department produces alcohol solution of boric acid. What filters are used for filtration of this solution?

- A. Pressure filters
- B. Paper filter
- C. Nutsch filter
- D. Bag filter
- E. Membrane filter

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

- A. Suspension ointment
- B. Liquid ointment
- C. Hydrophilic ointment
- D. Alloy ointment
- E. Combined

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

- A. Ethacridine lactate
- B. Magnesium oxide
- C. Streptocide
- D. Diphenhydramine
- E. Glucose

102. In course of pharmacotherapy of bronchitis a patient was found to have dyspeptic disorders, photodermatitis, liver dysfunction. Which of the prescribed drugs might have caused these manifestations?

- A. Doxycyclin
- B. Paracetamol
- C. Ascorbic acid
- D. Acetylcysteinum
- E. Codeine phosphate

103. From the pharmaceutical stock select an anticholinesterase drug to be administered to the patients with atony of the intestine and urinary bladder in the postoperative period:

- A. Proserin
- B. Phosphacolum
- C. Benzo hexonium
- D. Atropine sulfate
- E. Dithylinum

104. Most alkaloids are isolated from the biological material by means of polar solvents. Which of the listed alkaloids is isolated by the way of distillation with water vapour?

- A. Coniine
- B. Strychnine
- C. Cocaine
- D. Atropine
- E. Quinine

105. Comparative analysis of the performance of two pharmacies showed that the trade stock in terms of days was 20 and 30 days respectively. Which of these indicators is **NOT USED** for calculating the trade stock?

- A. Wage fund
- B. The rate of trade mark-up
- C. Sales volume
- D. Turnover
- E. The left-over goods in terms of settlement prices

106. A pharmacy received a batch of drugs from a wholesale firm. What document signed by an authorized person is the basis for further sale of drugs?

- A. Register of medicinal products accepted for sale
- B. Quality certificates
- C. Information on state registration
- D. National register of medicinal products
- E. Opinion letter of the territorial inspectorate

107. A patient who has been suffering from gastric diseases for a long time is found to have hyperchromic anemia. Which of the following drugs is applied for this pathology treatment?

- A. Cyanocobalamine
- B. Ascorbic acid
- C. Unithiol
- D. Ferrum Lek
- E. Oxyferriscorbone

108. A phytopreparation "Flacarbinum" has spasmolytic, anti-inflammatory and antiulcer effect. This preparation is produced out of the following plant:

- A. Licorice (*Glycyrrhiza*)
- B. Jacob's ladder blue (*Polemonium caeruleum*)
- C. Buckeye (*Aesculus*)
- D. Mountain angelica (*Aralia mandshurica*)
- E. Pot marigold (*Calendula officinalis*)

109. Specify the reaction to the ester-type drugs that is tolerated by the State Pharmacopoeia of Ukraine:

- A. Formation of iron hydroxamates
- B. Formation of azo dye
- C. Formation of indophenol
- D. Formation of 3-bromphenol
- E. -

110. Streptocide, sulfacyl sodium, norsulfazole or sulfadimezinum can be identified by means of the reaction to form:

- A. Azo dye
- B. Murexide
- C. Iodoform
- D. Fluorescein
- E. -

111. Which of the following drugs can be quantified by an analytical chemist by ceriometry method?

- A. Vicasolum
- B. Acetylsalicylic acid
- C. Sodium benzoate
- D. Phenyl salicylate
- E. Phenobarbital

112. Three founders set up a business entity for the wholesale distribution of medicines and healthcare products. Specify the form of such company:

- A. Corporate
- B. Unitary
- C. Public
- D. Utility
- E. Individual

113. Pharmaceutical market is in such a situation when there is only one company

selling a certain product. Specify the competitive structure of the market:

- A. Pure monopoly market
- B. Pure competition market
- C. Monopolistic competitive market
- D. Oligopolistic market
- E. Pure monopoly market and oligopolistic market

114. The founders are going to open a retail pharmacy. What way of business running is stipulated in this case?

- A. Licence-based
- B. Normative
- C. Free
- D. Limited
- E. Without preliminary licencing or registration

115. 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. 5,0
- B. 7,5
- C. 10,0
- D. 15,0
- E. 22,5

116. 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. 0,27
- B. 2,7
- C. 0,25
- D. 0,26
- E. 0,30

117. An analytical chemist determines the quantity of a drug by the method of indirect bromatometry. Which of the following titrated solutions is to be used?

