

MINISTRY OF PUBLIC HEALTH OF UKRAINE

Department of human resources policy, education and science

Testing Board

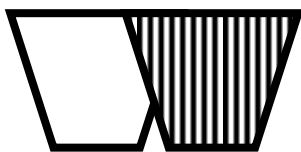
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Test items for licensing examination

Krok 2 PHARMACY



General Instruction

Every one of these numbered questions or unfinished statements in this chapter corresponds to answers or statements endings. Choose the answer (finished statements) that fits best and fill in the circle with the corresponding Latin letter on the answer sheet.

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The book includes test items for use at licensing integrated examination “Krok 2 Pharmacy” and further use in teaching.

The book has been developed for students of pharmaceutical faculties and academic staff of higher medical educational establishments.

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1. To improve iodine solubility in the purified water, iodine must be:

- A. Dissolved in the saturated solution of potassium iodide
- B. Dissolved in the boiling water
- C. Reduced to fine powder
- D. Dispersed with glycerine
- E. Comminuted with alcohol

2. What herbal bioactive substances yield a positive reaction with ferric ammonium alum solution?

- A. Tannins
- B. Saponins
- C. Polysaccharides
- D. Bitters
- E. Fatty oils

3. A pharmaceutical company produces a medicine under the brand name "Corylyconum". What herbal raw material is used in preparation of this drug?

- A. Lily-of-the-valley grass
- B. Wormwood grass
- C. Dandelion roots
- D. Plantain foliage
- E. Buckthorn bark

4. A pharmacist prepares fat-based suppositories by pouring. Specify the type of fatty vehicle in this case:

- A. Butyrol
- B. Vaseline (petroleum jelly)
- C. Cocoa butter
- D. Wax
- E. Spermaceti

5. Proper harvesting of *Frangula alnus* herbal raw material greatly influences the quality and quantity of its active substances. Therefore the optimal time for buckthorn bark harvesting is the period of:

- A. Sap flow
- B. Fruiting
- C. Flowering
- D. Defoliation
- E. Dormancy

6. Drugs derived from *Rauwolfia serpentina* roots are used in hypertension treatment. Authenticity of *Rauwolfia serpentina* herbal raw material can be confirmed by its content of:

- A. Reserpine
- B. Atropine
- C. Hyoscyamine
- D. Vinblastine
- E. Adonitoxin

7. What concept can be described as "...an area of exchange with its characteristic system of economic relations between goods manufacturers and consumers"?

- A. Market
- B. Marketing
- C. Sales
- D. Agreement
- E. Management

8. There are various groups of adjuvants used in tablet production. What is the function of excipients?

- A. To make pills of a certain weight
- B. To create necessary adhesive force between particles
- C. To improve disintegration
- D. To improve the flowability of granular material
- E. To improve the taste

9. Various types of dryers can be used for granule dehumidification. Specify the type of "CPI-30" dryer:

- A. Fluidized bed dryer
- B. Freeze dryer
- C. Infrared dryer
- D. Silica gel dryer
- E. Forced air dryer

10. During microscopy of althaea root it is necessary to determine the presence of starch granules within the plant cells. What reagent enables such analysis?

- A. Lugol's solution
- B. Ammonium hydroxide
- C. Concentrated sulfuric acid
- D. Alcohol solution of α -naphthol
- E. Thymol solution

11. A pharmacist has made an injection solution that contains a salt produced by reaction of a strong base with a weak acid. Specify the necessary stabilizer:

- A. Sodium hydrochloride
- B. Sodium sulfate
- C. Hydrochloric acid
- D. Ascorbic acid
- E. Cysteine

12. The analytical laboratory recei-

ved calcium chloride. What volumetric solution should be used for quantitative determination of this medicinal substance?

- A. Sodium edetate
- B. Potassium bromate
- C. Hydrochloric acid
- D. Potassium permanganate
- E. Sodium hydroxide

13. An analytical chemist of a central industrial laboratory performs quantitative determination of penicillin sum in benzylpenicillin sodium salt by means of iodometric method. What indicator is used?

- A. Starch
- B. Phenolphthalein
- C. Potassium chromate
- D. Methyl orange
- E. Methyl red

14. A pharmacist prepares cocoa butter-based round vaginal suppositories with less than 5% of citric acid. Specify the most rational approach to introduction of the active ingredient into the vehicle:

- A. Dissolve in minimal quantity of purified water
- B. Dissolve in Dimexid (Dimethylsulfoxide)
- C. Dissolve in molten cocoa butter
- D. Dissolve in vaseline oil
- E. Dissolve in alcohol

15. A pharmacist needs to prepare eyedrops with pilocarpine hydrochloride. Specify the optimal isotonic agent in this case:

- A. Sodium chloride
- B. Sodium sulfate
- C. Glucose
- D. Boric acid
- E. Sodium nitrite

16. Motherwort grass is a component of hypotensive and sedative drugs. This herbal raw material should be harvested taking into account its renewal rate. Therefore it can be harvested:

- A. Once every 5 years
- B. Once every 2 years
- C. Once every 3 years
- D. Once every 10 years
- E. Every year

17. The doctor prescribed a patient 100 ml

of thermopsis grass infusion. How much of the dry concentrate of thermopsis grass (1:1) should the pharmacist measure out for this patient?

- A. 0.25 g
- B. 0.5 g
- C. 0.3 g
- D. 0.2 g
- E. 0.1 g

18. A patient needs the pharmacy to prepare him a camphor ointment. What concentration of camphor should be in the ointment according to the regulatory documents?

- A. 10%
- B. 20%
- C. 15%
- D. 5%
- E. 1%

19. Urethral suppositories are being made for a patient. What parameters should be specified by the doctor in the formulation for the pharmacist to be able to calculate the necessary amount of the vehicle correctly?

- A. Diameter, length, and quantity of the suppositories
- B. Diameter and quantity of the suppositories
- C. Length and quantity of the suppositories
- D. Diameter and vehicle of the suppositories
- E. Quantity and vehicle of the suppositories

20. For better coverage of various markets the "Lubnyfarm" company sells a portion of its production through its own chain of pharmacies, another portion is being sold through distributors, and the third - through pharmacies of another business owners. What marketing system of distribution is applied by this company?

- A. Multichannel
- B. Horizontal
- C. Corporate
- D. Contractual
- E. Administered

21. Prior to making a sodium chloride isotonic solution a pharmacist baked the powder in a dry heat box. What substances are removed by this operation?

- A. Pyrogenic substances
- B. Redox substances
- C. Sulfates
- D. Chlorides
- E. Moisture

22. A pharmacy received an infusion formulation. What herbal raw material can be used to make this dosage form?

- A. Valerian roots with rhizomes
- B. Rhubarb roots
- C. Oak bark
- D. Arrow-wood bark
- E. Buckthorn bark

23. Among various types of tablet external layers there are enterosoluble coatings. Where in the body are they dissolved?

