

**MINISTRY OF PUBLIC HEALTH OF UKRAINE**

**Department of human resources policy, education and science**

**Testing Board**

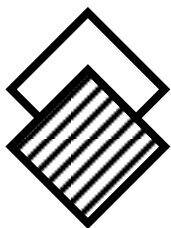
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**Test items for licensing examination**

**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.

**Approved by Ministry of Public Health of Ukraine as examination and teaching publication based on expert conclusions (Orders of MPH of Ukraine of 14.08.1998 №251, of 27.12.1999 №303, of 16.10.2002 №374, of 16.04.2003 № 239, of 29.05.2003 №233).**

1. A pharmacist has 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 pharmacy prepared a solution of macromolecular substance with limited swelling capacity. What solution was labelled "*warm up before use*"?

- A. Gelatin
- B. Trypsin
- C. Pepsin
- D. Methyl cellulose
- E. Pancreatin

3. A dispensing chemist can recommend a drug made from seeds of *Aesculus hippocastanum* to be taken as a veintonic and anti-thrombotic agent to treat venous congestion and veins dilatation of lower extremities. This drug is:

- A. Aescusan
- B. Phytolysin
- C. Flamin
- D. Marelin
- E. Ajmaline

4. Specify the normal spoilage ratio for toxic drugs, which should be taken into account by an inventory committee during stock-taking.

- A. 0,95%
- B. 3,0%
- C. 7,6%
- D. No norm defined
- E. 1,9%

5. A schedule of sanitation actions in pharmacies is regulated by the relevant normative documents. Cleaning day at a pharmacy must be scheduled for at least 1 time:

- A. In a month
- B. In a week
- C. In 3 days
- D. In 10 days
- E. In 5 days

6. Specify which of the alkaloids given below will react positively to xanthenes (murexide test):

- A. Caffeine
- B. Atropine sulfate
- C. Papaverine hydrochloride
- D. Quinine sulfate
- E. Ephedrine hydrochloride

7. Point out the type of labour division structure of management personnel:

- A. Horizontal
- B. Institutional
- C. Technical
- D. Administrative
- E. Upper

8. Losartan is contraindicated for treatment of arterial hypertension in case of:

- A. Pregnancy
- B. Hyperglycemia
- C. Urine acid diathesis
- D. Hyperlipidemia
- E. Hypokalemia

9. Which of the drugs listed below is used for thrombolytic therapy of myocardial infarction?

- A. Streptokinase
- B. Heparinum
- C. Phenylinum
- D. Ticlopidine
- E. Acetylsalicylic acid

10. An organisation has been founded to carry out several interconnected purposes. What type of organisation is it?

- A.** Complex
- B.** Private
- C.** Legal
- D.** Budget
- E.** Small

**11.** Representatives of pharmaceutical companies have met to discuss urgent issues of their further work. This meeting belongs to the following type of organizational groups (teams):

- A.** Informal groups
- B.** Staff
- C.** Managed groups
- D.** Formal groups
- E.** Role groups

**12.** Bellasthesin is a spasmolytic drug used in treatment of gastrointestinal diseases. What substance contained in *Atropa Belladonna* provides such an effect of the drug?

- A.** Hyoscyamine
- B.** Morphine
- C.** Codeine
- D.** Reserpine
- E.** Caffeine

**13.** Stinging nettle (*Urtica dioica*) leaves are mostly used as a hemostatic in tinctures and liquid extract to treat lung, intestinal, and uterine hemorrhages. What bioactive substance provides hemostatic effect?

- A.** Vitamin K
- B.** Beta-carotene
- C.** Rutin
- D.** Reserpine
- E.** Digitoxin

**14.** Vitali-Morin's reaction is used to identify tropane alkaloids in raw herbal material. Name the alkaloid that can be detected by this specific reaction.

- A.** Scopolamine
- B.** Codeine
- C.** Morphine
- D.** Platyphyllin
- E.** Papaverine

**15.** Coumarins are natural compounds with their structure based on an benzo-alpha-pyrone skeleton. What reaction allows to detect this group of compounds?

- A.** Lactone test
- B.** Cyanide test
- C.** Iron (III) chloride reaction
- D.** Wilson's reaction
- E.** Trim-Hill reagent

**16.** The following raw herbal material was delivered for analysis: capitulum inflorescence is semicircular or conic in shape; no pedicles or only their remains; floral disk is naked, conic, hollow. Semiflorets are white, disk florets are yellow, involucre are yellow-green. The smell is specific, aromatic. The taste is bitter-spicy. What raw herbal material is it?

- A.** Flores Chamomillae
- B.** Flores Arnicae
- C.** Flores Calendulae
- D.** Flores Helichrysi arenarii
- E.** Flores Millefolii

**17.** Standard raw herbal material of lily-of-the-valley is obtained by drying it at a temperature of 50-60°C in order to prevent the possibility of the following biochemical process:

- A.** Enzymatic hydrolysis of cardiac glycosides
- B.** Oxidation of phenolic compounds
- C.** Volatilization of essential oils
- D.** Oxidation of resins
- E.** Oxidation of terpenoids

**18.** A patient with heart failure induced by long-term coronary vessel disorder can be administered a drug produced out of the following raw herbal material:

- A. Hawthorn berries
- B. Calendula flowers
- C. Ginseng roots
- D. Aralia roots
- E. Berberis roots

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

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

20. Specify the pricing strategy of international market, which foresees establishing relatively low prices to work up the developed countries market.