- A. Sodium thiosulfate
- B. Calcium bromate
- C. Sodium edetate
- D. Sodium nitrite
- E. Silver nitrate

118. In order to identify a drug an analytical chemist of the State Inspectorate for Quality Control performs a lignin test. Specify this drug:

- A. Streptocid
- B. Ascorbic acid
- C. Cortisone acetate
- D. Methionine
- E. Analgin

119. The main active components of hawthorn berries are flavonoids. What is their pharmacological effect?

- A. Hypotensive and sedative
- B. Laxative and sedative
- C. Tonic and antispasmodic
- D. Diuretic and styptic
- E. Antispasmodic and anti-inflammatory

120. An analytical chemist working at an analytical laboratory identifies a drug by the sulfite ions according to the requirements of the State Pharmacopoeia of Ukraine. What reagent gets decolorized during this assay?

- A. Iodine solution
- B. Iron (III) chloride solution
- C. Ammonia solution
- D. Potassium iodide solution
- E. Potassium nitrate solution

121. An analytical laboratory received "*Aether anaestheticus*" for analysis. What reagent should be used for detecting acetone and aldehyde impurities according to the State Pharmacopoeia of Ukraine?

- A. Alkaline solution of potassium tetraiodomercurate
- B. Ammonium solution of argentic nitrate
- C. Aqueous solution of potassium iodide
- D. Sodium hydrosulfite solution
- E. Hydroxylamine solution

122. Compulsory deductions from employee's salary are made by the accounting department independently. Specify a deduction which can be made only on the grounds of written permit of an employee:

- A. Charitable contributions
- B. Alimony
- C. Contributions to the Social insurance fund for unemployment
- D. Contributions to the Social insurance fund for temporary disability
- E. Superannuation contributions

123. Natural persons registered as small business entities with simplified taxation scheme (2 group) have the limit for the annual amount of sales proceeds. Specify

the proceeds limit:

- A. 1 million UAH
- B. 750 thousand UAH
- C. 100 thousand UAH
- D. 3 million UAH
- E. 5 million UAH

124. Fatty oil containing unsaturated fatty acids is used for the prevention of atherosclerosis. Specify the herbal raw material used for oil production:

- A. Seeds of flax
- B. Seeds of fennelflower
- C. Fruits of dill
- D. Fruits of black chokeberry
- E. Hawthorn berries

125. The ampoule workshop produces solutions for injections. The aminophylline solution for injections relates to the following group of solutions:

- A. Solutions are not subject to heat sterilization
- B. Solutions of easily oxidizable substances
- C. Solutions of salts composed of weak bases and strong acids
- D. Solutions of salts composed of strong bases and weak acids
- E. Solutions of substances requiring special purification

126. Phytochemical workshop of a pharmaceutical plant produces biogenic stimulators from different raw materials. Specify the biogenic stimulators of animal origin:

- A. Vitreous body, placental suspension for injections, plasmolum, solcoseryl
- B. Liquid aloe extract, aloe liniment, aloe juice, biossedum
- C. Peloidinum, humisolum, torfotum, Fibs pro injectionibus
- D. Liquid aloe extract, aloe liniment, plasmolum
- E. Peloidinum, humisolum, torfotum, plasmolum, solcoseryl

127. The planning of marketing strategy involves two successive stages. What are the stages of the strategic planning process?