- A. Intestine
- B. Stomach
- C. Oral cavity
- D. Rectum
- E. Esophagus

24. A certain type of herbal raw material is being harvested in spring during sap flow. Specify this material:

- A. Bark
- B. Flowers
- C. Buds
- D. Roots
- E. Infructescences

25. A pharmacist has prepared an eyedrops vehicle. What method of sterilization should be chosen in this case?

- A. Dry heat
- B. Flowing steam
- C. Pasteurization
- D. Ultraviolet irradiation
- E. Membrane filtration

26. Optical rotation angle of substances is determined under the temperature of 20°C , in 1-decimeter-thick layer, with wavelength of sodium spectrum D-lines ($\lambda = 589.3 \text{ nm}$), and is calculated with reference to a solution containing 1 g of the substance per ml. It is called:

- A. Specific optical rotation
- B. Optical density
- C. Refractive index
- D. Relative density
- E. Distribution coefficient

27. Specify the control methods aimed at detecting mechanical impurities in

parenteral solutions:

- A. Visual optical
- B. Limulus test
- C. Amperometric
- D. Gravitational
- E. NMR and UV-visible spectroscopy

28. To stabilize the suspension a pharmacist has used potassium soap. What substance does this suspension contain?

- A. Sulfur
- B. Phenyl salicylate
- C. Menthol
- D. Basic bismuth nitrate
- E. Camphor

29. An analytical chemist performs the qualitative assessment of mercury (II) chloride. What method is recommended by the State Pharmacopoeia of Ukraine for quantitative assessment in this case?

- A. Complexometric titration
- B. Nitritometric titration
- C. Bromatometry
- D. Alkalimetry
- E. Acidimetry

30. An analytical chemist investigates a 3% hydrogen solution. What reagent is recommended by the State Pharmacopoeia of Ukraine for identification of this substance?

- A. Potassium chromate
- B. Sodium chloride
- C. Magnesium sulfate
- D. Calcium chloride
- E. Zinc oxide

31. A pharmacist has prepared a compound ointment. What is the correct sequence of its preparation?

- A. Suspension - solution - emulsion
- B. Solution - emulsion - suspension
- C. Emulsion - suspension - solution
- D. Solution - suspension - emulsion
- E. Emulsion - solution - suspension

32. What stage is the last in making injection solutions?

- A. Labeling
- B. Sterilization
- C. Filtering
- D. Qualitative control
- E. Quantitative control

33. Benzoic acid is known to have anti-

septic properties. To identify this acid the following should be used:

- A. $FeCl_3$
- B. $[NH_4]_2C_2O_4$
- C. $K_2[HgI_4]$
- D. K_2CrO_4
- E. $KMnO_4$

34. Manufacturer's marketing department detected negative demand for a certain goods. What would be the marketing task? What type of marketing should be applied?

- A. Demand making, conversion marketing
- B. Demand leveling, synchromarketing
- C. Demand increase, remarketing
- D. Demand decrease, demarketing
- E. Demand stimulation, promotional marketing

35. To determine the quantity of wild-growing medicinal plants, it is necessary to know their area of vegetation and yield per unit area. Yield of *Thymus serpyllum* grass can be determined by the following method:

- A. Projective cover method
- B. Permanent quadrat method
- C. Visually
- D. Model sample method
- E. Geodesically

36. To prepare decoctions with the volume of 1000-3000 ml, they should be infused in a boiling water bath for:

- A. 40 minutes
- B. 25 minutes
- C. 30 minutes
- D. 45 minutes
- E. 15 minutes

37. What medicinal agents must be manufactured in aseptic conditions followed by thermal sterilization with high-pressure saturated steam?

- A. Injection solutions with thermostable substances
- B. Injection solutions with thermolabile substances
- C. Concentrated solutions for burette systems
- D. Liquid ingestible antibiotics
- E. 2% collargol solution for infants

38. When preparing dermatological ointments the following substance should

be introduced by suspending:

- A. Xeroform
- B. Camphor
- C. Menthol
- D. Protargol (silver proteinate)
- E. Ephedrine hydrochloride

39. An analytical chemist analyses the substance of racemic menthol according to the State Pharmacopoeia of Ukraine. To identify the drug and determine its purity he measures optical rotation that should occur within the interval:

- A. From $+0.2^\circ$ to -0.2°
- B. From -48° to -51°
- C. From $+50^\circ$ to $+56^\circ$
- D. From $+10^\circ$ to $+13^\circ$
- E. From -102° to -105°

40. A pharmacist makes powders by grinding one of the formulation components with ethyl alcohol. This technology is typically applied when working with the following substance:

- A. Streptocid
- B. Starch
- C. Talcum
- D. Zinc oxide
- E. Bolus alba

41. A pharmacist prepares suppositories by pouring. Name the coefficient for substitution of fatty vehicle with glycerinated gelatin vehicle:

- A. 1.21
- B. 1.20
- C. 1.31
- D. 1.11
- E. 1.25

42. Presence of phenolic hydroxyl in the structure of pyridoxine hydrochloride can be confirmed by application of the following solution:

- A. Iron (III) chloride
- B. Potassium permanganate
- C. Sodium sulfate
- D. Silver nitrate
- E. Sodium nitrite

43. Tyndallization is used at a pharmaceutical factory as a sterilization method for thermolabile substances. Essentially this method consists of:

- A.** Triple heating of solution to 40-60°C with 24-hour-long intervals in between for thermostating
- B.** Autoclaving at 119-121°C with pressure at 1.0-1.1 atm
- C.** Sterilization with flowing steam at 100°C
- D.** Sterilization with dry heat at 180-200°C for a lengthy period of time
- E.** Sterilization with high-frequency and microwave frequency current

44. A pharmacy received a prescription for compound powders containing a coloring agent. Which of the powder components given below is a colouring agent?

- A.** Ethacridine lactate (Rivanol)
- B.** Camphor
- C.** Sulfanilamide
- D.** Bismuth nitrate
- E.** Silver proteinate (Protargol)

45. Quantitative content of theophylline can be determined by alkalimetric titration of nitric acid that is quantitatively obtained as the result of the following theophylline salt production:

- A.** Silver
- B.** Potassium
- C.** Sodium
- D.** Ammonium
- E.** Lithium

46. Highly convincing approach to informing the population about the company and its products, commercial promotion of high use value of the goods and proper conduct of business by the company, actions intended to prompt purchase of goods by both active and potential customers are all characteristic of:

- A.** Advertisement
- B.** Trademark
- C.** Marketing
- D.** Communications
- E.** Supply

47. What pharmacotherapeutic characteristic of a medicine allows its classification as over-the-counter drug?

- A.** Medicine can cause no direct or indirect harm to the patient's health
- B.** Medicine is available only for in-patient treatment
- C.** Medicine contains substances that require additional research into their activity and side-effects
- D.** Medicine is available only by prescription
- E.** Medicine has entered the pharmaceutical market only recently and actual experience with its practical application is limited

48. A process dealing with drawing the documents, their processing, circulation and storage is called records management. If all documents circulate through one organisation center, - office desk, - then such system of records management is called:

- A.** Centralized
- B.** Decentralized
- C.** Mixed
- D.** Referent
- E.** Specialized

49. What method is recommended by the State Pharmacopoeia of Ukraine for quantitative determination of potassium chloride substance that is used in treatment of hypokalemia?

- A.** Argentometry
- B.** Bromatometry
- C.** Iodometry
- D.** Cerimetry
- E.** Polarimetry

50. Standardization of a certain herbal raw material is done by calculating its alkaloid content in terms of hyoscyamine. Name this herbal raw material:

- A.** *Folia Belladonnae*
- B.** *Radices Berberidis*
- C.** *Herba Chelidonii*
- D.** *Herba Thermopsisidis lanceolatae*
- E.** *Fructus Capsici*

51. A pharmacy receives centralized deliveries of goods from the warehouse. Specify the document that is **NOT NECESSARY** for accounting of goods receipt by the pharmacy:

- A.** Cash receipt order
- B.** Goods report (Inventory change report)
- C.** Goods received record book by groups of goods
- D.** Goods received record book by item and supplier
- E.** Financial operating report of the pharmacy

52. An accountant conducts necessary calculations for remuneration of labor. Name the type of remuneration that is due for labor carried out according to the work standards and is paid within the amount determined by basic or piece wages for factory workers and salaries for office workers:

- A.** Basic pay
- B.** Bonus
- C.** Increment
- D.** One-off payment
- E.** Financial aid

53. Lately the "Phytopharm" pharmaceutical company has been forced to decrease its production volume and range of goods. Not only does the company head manager demonstrate no managerial abilities, but he also appears to be completely disinterested in the running of the business and executes no control over it. Determine the leadership type of the head manager in this case:

- A.** Liberal
- B.** Democratic
- C.** Directive
- D.** Authoritarian
- E.** Autocratic

54. The "Medpharm" wholesale pharmaceutical firm employs a system that encourages its managers to achieve better results in sales by assigning them points for surpassing their sale goals. The points then become converted into material remuneration. This way the company management carries out the following management function:

- A.** Motivation
- B.** Organization
- C.** Control
- D.** Delegation
- E.** Planning

55. To retain full control over its trade operations on the regional market, the "Fitoprom" pharmaceutical company conducts its marketing policy without any

intermediate parties. Name the marketing practice that excludes the middleman:

- A.** Direct
- B.** Combined
- C.** Mixed
- D.** Mediated
- E.** Indirect

56. When an extractant is filtered through a herbal raw material to obtain an extract of the substances soluble in this extractant, this process is called:

- A.** Percolation
- B.** Maceration
- C.** Remaceration
- D.** Turbo extraction
- E.** Steeping

57. The following substance is used as an extractant in production of liquid extracts:

- A.** Ethanol
- B.** Acetone
- C.** Dichloroethane
- D.** Chloroform
- E.** Glycerine

58. A pharmacy customer complains of constricting retrosternal pain that irradiates into the left arm; he fears that he may die. The pain appeared suddenly after physical exertion. Name the first aid medicine in this case:

- A.** Nitroglycerine
- B.** Metacycline
- C.** Naphthyzin (Naphazoline)
- D.** Panangin
- E.** Riboxin (Inosine)

59. A certain management style can be characterized by the following features: the authority is highly centralized; work duties of the employees are very structured; the ability of employees to make decisions is extremely limited; strict compliance with numerous rules and regulations is prioritized. Name this management style:

- A.** Authoritarian
- B.** Democratic
- C.** Collective
- D.** Liberal
- E.** Direct

60. Valerian roots and rhizomes are processed in the phytochemistry workshop to produce tinctures and thi-

ck extracts that are the components of combined sedatives. Name the group of bioactive compounds that includes valerian valepotriates, - valtrate, acevaltrate, and dihydrovaltrate:

- A. Iridoids
- B. Essential oils
- C. Alkaloids
- D. Polysaccharides
- E. Saponins

61. During limit test for aluminium admixture, the State Pharmacopoeia of Ukraine recommends to use the following solution as the basic reagent:

- A. Hydroxyquinoline
- B. Sodium tetraphenylborate
- C. Thioglycolic acid
- D. Sodium hypophosphite
- E. Barium chloride

62. Specialists of a pharmaceutical enterprise confirm the identity of *Cassia acutifolia* herbal raw material. During reaction with alkali it developed cherry-red coloring. What substances were identified?

- A. Anthraquinones
- B. Tannins
- C. Alkaloids
- D. Glycosides
- E. Iridoids

63. To increase its sales, the "Have a good day!" pharmacy introduced a discount system. According to this system if a customer buys 100 UAH worth of medical products, this customer receives 2% discount. What marketing communication has this pharmacy implemented?

- A. Consumer-oriented sales promotion
- B. Middlemen-oriented sales promotion
- C. Personal sale
- D. Public relations, sponsorship
- E. Salesmen-oriented sales promotion

64. An analytical chemist performs quantitative analysis of isoniazid by means of direct bromatometry with volumetric solutions of potassium bromate, potassium bromide, hydrochloric acid and methyl red as an indicator. This method is based on the following reaction:

- A. Oxidation of the hydrazine group with bromine
- B. Reduction of the hydrazine residue with bromine
- C. Oxidation of the hydrazine residue with potassium bromide
- D. Opening of the pyridine ring
- E. Bromination of the pyridine ring

65. According to the State Pharmacopoeia of Ukraine, an analytical chemist determines quantitative content of potassium acetate by means of acidimetry in non-aqueous medium. Name the volumetric solution in this case:

- A. Perchloric acid
- B. Iodine
- C. Potassium bromate
- D. Sodium hydroxide
- E. Sodium nitrite

66. Yarrow grass is a component of herbal gastrointestinal remedies and is used to make herbal drugs. According to the State Pharmacopoeia of Ukraine the quality of this herbal raw material is assessed by its content of:

- A. Essential oils and proazulenes
- B. Alkaloids
- C. Polysaccharides
- D. Cardiac glycosides
- E. Vitamines

67. Specify the fluid used to coat the forms for pouring of the suppositories with hydrophilic vehicles:

- A. Vaseline (petroleum jelly)
- B. Glycerine
- C. Purified water
- D. Glycerine-water solution
- E. Dimethylsulfoxide

68. A pharmacy offers to its customers a chance to measure their blood pressure. What type of goods is it?

- A. Service
- B. Convenience goods
- C. Nondurable goods
- D. Specialty goods
- E. Unsought goods

69. How often should a pharmacy make an inventory of its fixed assets?

- A. Once a year
- B. At least thrice a year
- C. At least once in a quarter
- D. Once every three years
- E. At least twice a year

70. An analytical chemist should use the following solution to identify sodium-containing substances:

- A. Potassium pyroantimonate
- B. Potassium permanganate
- C. Sodium citrate
- D. Potassium carbonate
- E. Barium hydroxide

71. An analytical chemist performs collargol identification by means of ashing. Obtained residue is then dissolved in hydrochloric acid. Specify the analytical effect that is observed in this case:

- A. White precipitate
- B. Black precipitate
- C. Yellow precipitate
- D. Blue precipitate
- E. Light green precipitate

72. The analyst determines quantitative content of sodium benzoate by means of acidimetry in non-aqueous medium according to the State Pharmacopoeia of Ukraine. What reagent is used as a solvent in this case?

- A. Anhydrous acetic acid
- B. Pyridine
- C. Concentrated sulfuric acid
- D. Dimethyl formamide
- E. Sulfanilic acid

73. Limit cash balance is the maximum amount of monetary funds that can remain in the cash desk of an organization at the end of a workday. This limit is established by the following authorities:

- A. Pharmacy management
- B. Chief physician
- C. Local authorities
- D. Tax Inspectorate
- E. -

74. A 45-year-old man has been taking long-acting nitrates twice a day for a year. Currently a decrease in effectiveness of the pharmacotherapy is being observed. What side-effect can be suspected in the first place?

- A. Development of nitrate tolerance
- B. Progressing ischemic heart disease
- C. Progressing coronary atherosclerosis
- D. Myocardial infarction
- E. Impairment of coronary circulation

75. A 63-year-old man suffering from ischemic heart disease was diagnosed with angle closure glaucoma. What group of drugs is **CONTRAINDICATED** in this case?