- A. Defining the mission and goals of a pharmaceutical company
- B. Describing the current marketing situation
- C. Making the list of tasks and problems
- D. Developing a program of activities
- E. Budgeting

128. Benzathine benzylpenicillin is the drug of choice for treating the following disease:

- A. Syphilis
- B. Intestinal infection
- C. Pneumonia
- D. Angina
- E. Furunculosis

129. In order to identify ouabain (strophanthine G), a drug from the group of cardiac glycosides, an analytical chemist must prove the presence of a steroid cycle. What acid should be used as a reagent?

- A. Sulfuric
- B. Oxalic
- C. Citric
- D. Formic
- E. Chromotropic

130. An analytical laboratory has to analyze ferrous sulfate heptahydrate according to the State Pharmacopoeia of Ukraine. A test portion of the substance should be titrated with the following solution:

- A. Ammonium cerium sulfate
- B. Silver nitrate
- C. Ammonium thiocyanate
- D. Sodium edetate
- E. Potassium bromate

131. Urine of an intoxicated person was found to contain ecgonine. This indicates poisoning with the following substance:

- A. Cocaine
- B. Phenacetin
- C. Caffeine
- D. Phenol
- E. Heroin

132. A patient with schizophrenia has been administered a neuroleptic. Which of the listed drugs falls into this group?

- A. Aminazine
- B. Celecoxib
- C. Propranolol
- D. Morphine
- E. Pyracetam

133. A laboratory received some herbal raw material for analysis. It is a composition of ovoid-pointed leaves up to 25 cm long and 20 cm wide; the leaf base is cuneate, the leaf edge is emarginate, The cutting is long and cylindric. The leaf venation is pinnatisect; the midrib and the

first-order veins project significantly on the inferior surface of the leaf. The superior leaf surface is dark green, the inferior surface is light green. The plant has a weak narcotic smell. The taste cannot be determined. The plant is poisonous! The described herbal raw material relates to the following plant:

- A. *Datura stramonium*
- B. *Passiflora incarnata*
- C. *Chelidonium majus*
- D. *Vinca minor*
- E. -

134. 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 dissolved in purified water
- C. They are incorporated in undissolved form
- D. They are added to the finished emulsion
- E. They are added to the emulsifier

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

- A. Papaverine hydrochloride + aminophylline
- B. Novocaine + diphenhydramine
- C. Sodium bromide + sodium chloride
- D. Codeine phosphate + extract of Thermopsis
- E. Phenobarbital + glucose

136. The risk can arise from some forms of activity connected with production of goods and services, their selling, commodity-money and financial operations, commerce, implementation of socio-economic and scientific-and-technical projects. This is the definition for the following concept:

- A. Business risk
- B. Loss of property
- C. Labour loss
- D. Loss of time
- E. Financial loss

137. Inventory of human resources at pharmaceutical companies is based on keeping of work record books, employee's files, personal data sheets T-2. What parameter **CANNOT** be estimated by the analysis of the above-mentioned data?

- A. Labour market state
- B. Average payroll strength
- C. Average staffing number
- D. Staff categories
- E. Data on the staff turnover

138. The equity capital of a pharmacy is 7500 UAH, the liabilities make 2500 UAH. According to the formula of balance calculation given in the Statement of Standard Accounting Practice 2 the amount of pharmacy assets will be as follows:

- A. 10 000 UAH
- B. 4 000 UAH
- C. 7 500 UAH
- D. 2 500 UAH
- E. 12 000 UAH

139. Forensic toxicological analysis of a mineralizate revealed copper. For preliminary determination of copper ions the following substance is used:

- A. Plumbum diethyldithiocarbamate
- B. Sodium diethyldithiocarbamate
- C. Dithizone
- D. Diphenylcarbazine
- E. Diphenylamine

140. A patient got intoxicated with nitrites. Nitrites can be detected by means of the reaction of azo-dye formation with the following acid:

- A. Sulfanilic
- B. Sulfuric
- C. Phosphoric
- D. Hydrochloric
- E. Salicylic

141. Admixtures can get into the herbal raw material during harvesting, drying and primary processing. Mineral admixtures include:

- A. Sand, earth, stones
- B. Metal objects
- C. Other similar plants
- D. Droppings of birds and rodents
- E. Other organs of the same plant

142. Preparations made out of eleutherococcus roots and rhizomes are administered as a tonic and adaptogenic drug. If these preparations cannot be found in a pharmacy, they can be substituted by the analogous preparations made of the following raw material:

- A. Ginseng roots
- B. Elecampane roots
- C. Rhizomes and roots of valerian
- D. Polemonium roots
- E. Acorus calamus roots

143. When a certain drug reduces the effect of another drug, such phenomenon is called:

- A. Antagonism
- B. Habituation
- C. Sensibilization
- D. Potentiation
- E. Tachyphylaxis

144. The ability of drugs to accumulate in the patient's body is called:

- A. Cumulation
- B. Antagonism
- C. Synergism
- D. Habituation
- E. Allergy

145. As main reagent in test for phosphates admixtures the Ukrainian State Pharmacopoeia recommends to use:

- A. Sulfomolybdenum
- B. Cupric tartrate
- C. Thioacetamide
- D. Acetylacetone
- E. Hypophosphite

146. A patient has been administered a spasmolytic from the group of muscarinic receptor antagonists as a part of the complex treatment for renal colic. Specify this drug:

- A. Atropine
- B. Neostigmine
- C. Galantamine
- D. Dithylinum
- E. Benzohexonium

147. A common method for quantitative determination of drugs from the group of alkali metal halogenides is:

- A. Argentometry
- B. Permanganatometry
- C. Chelatometry
- D. Alkalimetry
- E. Nitritometry

148. Treatment of poisonings with inorganic mercury compounds includes the use of the following antidote:

- A. Unithiol
- B. Naloxone
- C. Tetacinum-calcium
- D. Desferal
- E. Dexamethasone

149. A patient has been taking isosorbide for stenocardia prevention for quite a long time. Now he notes a significant decrease in the effect of the drug. What is this phenomenon called?

- A. Tolerance
- B. Cumulation
- C. Physical dependence
- D. Allergy
- E. Potentiation

150. Marketing manager at a pharmaceutical factory is planning its communication policy. Which component of the marketing communication systems has the highest value for one contact?

- A. Personal sale
- B. "Public relations"
- C. TV advertising
- D. Periodical advertising
- E. Sales promotion

151. A patient with myocardial infarction has been given an intravenous injection of a direct-acting anticoagulant. Select it among the listed drugs:

- A. Heparin
- B. Neodicumarinum
- C. Vikasolum
- D. Thrombin
- E. Calcium gluconate

152. Incoming control is conducted in the course of wholesale and retail trade, such control is carried out during receipt of goods by visual inspection or analysis of drug. Incoming control is carried out by authorized person, which is assigned by:

- A. Managers order
- B. State inspection of drugs quality control
- C. Head of regional structure
- D. Proprietor of an enterprise
- E. The order of head of territorial inspection

153. When a pharmacy records goods as received, it normally specifies the amount of the markup intended for expenditure coverage and profit gaining. Give the definition for the markup:

- A. The difference between the sale price and purchase price of goods
- B. The difference between the sales price and markup
- C. The difference between the sales price and the customs price
- D. The amount of goods sold
- E. Rummage (goods remains) at the end of the month

154. A pharmacy received a batch of goods from a supplier. What is the main financial document for posting the goods at the pharmacy?

- A. Receipts note
- B. Goods delivery note
- C. Requisition
- D. Cash order
- E. Acquittance

155. According to the basic regulations for supply of medical products, pharmacies should be supplied with medicaments with a remaining shelf life of no less than . . .%, and bacterial preparations of no less than . . .%:

- A. 60%, 40%
- B. 80%, 60%
- C. 50%, 40%
- D. 40%, 20%
- E. 60%, 30%

156. A patient with chronic bronchitis gets glaucine hydrochloride at a pharmacy. The patient must be warned about the following typical side effect of this drug:

- A. Arterial pressure drop
- B. Excitation of the central nervous system
- C. Irregular heartbeat
- D. Increased intraocular pressure
- E. Allergic skin rash

157. Select the reductant required for the determination of arsenic impurity in drugs (method 2):

- A. Sodium hypophosphite
- B. Hydrochloric acid solution
- C. Sodium sulfite solution
- D. Sodium hydroxide solution
- E. Potassium iodide solution

158. The amount of temporary disability benefit for pharmacy employees depends on the time in employment: employees with 5 years of service record receive . . .%, 5 to 8 years - . . .%, over 8 years - . . .%.