- A. Nitrates
- B. β -adrenergic blockers
- C. Calcium antagonists
- D. Anticoagulants
- E. Statins

76. Inspection of received medicines should be performed by an authorized employee. What is **NOT** a part of the responsibilities of this person?

- A. To draw up orders for medicines and medical products, to conclude sales contracts
- B. To draw up conclusions regarding inspection of received medicines
- C. To keep a record book of received medicines
- D. To check the pharmacy stock for low-quality or fake medicines
- E. -

77. Snake venom-based drugs are widely applied in treatment of locomotor apparatus diseases. Main components of these venoms are:

- A. Toxic proteins
- B. Alkaloids
- C. Cardiac glycosides
- D. Glucosinolates
- E. Phenol-alcohols

78. A 25-year-old man is diagnosed with acute pyelonephritis of moderate severity. What drugs should be prescribed for etiotropic therapy?

- A. Antimicrobial agents
- B. Glucocorticoids
- C. Nonsteroidal anti-inflammatory drugs
- D. Anticholinesterase drugs
- E. Antiarrhythmic drugs

79. Doctor's prescription fulfills several functions. What function indicates that the doctor bears responsibility for correct prescription of medicines to the patient?

- A. Legal
- B. Social
- C. Informational
- D. Technological
- E. Economic

80. Accounting records are classified by the type of asset accounting or by their sources. Active accounts keep record of the following:

- A. Monetary funds
- B. Equity capital
- C. Bank loans
- D. Debt settlement with the creditors
- E. Salaries payment

81. An analytical chemist determines potassium ions admixture in a medicinal substance with sodium tetraphenylborate according to the State Pharmacopoeia of Ukraine. What analytical effect would confirm the presence of this admixture?

- A. White opalescence
- B. Yellow coloring
- C. Blue coloring
- D. Pink coloring
- E. Brown coloring

82. The cholagogue derived from *Rosa canina* fruit is used in treatment of liver and gallbladder diseases. Name this drug:

- A. Cholosas
- B. Chophytol
- C. Phytolyt
- D. Allochol
- E. Altan

83. Standard stactometer divides 1 ml of water into:

- A. 20 drops
- B. 15 drops
- C. 25 drops
- D. 30 drops
- E. 10 drops

84. A medicinal plant contains hydroxycoumarins and is used in production of venotonic agents. Name the herbal raw material harvested from this plant:

- A. *Semina Hippocastani*
- B. *Herba Meliloti*
- C. *Fructus Ammi majoris*
- D. *Fructus Pastinacae sativae*
- E. *Fructus Dauci carotae*

85. What corticosteroid medicinal substance has two fluorine atoms in its

chemical structure?

- A. Fluocinolone acetonide
- B. Dexamethasone
- C. Triamcinolone acetonide
- D. Prednisolone
- E. Hydrocortisone acetate

86. A private pharmacy received a supply of a drug with 2,3-dihydro-2-methyl-1,4-naphthoquinone-2-sulfonate sodium as an active ingredient. Name this drug:

- A. Vicasol (Menadione)
- B. Rutin
- C. Riboflavin
- D. Ergocalciferol
- E. Cocarboxylase hydrochloride

87. When servicing customers it is necessary to maintain cash desk discipline. A cashier should make records in the cash book:

- A. Immediately after the cash transaction occurred
- B. Monthly
- C. Quarterly
- D. Weekly
- E. At the end of a workday

88. What factors affect tablet disintegration?

- A. Amount and nature of disintegrating agents
- B. Poor flowability
- C. High specific gravity of powders
- D. Tablet powder contains lamellar crystals
- E. Heterogeneity of granulated material

89. Digoxin is given to the patients with chronic heart failure. What medicinal plant that contains cardiac glycoside is a source of this medicinal substance?

- A. *Digitalis lanata*
- B. *Erysimum canescens*
- C. *Strophanthus kombe*
- D. *Adonis vernalis*
- E. *Convallaria majalis*

90. What department of a wholesale firm is tasked with search for and analysis of potential suppliers' commercial offers, as well as concluding supply contracts and supervision of contract fulfillment?

- A. Supply department
- B. Marketing department
- C. Shipping department
- D. Stores development
- E. Finance department

91. The reaction of glucose identification produces red precipitate with the following reagent:

- A. Copper-tartrate
- B. Thiocyanogen bromide
- C. Ammoniacal silver nitrate solution
- D. Alkaline potassium tetraiodomercurate solution
- E. Sodium nitroprusside solution

92. During quantitative determination of Vicasol (Menadione) by means of cerimetry, the following indicator is used:

- A. Ferroin
- B. Naphtholbenzein
- C. Crystal violet
- D. Methyl orange
- E. Methyl red

93. As the result of reduction of alcoholic solutions of 5-nitrofurans derivatives by means of their reaction with zinc in the presence of diluted hydrochloric acid, the following occurs:

- A. Solution decoloration
- B. Precipitation
- C. Ammonia production
- D. Color change from yellow to black
- E. Precipitation and gassing

94. A patient developed dry cough while undergoing pharmacotherapy for arterial hypertension. What group of drugs can be characterized by this side effect?

- A. ACE inhibitors
- B. Calcium antagonists
- C. Antipsychotics
- D. Tranquilizers
- E. Antacids

95. Vinblastine and Vincristine demonstrate antitumor activity. Name the herbal raw material used in production of these medicines:

- A. *Folia Catharanthi rosei*
- B. *Herba Vincae minoris*
- C. *Rhizomata Nupharis lutei*
- D. *Folia Berberidis*
- E. *Herba Selaginis*

96. A pharmacist prepares 180 ml of adonis grass infusion. How much herbal

raw material should be taken to prepare this infusion?

- A. 6.0
- B. 10.0
- C. 2.0
- D. 15.0
- E. 18.0

97. A certain drug explodes when heated to 180°C or upon impact and, therefore, must be handled carefully during receipt and storage. This drug is:

- A. Nitroglycerine solution
- B. Activated carbon
- C. Alcoholic iodine solution
- D. Barium chloride
- E. Calcium chloride

98. A pharmaceutical warehouse received a herbal raw material that consists of "cones" with loose scales that are attached to a firm twig with or without fruits. Its collective fruits are pale green, fragrant, and bitter. Name the plant from which this herbal raw material was harvested:

- A. *Humulus lupulus*
- B. *Alnus incana*
- C. *Juniperus communis*
- D. *Rubus idaeus*
- E. *Olea europaea*

99. The Income Statement of a pharmacy for the first quarter of 20XX contains the following entries: goods turnover - 45 000 UAH, production cost of products sold - 30 000 UAH, turnover costs - 10 000 UAH. Determine the income:

- A. 5 000 UAH
- B. 30 000 UAH
- C. 40 000 UAH
- D. 15 000 UAH
- E. 35 000 UAH

100. Under the current legislation, full or partial exemption of persons and legal entities from tax payment is called:

- A. Tax concession
- B. Tax rate
- C. Tax
- D. Tax system
- E. Subject to taxation

101. Name the official document on audit results, which is drawn under the standard procedure and contains conclusions about reporting credibility

and integrity of financial statements of an organization:

- A. Auditor's conclusion
- B. Income statement
- C. Balance sheet
- D. Cash flow statement
- E. Statement of changes in equity

102. In Ukraine the auditor position eligibility requires the candidate to be a Ukrainian citizen and have the qualification certificate for work as an auditor within the Ukraine's territory. The certificate is effective for:

- A. 5 years
- B. 3 years
- C. 2 years
- D. 1 year
- E. Indefinitely

103. During an asphyxiating attack the patient with bronchial asthma was given intravenously a drug that caused nausea, headache, excitation, and palpitations as side effects. What drug can cause such reaction?

- A. Euphylline (Aminophylline)
- B. Prednisolone
- C. Ambroxol
- D. Suprastin (Chloropyramine)
- E. Papaverine hydrochloride

104. A 46-year-old pharmacy customer suffers from chronic bronchitis and needs a medicine to facilitate expectoration of thick viscous sputum. What drug is indicated in this case?

- A. Ambroxol
- B. Oxeladin
- C. Salbutamol
- D. Butamirate
- E. Codeine phosphate

105. A 52-year-old patient has been diagnosed with gouty arthritis, phase 2. What drug should be basic in treatment of this patient?

- A. Allopurinol
- B. Hydrochlorothiazide
- C. Paracetamol
- D. Furosemide
- E. Penicillin

106. A certain drug can be quantitatively assessed by means of direct alkalimetry in glycerine, mannitol, or other polyhydric alcohol medium. This drug is:

- A. Boric acid
- B. Benzoic acid
- C. Salicylic acid
- D. Glutaminic acid
- E. Acetylsalicylic acid

107. Bromatometry allows quantitative analysis of the following drug:

- A. Sodium salicylate
- B. Glutamic acid
- C. β -Alanine
- D. Benzoic acid
- E. Potassium acetate

108. A pharmacy has received a formulation for the solution with a substance that moderately expands in the cold water. Name this substance:

- A. Gelatin
- B. Glucose
- C. Calcium chloride
- D. Sodium chloride
- E. Protargol (Silver proteinate)

109. Doctor's prescription has several functions. What function of the prescription allows its participation in the process of payment in cases when medicines should be issued free of charge or at a reduced price?

- A. Economic
- B. Social
- C. Legal
- D. Medical
- E. Technological

110. What drug, due to β -lactam ring in its structure, has positive reaction with hydroxylamine hydrochloride solution in the presence of sodium hydroxide with subsequent addition of iron (III) chloride solution?

- A. Amoxicillin trihydrate
- B. Metronidazole
- C. Papaverine hydrochloride
- D. Phenazone
- E. Dibazol (Bendazol)

111. A patient with angina pectoris takes long-acting nitrates. Consult him what side-effect is the most common for these drugs:

- A. Headache
- B. Nausea
- C. Vomiting
- D. Diarrhea
- E. Constipation

112. To ensure the quality of medicines the pharmacy devotes much attention to quality control. The following document is the quality assurance of a drug:

- A. Quality certificate
- B. Registration certificate
- C. Certificate of compliance with hygiene regulations
- D. Sanitary-epidemiological certificate
- E. Sanitary passport

113. How long should a retail business that deals in medicines keep the quality certificates issued by drug manufacturers?

- A. 3 years
- B. 1 year
- C. 2 years
- D. 6 months
- E. 5 years

114. Pharmacy employees receive their salary payments twice a month. What should the cashier do, if a pay day coincides with a holiday?

- A. To pay the salaries one day earlier
- B. To pay the salaries after the holiday
- C. To pay the salaries on the holiday
- D. To pay the salaries 10 days earlier
- E. There are no regulations regarding payment of salaries in this case

115. Essential oil of a certain plant contains up to 80% of cineole. Specify the herbal raw material that is collected from this plant:

- A. *Folia Eucalypti*
- B. *Folia Betulae*
- C. *Folia Menthae piperitae*
- D. *Folia Melissa*
- E. *Folia Absinthii*

116. Nicotinamide is a pyridine derivative, which can be identified by its positive reaction with:

- A. Cyanogen bromide reagent
- B. Copper-tartrate solution
- C. Grade reagent
- D. Thioacetamide reagent
- E. Thioglycolic acid solution

117. According to the State Pharmacopoeia

of Ukraine, an analytical chemist should use acidimetry in non-aqueous medium to determine quantitative content of the following purine alkaloid:

- A. Caffeine
- B. Theobromine
- C. Caffeine and sodium benzoate
- D. Theophylline ethylenediamine
- E. Theophylline

118. An analytical chemist performs identification of lidocaine hydrochloride. According to the State Pharmacopoeia of Ukraine the presence of chloride ions can be confirmed by means of reaction with silver nitrate solution resulting in:

- A. White caseous precipitate
- B. Green fluorescence
- C. Violet coloring
- D. Yellow precipitate
- E. Blue coloring

119. According to the State Pharmacopoeia of Ukraine, an analytical chemist can determine sulfate admixtures in sodium tetraborate by the effect of white opalescence that results from its reaction with the following solution:

- A. Barium chloride
- B. Ammonium oxalate
- C. Magnesium sulfate
- D. Sodium sulfide
- E. Silver nitrate

120. A pharmacist prepares an infusion in proportion 1:400. Specify the herbal raw material used in this infusion:

- A. Thermopsis grass
- B. Motherwort grass
- C. Oak bark
- D. Althaea roots
- E. Camomile grass

121. A pharmacist prepares 100 ml of glucose solution. Specify the amount of Weibel's stabilizer necessary in this case:

- A. 5 ml
- B. 10 ml
- C. 15 ml
- D. 20 ml
- E. 2 ml

122. A pharmacist has dissolved a medicinal substance in the sterile purified water to make an eye ointment. Specify this medicinal substance:

- A. Pilocarpine hydrochloride
- B. Xeroform
- C. Menthol
- D. Basic bismuth nitrate
- E. Purified sulfur

123. An important indicator of business activity is profitability of a business. Specify the indices that can be used to measure the profitability:

- A. Profit/turnover
- B. Turnover/cost price
- C. Turnover/income
- D. Income/turnover
- E. Liquidity/solvency

124. A 60-year-old patient, who had suffered a myocardial infarction, was prescribed acetylsalicylic acid as an anti-aggregant. Specify the optimal daily dosage of acetylsalicylic acid for anti-aggregatory effect:

- A. 100 mg
- B. 200 mg
- C. 300 mg
- D. 400 mg
- E. 500 mg

125. A 25-year-old woman is in the third trimester of her pregnancy. During her regular examination, US detected a malformation in the fetus. Medical history of the patient shows that she was taking large doses of diazepam without prescription during her pregnancy. What type of side effect has occurred in this case?

- A. Teratogenic
- B. Embryotoxic
- C. Fetotoxic
- D. Carcinogenic
- E. Mutagenic

126. To identify cardiac glycosides there are usually three groups of color reactions being performed: for steroid nucleus, for lactonic ring, and for carbohydrate component. Specify the reaction for identification of butenolide ring:

- A. Legal's test
- B. Stahl's reaction
- C. Mayer's test
- D. Reaction of sublimation
- E. Dragendorff's test

127. A 43-year-old woman has come to a pharmacy with complaints of sharp headache in the occipital area, palpi-

tations, "visual snow" in her eyes, nausea; her BP is 180/110 mm Hg. These symptoms correspond with:

- A. Hypertensive crisis
- B. Migraine attack
- C. Exertional angina pectoris attack
- D. Cervical osteochondrosis
- E. Acute conjunctivitis

128. What fatty oil is nondrying due to its oleic acid glyceride content?

- A. *Ricini oleum*
- B. *Helianthi oleum*
- C. *Maydis oleum*
- D. *Cucurbitae oleum*
- E. *Lini oleum*

129. A 36-year-old woman with herpetic rash on her lips has come to a pharmacy. Recommend her a drug for topical treatment:

- A. Acyclovir
- B. Fluconazole
- C. Levofloxacin
- D. Metronidazole
- E. Amikacin

130. A woman with open tuberculosis is undergoing in-patient treatment in the tuberculosis clinic. What drug was prescribed by her physician for etiotropic treatment?