- A. 60%, 80%, 100% of the average wage
- B. 20%, 40%, 50% of the average wage
- C. 40%, 50%, 90% of the average wage
- D. 10%, 30%, 50% of the average wage
- E. 25%, 45%, 65% of the average wage

159. 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. Atropine sulfate
- C. Papaverine hydrochloride
- D. Scopolamine hydrobromide
- E. Platyphyllini hydrotartras

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. Bentonites
- B. Cellulose ethers
- C. Starch
- D. Polyethylene oxides
- E. Collagen

161. A pharmaceutical enterprise produces ointments. What base is applied for production of sulfur ointment simple?

- A. Emulsion
- B. Vaseline
- C. Base "For ophthalmic ointments"
- D. Lanolin
- E. Polyethylene glycol

162. One of the account forms of a pharmacy is the statement of balance (Form 1) which consists of the assets and liabilities. What are the elements of the assets of a pharmacy?

- A. Current and non-current assets
- B. Own and borrowed funds
- C. Own capital
- D. Borrowed funds
- E. -

163. Which drug with antagonistic effect can be used to stop bleeding caused by prolonged use of neodicumarinum?

- A. Vikasolum
- B. Aminocaproic acid
- C. Etamsylate
- D. Fibrinogen
- E. Ascorbic acid

164. 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. 22,5 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. 25,0 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

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

- A. Effervescent powder
- B. Soluble powder
- C. Powders for oral use
- D. Nasal powders
- E. Powders for external use

166. A patient suffering from allergic rhinitis was prescribed ephedrine in form of nasal drops. The patient has significantly benefited from nasal instillation, and this stimulated him to use the drug every 2 hours. But under these conditions the drug appeared to be ineffective. What is the most likely cause of this phenomenon?

- A. Tachyphylaxis
- B. Drug dependence
- C. Idiosyncrasy
- D. Allergy
- E. Cumulation

167. Which anaesthetic, anti-inflammatory, the least harmful for the stomach preparation can be recommended to a patient with exacerbation of rheumatoid arthritis?

- A. Celecoxib
- B. Diclofenac sodium
- C. Acetylsalicylic acid
- D. Ibuprofenum
- E. Indometacinum

168. A teenager with hyporexia has been recommended to drink medicinal herbal tea of the following composition: *Herba Absinthii*, *Herba Millefolii*. Specify the characteristic microscopic features of *Artemisia absinthium*, which indicate its presence in the herb mixture:

- A. T-shaped hairs along the leaf edge
- B. Simple and capitate hairs
- C. Branched, simple and ciliated hairs
- D. Retor-shaped hairs
- E. Branched and capitate hairs

169. A laboratory received some herbal raw material for analysis. The plant had flowerheads up to 4 cm in diameter, the marginal flowers were agamic, blue, funnel-shaped; the inner flowers were bisexual, purple, tubular. What plant are these features typical for?

- A. *Centaurea cyanus*
- B. *Solidago virgaurea*
- C. *Polygonum persicaria*
- D. *Scutellaria baicalensis*
- E. *Viola tricolor*

170. Specify the type of the following liniment: *Ol. Helianthi 7,4*

Sol. Ammonii caustici 25 ml

Ac. Oleinici 0,1

M.f. linimentum

D.S. To be rubbed in.

- A. Liniment, emulsion o/w
- B. Combined liniment
- C. Liniment-solution
- D. Liniment-suspension
- E. Liniment, emulsion w/o

171. During the combined pharmacotherapy a patient with peptic ulcer presented with black-coloured feces. What drug might have caused such change?