- A. Isoniazid
- B. Acyclovir
- C. Metronidazole
- D. Doxycycline hydrochloride
- E. Benzylpenicillin (Penicillin G)

131. A pharmaceutical company produces belladonna tincture. In the process of standardization, excessive content of active substances was detected. How can this situation be remedied?

- A. Dilute the tincture with extractant to normal concentration
- B. Precipitate excessive active substances
- C. Filter the tincture through adsorbent
- D. The tincture is a non-recoverable reject material
- E. This kind of deviation is not important

132. The phytochemical workshop of a factory produces liquid extracts. What extractants are used in this manufacturing process?

- A. Aqueous-alcoholic solutions
- B. Chloroform
- C. Ammonia solution
- D. Dichloroethane
- E. Water

133. A pharmaceutical company has divided its customers into groups based on their gender, age, and size of their families. What approach to market segmentation is the basis of this customer division?

- A. Demographic
- B. Geographic
- C. Socioeconomic
- D. Psychographic
- E. Behavioral

134. To decrease business risks, a pharmaceutical company decided to expand its activity and penetrate into new market (to open a fitness center). Name this process:

- A. Diversification
- B. Intensification
- C. Conglomeration
- D. Modernization
- E. Integration

135. A patient has been receiving palliative treatment with morphine hydrochloride for a week. Following that the patient demands continuation of this treatment. What phenomenon has occurred in this case?

- A. Dependence
- B. Tolerance
- C. Cumulation
- D. Potentiation
- E. Summation

136. A 65-year-old man with community-acquired pneumonia was prescribed antibiotic agent amikacin. It should be kept in mind, that amikacin has the following side-effect:

- A. Ototoxicity
- B. Red coloring of urine
- C. Vomiting
- D. Increased blood pressure
- E. Decreased blood pressure

137. Considering thermolability of most animal-derived injection preparations, they are sterilized by means of:

- A. Filtration through membrane
- B. Addition of buffer solutions
- C. High frequency current
- D. Autoclave chamber with high-pressure saturated steam
- E. Ultrasound

138. An analytical chemist conducts quantitative determination of ibuprofen (substance) by means of direct alkali-metry. The following solution will be an indicator in this case:

- A. Phenolphthalein
- B. Tropeolin 00
- C. Mordant black
- D. Potassium chromate
- E. Ammonium iron (III) sulfate

139. During anti-Helicobacter quadrotherapy patient's feces colored black. What drug could have caused this effect?

- A. Bismuth subcitrate
- B. Omeprazole
- C. Amoxicillin
- D. Clarithromycin
- E. Metronidazole

140. A patient receives heparin for acute myocardial infarction. On the third day the patient developed hematuria and subcutaneous hematomas. What medicine should be prescribed as an antidote in this case?

- A. Protamine sulfate
- B. Vicasol (Menadione)
- C. Streptokinase
- D. Clopidogrel
- E. Acetylsalicylic acid

141. A pharmacist approached the chief manager of the pharmacy with a request for pay raise. The chief manager turned down this request. What type of conflict is it?

- A. Interpersonal conflict
- B. Intrapersonal conflict
- C. Dysfunctional conflict
- D. Intergroup conflict
- E. Conflict between individual and group

142. An accountable person has received a sum of money from the pharmacy cash desk to buy a calculator. What document records the cash flow in such a transaction?

- A. Cash expense order
- B. Cash income order
- C. Invoice
- D. Receipt
- E. Remains unregistered documentarily

143. Hyoscyamine and scopolamine are typically contained in the plants of the following family:

- A. *Solanaceae*
- B. *Asteraceae*
- C. *Papaveraceae*
- D. *Apocynaceae*
- E. *Fabaceae*

144. A pharmaceutical company produces suppositories made from thermolabile medicinal substances. What method is used in their production?

- A. Pressing
- B. Steeping
- C. Pouring
- D. Rolling
- E. Dispersion

145. A pharmaceutical company produces liquid dosage forms. What principle is used in rotary pulsation apparatus to obtain an emulsion?

- A. Mechanical dispersion
- B. Ultrasonic dispersion
- C. Solubilization
- D. Coacervation
- E. Maceration

146. A pharmaceutical company produces soft dosage forms. What indicator should be measured additionally for the soft dosage forms that are intended for application on heavily damaged skin?

- A. Sterility
- B. pH
- C. Identification
- D. Microbiological purity
- E. Quantitative determination

147. A pharmaceutical company produces various medicines. Name the dosage form consisting of separate hard dry particles disintegrated to varying degree:

- A. Powders
- B. Tablets
- C. Suspensions
- D. Emulsions
- E. Dried extract

148. According to the State Pharmacopoeia of Ukraine, the herbal raw materi-

al used in production of plantaglucide should be tested by means of thin-layer chromatography. The resulting chromatogram will have a weak blue zone, which will indicate the presence of:

- A. Aucubin
- B. Acorone
- C. Acteoside
- D. Azulene
- E. Atropine

149. A 74-year-old man came to the pharmacy. He had been prescribed ampicillin for antibiotic treatment of dysenteric gastroenterocolitis. What group of drugs should be recommended for dysbiosis prevention in this case?

- A. Probiotics
- B. Antacids
- C. Enzymatic agents
- D. Sorbents
- E. Immunosuppressants

150. Where on the shop floor of a pharmacy should various nutritional supplements and health food be placed?

- A. On separate shelves and in separate shopwindows
- B. By their pharmacotherapy group
- C. By their application
- D. Alongside medicines
- E. By their Anatomical Therapeutic Chemical Classification

151. Product sales manager of a pharmaceutical company was tasked with sales program inspection and given 10 days to complete this task. The manager completed this task within 5 days and expects to be rewarded with a bonus. What theory of achievement motivation is based on expectation of a certain event?

- A. Vroom's expectancy theory
- B. Maslow's hierarchy of needs
- C. Herzberg's two-factor theory
- D. McClelland's theory of needs
- E. McGregor's Theory X and Theory Y

152. The management plans to open a new pharmacy in one of the local villages. Such activity can be identified as:

- A. Growth strategy
- B. Vertical integration
- C. Horizontal integration
- D. Conglomerate diversification
- E. Horizontal diversification

153. According to ecological survey, a certain pharmaceutical manufacturer holds the first place among the local "green" industries. What marketing concept is chosen by this manufacturer in relations with its customers?

- A. Socio-ethical marketing
- B. Product development
- C. Intensification of commercial effort
- D. Production development
- E. Integrated marketing

154. Publicly-owned "Isotope" factory is the only manufacturer of radiopharmaceuticals in Ukraine. What type of distribution is characteristic of radioactive drugs?

- A. Exclusive
- B. Selective
- C. Intensive
- D. Sample
- E. Bulk

155. A pharmaceutical company plans to introduce traditional herbal remedies to new markets. What marketing opportunity according to Ansoff Matrix was used by the company?

- A. Market development
- B. Market penetration
- C. Product development
- D. Diversification
- E. Consolidation

156. A 28-year-old woman came to a pharmacy complaining of constipation that developed after antacid treatment. What drug could be the cause of this symptom?

- A. Aluminium-containing drugs
- B. Magnesium-containing drugs
- C. Calcium carbonate
- D. Simethicone
- E. Ranitidine

157. What antacid can cause constipations, osteoporosis, and encephalopathy when taken for a long period of time?

- A. Aluminium hydroxide
- B. Sodium bicarbonate
- C. Calcium carbonate
- D. Sodium alginate
- E. Magnesium oxide

158. A 60-year-old man has come to a pharmacy with complaints of impaired twilight vision, dry sclera,

cracked and peeling skin. The dispensing chemist suspected hypovitaminosis and recommended the customer to take the following drug after consultation with the physician:

- A. Retinol acetate
- B. Tocopherol acetate
- C. Ergocalciferol
- D. Vicasol (Menadione)
- E. Ascorbic acid

159. In the process of drug identification, an analytical chemist of the State Inspection for Quality Control of Medicines performs ninhydrin test. What drug is being identified?

- A. Tyrosine
- B. Resorcin
- C. Nitrofurazone
- D. Sulfamethoxazole
- E. Retinol acetate

160. A pharmacy provides certain categories of ill persons with medicines free of charge or at a reduced price. What conditions allow free of charge supply of out-patients with necessary medicines?

- A. Diabetes mellitus
- B. Headache
- C. Cold
- D. Muscle pain
- E. Cuts and abrasions

161. Spectrophotometric analysis of anthracene derivatives contained in buckthorn bark is based on the following reaction:

- A. Production of phenolates with alkali-ammonia solution
- B. Oxidation of anthracene derivatives
- C. Anthraquinone reduction
- D. Salt precipitation
- E. Sublimation

162. A patient with arterial hypertension, who takes captopril, was prescribed a potassium-sparing diuretic, spironolactone. What complication can develop in the patient due to this combination of drugs?

- A. Hyperkalemia
- B. Hypocalcemia
- C. Hyponatremia
- D. Hypoglycemia
- E. Hypernatremia

163. A patient was prescribed an oral

antibiotic for treatment and an antacid to remove heartburn symptoms. If the drugs are taken simultaneously their interaction can result in the following:

- A. Antibiotic malabsorption
- B. Relative overdosage
- C. Inhibition of hepatic microsomal enzymes
- D. Mutual potentiation
- E. Acceleration of metabolism and excretion

164. Medicinal dyes should be stored in a special cabinet. Which of the listed medical products is a dye:

- A. Brilliant green
- B. Hydrogen peroxide
- C. Ethyl alcohol
- D. Glucose
- E. Ascorbic acid

165. Core tablets that are to be made into dragees must not have a flat shape. Why such requirement is necessary?

- A. To prevent them from adhesion to each other
- B. They are not durable enough
- C. To avoid prolonged contact with overlaying suspension
- D. To improve their appearance
- E. To speed up the process of applying the coating

166. A 63-year-old woman suffering from diabetic nephropathy with functional disturbance of the kidneys needs etiotropic treatment for focal pneumonia. What drug is **CONTRAINDICATED** in this case?

- A. Aminoglycosides
- B. Natural penicillins
- C. Synthetic penicillins
- D. Macrolides
- E. Combined penicillins

167. Specify the formula of extractant calculation in the process of creating a tincture:

- A. $V = V_{tincture} + m_{rawmaterial} \cdot K_{alcoholabsorption}$
- B. $m_{rawmaterial} = m_{endproduct} + m_{losses}$
- C. $E = \frac{m_{losses}}{m_{rawmaterial}} \cdot 100\%$
- D. $\mu = \frac{m_{endproduct}}{m_{rawmaterial}} \cdot 100\%$
- E. $V = V_{tincture} \cdot n + m_{rawmaterial} \cdot K_{alcoholabsorption}$

168. In the process of phytochemical

examination of buckthorn bark, the reaction with alkaline solution resulted in red coloring, which indicates the presence of the following:

- A. Anthracene derivatives
- B. Saponins
- C. Alkaloids
- D. Flavonoids
- E. Slime

169. *Atropa belladonna* grass extract is a component of compound antispasmodic drugs. Select such drug from the list:

- A. Bellasthesin
- B. Olimetinum
- C. Solutan
- D. Urolesan
- E. Herbogastrine

170. Buckthorn bark and its derivative drugs are used as laxatives in medicine. According to the State Pharmacopoeia of Ukraine, during chromatographic identification of buckthorn bark it is necessary to detect:

- A. Glucofrangulins
- B. Panaxosides
- C. Lanatosides
- D. Ginkgosides
- E. Purpurea glycosides

171. Name the optimal vehicle for soluble vaginal suppositories:

- A. Polyethylene oxide
- B. Cocoa butter
- C. Glycerine
- D. Fat
- E. Hard fat

172. Weibel's liquid is necessary to stabilize the solution of a certain substance. Name this substance:

- A. Glucose
- B. Novocaine
- C. Potassium chloride
- D. Sodium chloride
- E. Magnesium sulfate

173. The chief manager of a pharmacy designs its organizational structure and job descriptions for its employees. These arrangements belong to the following management method:

- A. Organizational
- B. Economic
- C. Legal
- D. Simulation
- E. Psychosocial

174. A pharmacist approached the chief manager of the pharmacy with a proposition to introduce an additional service for their customers - blood pressure measurement. What type of communication is it?

- A. Vertical ascending
- B. Vertical descending
- C. External
- D. Intra-level
- E. Horizontal

175. What tablet coating protects stomach from harmful influence of active ingredients?

- A. Intestinally absorbed
- B. Water-soluble
- C. Gastrically absorbed
- D. Fat-soluble
- E. -

176. To replenish its fixed assets, the pharmacy made a decision to arrange a credit with the trading bank. What document must be concluded in writing between the creditor and the debtor in this case?

- A. Credit contract
- B. Full material liability contract
- C. License
- D. Balance sheet
- E. Auditor's conclusion

177. A pharmacy supplies the surgical ward of a hospital. What document enables the dispensing chemist to supply the goods:

- A. Purchase order
- B. Product revaluation notice
- C. Report on the movement of packaging
- D. Consolidated register
- E. Receipt log book

178. A manager of a wholesale pharmaceutical company is responsible for relaying various tasks to the employees and supervises the fulfillment of assigned tasks. What management level corresponds with these duties?

- A. Technical
- B. Administrative
- C. Institutional
- D. Top-level
- E. Middle-level

179. A "Sunrise" pharmacy chain has changed the placement of medical products on its shelves and in the shop windows, to study what effect would this merchandising tactics have on the sales amount. What method of marketing research was used by this pharmacy chain?

- A. Experiment
- B. Panel
- C. Survey
- D. Observation
- E. -

180. A pharmaceutical company lowered its price for a certain drug due to strong competition and decreasing demand for this drug. What is the purpose of such price policy?