- A. Bismuth subcitrate
- B. Omeprazole
- C. Actovegin
- D. Metronidazole
- E. Ranitidine

172. A female patient in the first trimester of pregnancy has been diagnosed with acute pyelonephritis. What is the antibiotic drug of choice for treating this patient?

- A. Amoxicillin
- B. Norfloxacin
- C. Gentamicin
- D. Chloramphenicol
- E. Amikacin

173. A man with a long history of chronic hepatitis has been diagnosed with pneumonia. Which of the following antibacterial drugs can be applied in this clinical situation?

- A. Amoxicillin
- B. Tetracycline
- C. Biseptol
- D. Rifampicin
- E. Vancomycin

174. A pharmaceutical plant producing aerosol forms uses liquefied gases as propellents. Which of the following substances relates to the group of liquefied gases?

- A. Freons
- B. Nitrogen
- C. Nitrous oxide
- D. Methylene chloride
- E. Ethylene chloride

175. A patient fell ill with severe pneumonia was prescribed ceftriaxonum once a day. Prescription of ceftriaxonum once a day connected with the fact that the drug:

- A. Slowly eliminated from the body
- B. Has bactericidal effect
- C. Pluripotential
- D. Accumulates in the lungs
- E. Poorly absorbed from the injection site

176. A patient with moderately severe pneumonia has been administered ceftriaxone 1 time per day. The drug should be taken once a day due to the following properties:

- A. Slow excretion
- B. Presence of bactericidal action
- C. Wide range of action
- D. Cumulative ability
- E. Poor absorption from the injection site

177. Which of the following is the drug of choice for bronchial asthma attacks prevention?

- A. Cromolyn sodium
- B. Salbutamol
- C. Drotaverine
- D. Diphenhydramine hydrochloride
- E. Ambroxol

178. 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. Benzylpenicillin sodium salt
- B. Sodium chloride
- C. Thiamine chloride
- D. Pilocarpine hydrochloride
- E. Sodium sulfate

179. Oxidation of some toxins within the body results in generation of compounds that increase their toxicity. Thus, due to the oxidation of heptachlor in the body the following compound is formed:

- A. Heptachlor epoxide
- B. Carbon monoxide
- C. Carbon dioxide
- D. Heptachlor oxide
- E. Hexachlorocyclohexane

180. Company's activity aimed at planning, organization and control of physical movement of materials and finished goods from the production site to the place of their utilization for the purpose of covering the consumer needs and gaining profit, is called:

- A. Marketing
- B. Supply
- C. Demand
- D. Advertising
- E. Management

181. 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. 1:10
- C. 1:1000
- D. 1:50
- E. 1:20

182. In course of isoniazid identification a pharmacy analyst boiled thoroughly the substance with 2,4-dinitrochlorobenzene. The substance turned yellow, after adding alkaline solution it turned first violet and then brownish-red. As a result of this reaction the following aldehyde derivative is produced:

- A. Glutaconic
- B. Gluconic
- C. Glutamic
- D. Glyoxylic
- E. Hexanic

183. In order to verify identity of tropan derivatives, Vitali's reaction is applied. For that purpose the medications should be first decomposed with nitric acid and then treated with alcoholic solution of

potassium hydroxide and acetone. What effect will be observed?

- A. The solution will turn purple
- B. The solution will turn green
- C. Emission of gas bubbles
- D. Setting of black precipitate
- E. Setting of white precipitate

184. A pharmaceutical factory produces herbal juice out of fresh raw material. What operation should be performed at the stage of juice purification?

- A. Heating followed by quick cooling
- B. Sedimentation
- C. Adsorption
- D. Filtration
- E. Crystallization

185. Absorption of tetracycline preparations will be reduced when they are administered simultaneously with antacids. This is an example for:

- A. Pharmacokinetic incompatibility
- B. Pharmaceutical incompatibility
- C. Pharmacodynamic incompatibility
- D. Drugs synergism
- E. Functional drugs antagonism

186. 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. Eutectic
- C. Oxidization
- D. Moisture-repellant
- E. Insolubility

187. What substance will impede reaction of iodoform test aimed at detection of ethyl alcohol in the biological material?

- A. Acetone
- B. Methanol
- C. Isoamyl alcohol
- D. Phenol
- E. Formaldehyde

188. A 24-year-old patient has been suffering from diabetes mellitus type I for 8 years. Diabetic nephropathy provoked development of symptomatic arterial hypertension. Which of the following drugs is indicated for long-term therapy?

- A. Enalapril
- B. Propranolol
- C. Clonidine
- D. Dibazol
- E. Dichlothiazide

189. Analgin substance has been sent for analysis. What method allows to evaluate quantitative content of analgin?

- A. Iodometry
- B. Acidimetry
- C. Alkalimetry
- D. Chelatometry
- E. Permanganatometry

190. 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 adoniside
- B. In the lily-of-the-valley tincture
- C. In the valerian tincture
- D. In the mixture of tinctures
- E. Potassium bromide should be added into the selling vial last of all

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

- A. Polyethylene oxide
- B. Cocoa butter
- C. Vitepsol
- D. Hard fat
- E. Butyrol

192. Treatment course of essential hypertension includes diuretics. Which diuretic **DOES NOT NEED** to be combined with potassium preparations?

- A. Triamteren
- B. Clopamide
- C. Dichlothiazide
- D. Furosemide
- E. Ethacrynic acid

193. A pharmacy store was supplied with 100 packs of a product listed as *Nitroglycerine*. With regard to its physicochemical properties this preparation should be rated among the following drug group?

- A. Explosive substances
- B. Explosion hazardous substances
- C. Highly inflammable substances
- D. Combustible substances
- E. Volatile substances

194. During an operation a dentist needs to reduce salivation in a patient. The dentist has to use a drug of the following pharmacological group:

- A. Muscarinic receptor blockers
- B. Muscarinic cholinomimetics
- C. Adrenomimetics
- D. Adrenoceptor blocker
- E. Muscarinic and nicotinic cholinomimetics

195. A patient with hypertensive crisis received an injection of ganglionic blocker benzohexonium. What side effect might be expected after the drug injection?

- A. Orthostatic hypotension
- B. Withdrawal (abstinence) syndrome
- C. Central nervous system depression effect
- D. Taste violation
- E. Diarrhea

196. Pharmaceutical chemistry studies methods of drug synthesis. Interaction of anesthesin with beta-diethylaminoethanol in presence of sodium alcoholate with following acidation with hydrochloric acid results in origination of:

- A. Procaine hydrochloride
- B. Procainamide hydrochloride
- C. Tetracaine hydrochloride
- D. Xycain
- E. Trimecaine hydrochloride

197. A pharmacy procured common organum. What drying conditions should be applied for producing high quality crude drug?

- A. 35 – 40°C
- B. 80 – 90°C
- C. 60 – 70°C
- D. 50 – 60°C
- E. 70 – 80°C

198. For accounting business transactions carried out in a pharmacy the synthetic accounts are used. Their list is given in the Chart of Accounts. Balances of the I, II and III account classes are used for completion of the following document:

- A.** Assets
- B.** Profit and Loss Account
- C.** Liabilities
- D.** First section of the liabilities balance sheet
- E.** Fourth section of the liabilities balance sheet

199. An interhospital pharmacy got an order from a surgical department for a depolarizing muscle relaxant for surgical interventions. What drug was ordered?

- A.** Dithylinum
- B.** Nicotine
- C.** Atropine sulfate
- D.** Methacin
- E.** Hygronium

200. A patient who has taken phenobarbital for a long time was prescribed diclofenac sodium. However the anti-inflammatory effect of diclofenac appeared to be less than expected due to the pharmacokinetic interaction of these drugs. Such interaction might be the result of the following processes:

- A.** Accelerated drug metabolism in liver
- B.** Decelerated drug metabolism in liver
- C.** Reduced protein concentration in plasma
- D.** Change of receptor sensibility
- E.** Increased drug dosage