- A. To ensure business survival
- B. To maximize profits
- C. To create the image of high-quality medicine manufacturer
- D. To gain leadership due to high quality of manufactured medicines
- E. -

181. Reye syndrome (encephalopathy, fatty degeneration of liver) develops as a side effect in children suffering from fever of viral origin when they take the following medicine:

- A. Acetylsalicylic acid
- B. Celecoxib
- C. Ibuprofen
- D. Metamizole sodium
- E. Paracetamol

182. According to the law regulating labour remuneration, the businesses must establish their compensation plan in the following document:

- A. Collective agreement
- B. Contract of delivery
- C. Decree
- D. Statement
- E. Job description

183. What activity of a pharmaceutical company includes improvement of employees' working and living conditions, healthcare and medical insurance

and other means of social development?

- A. Social responsibility
- B. Commercial activity
- C. Financial activity
- D. Industrial activity
- E. Charity

184. Analysis of work environment of a pharmaceutical company has detected there the following organizational features: dynamism, flexibility of management structure, self-checking, and democratic communication. What type of adaptive organization structure is it?

- A. Organic
- B. Mechanistic
- C. Combined
- D. Informal
- E. -

185. What variable of the internal environment of the "Provisor" pharmacy can be described as the ways of transformation of component materials (medicinal agents "an gross") into end product (various dosage forms)?

- A. Technologies
- B. Mission
- C. Tasks
- D. Structure
- E. Human resources

186. According to the State Pharmacopoeia of Ukraine, phthalylsulfathiazole is quantitatively determined by means of alkalimetry in non-aqueous medium. The following substance is used as a solvent in this case:

- A. Dimethyl formamide
- B. Anhydrous acetic acid
- C. Ethyl alcohol
- D. Benzene
- E. Chloroform

187. When dispensing an antacid agent and ofloxacin in tablets, the dispensing chemist warned the customer that these drugs should be taken separately with 2-hour interval in between. Simultaneous taking of both drugs:

- A. Decreases ofloxacin absorption
- B. Increases ofloxacin absorption
- C. Increases antacid effectiveness
- D. Decreases antacid effectiveness
- E. Increases risk of dysbiosis

188. In the process of industrial producti-

on of rectal suppositories, certain substances insoluble both in water and suppository vehicle are introduced into this dosage form. Specify the optimal way to introduce these substances:

- A. Introduce the substances as a suspension
- B. Introduce the substances as an emulsion
- C. Dissolve the substances in the water heated to 45°C
- D. Melt a part of fatty vehicle and dissolve the substances there
- E. Melt all of fatty vehicle and dissolve the substances there

189. A 54-year-old hypertonic patient undergoing pharmacotherapy developed bronchial spasm. His physician considers it to be a therapy-induced complication caused by the drug that belongs to the following group:

- A. β -adrenergic blockers
- B. Calcium antagonists
- C. α -adrenergic blockers
- D. Ganglionic blockers
- E. Diuretics

190. Under the current legislation there is a certain list of controlled substances that require keeping of the special inventory log. Select the drug that belongs on this list:

- A. Phenobarbital
- B. Novocaine
- C. Solpadeine
- D. Digoxin
- E. Analgin (Metamizole)

191. *Helichrysum arenarium* herbal raw material has anti-inflammatory and choleric effect. What parts of this plant are harvested?

- A. Flowers
- B. Grass
- C. Rhizomes
- D. Fruits
- E. Roots

192. A control laboratory needs to analyze streptomycin powder for injections. According to the State Pharmacopoeia of Ukraine, to identify it sodium hydroxide is added into the dissolved powder, the resulting substance is heated, and then iron (III) chloride solution is added, which results in violet coloring of the substance. This test

is known as:

- A. Maltol test
- B. Ninhydrin test
- C. Vitali-Morin reaction
- D. Biuret test
- E. Thiochrome test

193. A patient with chronic heart failure, who has been taking cardiac glycosides, developed signs of glycoside intoxication. What antidote would be advisable in this case?

- A. Unithiol (DMPS)
- B. Vicasol (Menadione)
- C. Protamine
- D. Naloxone
- E. Methionine

194. For treatment of enteric infection a 36-year-old woman was prescribed a nitrofurantoin derivative that is poorly absorbed in the intestine and takes its effect along the intestinal tract. Name this drug:

- A. Nifuroxazide
- B. Furacilin (Nitrofurantoin)
- C. Nitroxoline
- D. Furadonin (Nitrofurantoin)
- E. Nalidixic acid

195. Bank is a financial mediator in pharmacy's payments. Payment of taxes withheld from the employees' salary into the budget requires the following document:

- A. Payment order
- B. Check payable in account
- C. Accounting form
- D. Cash register receipt
- E. Cash order

196. In the process of industrial production, certain adjuvants are included in the soft dosage forms as pH regulators. Name these adjuvants:

- A. Citric acid, sodium phosphate salts
- B. Paraffin, spermaceti
- C. Glycerine, dimethyl sulfoxide
- D. Sodium lauryl sulfate, tween emulsifiers
- E. Benzalkonium chloride, benzyl alcohol

197. What effect will anthracene derivatives have, if -OH- groups are located in both benzene rings of anthraquinone?

- A. Laxative
- B. Diuretic
- C. Litholytic
- D. Sedative
- E. Choleric

198. Polyethylene oxide base belongs to the following group:

- A. Hydrophilic
- B. Hydrophobic
- C. Amphiphilic
- D. Emulsion
- E. Fat

199. Choose the solvent necessary to prepare a concentrated solution of sodium bicarbonate in the pharmacy:

- A. Purified water
- B. Peach-kernel oil
- C. Chloroform
- D. Vaseline (petroleum jelly)
- E. Ethanol

200. In the process of pharmaceutical company entering an offshore market the traditions and customs, religion, system of values, and education level of the local population were analyzed. What factors of international marketing environment were researched?

- A. Sociocultural
- B. Political
- C. Economic
- D. Legal
- E. Technological

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List of abbreviations

A/G	Albumin/globulin ratio
A-ANON	Alcoholics anonymous
ACT	Abdominal computed tomography
ALT	Alanin aminotransferase
AP	Arterial (blood) pressure
AST	Aspartat aminotransferase
BP	Blood (arterial) pressure
BR	Breathing rate
bpm	Beats per minute
C.I.	Color Index
CBC	Complete blood count
CHF	Chronic heart failure
CT	Computer tomography
DIC	Disseminated intravascular coagulation
DCC	Doctoral controlling committee
DM-2	Non-Insulin dependent diabetes mellitus
DTP	Anti diphtheria-tetanus vaccine
ECG	Electrocardiogram
ESR	Erythrocyte sedimentation rate
FC	Function class
FEGDS	Fibro-esphago-gastro-duodenoscopy
Gy	Gray
GIT	Gastrointestinal tract
Hb	Hemoglobin
HbA1c	Glycosylated hemoglobin
Hct, Ht	Hematocrit
HDL	High-density lipoproteins
IDDM	Insulin dependent diabetes mellitus
IHD	Ischemic heart disease
IU	International unit
MSEC	Medical and sanitary expert committee
NIDDM	Non-Insulin dependent diabetes mellitus
pCO ₂	CO ₂ partial pressure
pO ₂	O ₂ partial pressure
Pm	Per minute
Ps	Pulse rate
R	Roentgen
RBC	Red blood count
Rh	Rhesus
RR	Respiratory rate
S1 (S ₁)	Heart sound 1
S2 (S ₂)	Heart sound 2
TU	Tuberculin unit
U	Unit
USI	Ultrasound investigation
V/f	Vision field
WBC	White blood count
X-ray	Roentgenogram