- A. Penetration strategy
- B. Premium pricing strategy
- C. Differential pricing strategy
- D. Price skimming strategy
- E. Price leveling strategy

21. Point out the type of group poll that foresees a single survey of several experts to discuss a certain problem.

- A. Focus group
- B. Omnibus
- C. Delphi
- D. Panel
- E. Interview

22. Name the stage of drug life cycle that is characterized by maximal sales and profit, and reminder advertising.

- A. Maturity and saturation
- B. Growth
- C. Decline
- D. Introduction
- E. Market exit

23. The following fruit was received for analysis: succulent drupes circular or elongated-ellipsoid in

shape, 4-12 mm in length. The colour of fruit varies from yellow to dark orange. The smell is faint. The taste is sour-sweet. What plant is it?

- A. *Hippophae rhamnoides*
- B. *Ammi majus*
- C. *Aronia melanocarpa*
- D. *Vaccinium myrtillus*
- E. *Coriandrum sativum*

24. Cumulating drugs - Digitoxin and Cordigitum - are used to treat chronic cardiac insufficiency. What plant is used as a raw material to produce them?

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

25. Business trip can be assigned to employees only with their consent, if these employees are:

- A. Women with children from 3 to 14 years of age
- B. Women with children from 1 to 3 years of age
- C. Women with children less than 1 year old
- D. Any employee
- E. Women with two children

26. 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 the drug molecule can be detected by these reagents?

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

27. 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

28. A factory workshop producing suspensions and emulsions is developing manufacture of new drugs. What mechanisms can be used for ultrasound production of drugs?

- A. Liquid whistle, magnetostrictive source
- B. Dismembrator, electrical impulse plasmolyzer
- C. Disintegrator, liquid whistle
- D. Rotor-pulsation apparatus, dismembrator
- E. Centrifugal mixer with rotating housing

29. A pharmaceutical factory workshop 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

30. What preparation is the specific antidote in case of intoxication with iron preparations?

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

31. A pharmacist has a labour dispute with the pharmacy administration about rescheduling his annual vacation leave. The employee can appeal against the decision of the pharmacy administration to the following body:

- A. Labour disputes commission (LDC)
- B. Trade union committee
- C. Highest management bodies of pharmaceutical service at the regional level
- D. MoH of Ukraine
- E. Commercial court

32. A pharmacist has prepared solution of ethacrydine lactate. Name the peculiarity of this substance dissolution.

- 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

33. A pharmacy received a prescription for an extemporaneous compounded drug. Specify the document that is used to set the price for such drug:

- A. Retail price list for drugs
- B. Inventory report
- C. Certificate of quality
- D. Cash receipt voucher
- E. Certificate of analysis

34. Medications *Passit* and *Novopassit* are used as tranquilizing, sedative and mild soporific agents. These medications are produced from the following grass:

- A. Purple passionflower
- B. Three-lobe beggarticks
- C. Garden sage
- D. Elecampane
- E. Lesser periwinkle

35. Thymol is the main component of *Thymus serpyllum* essential oil. What is the time of harvesting for this raw herbal material?

- A. Peak florescence period
- B. In autumn after above-ground part of a plant dies-off
- C. During peak of sap movement
- D. During fruiting
- E. Beginning of vegetation

36. An essential oil is a component of such compound drugs as: Inhalypt, Corvalol, Pinosol, Corvaldin, tooth drops. What raw herbal material is a source of this essential oil?

- A. Folia Menthae piperitae
- B. Folia Betulae
- C. Folia Urticae
- D. Folia Agavae
- E. Folia Absinthii

37. When developing the system of marketing communications, a company should consider the characteristics of each market promotion means applied for a drug. Which of the following characteristics is typical for advertising?

- A. Depersonalization (non-personal communication)
- B. Non-mass communication
- C. Two-way communication
- D. All answers are correct
- E. There is no correct answer

38. A pharmaceutical factory produces suspensions and emulsions. Specify the equipment that is used for dispersion and mixing in liquid medium:

- A. Rotor-pulsation apparatus, colloid mixers
- B. Drum mixers
- C. Oscillating mixers
- D. Anchor mixers
- E. Gate mixers

39. What reagent is used to detect calcium admixture in medicinal substances?

- A. Ammonium oxalate
- B. Barium chloride
- C. Potassium carbonate
- D. Silver nitrate
- E. Sodium sulfite

40. A pharmacy received a prescription for vaseline-lanoline based eye ointment. What proportion of vaseline to lanoline should be chosen by a pharmacist to make the ointment base?

- A. 9:1
- B. 1:1
- C. 5:1
- D. 8:2
- E. 7:3

41. A pharmacist has made an althaea root tincture. What proportion of raw herbal material to extractant was chosen by the pharmacist to make this tincture?

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

42. Collective labour agreement is concluded by a trade union committee with an enterprise owner on behalf of the workforce. Any collective agreement is worked out in written form. Which article of the Labor Code regulates the duration of the collective agreement?

- A. 17
- B. 36
- C. 38
- D. 40
- E. 41

43. To stimulate sales 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. -

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

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

45. 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

46. A pharmacist prepares a solution for injections that must be stabilized with 0,1M of hydrochloric acid solution. What solution is to be prepared?

- A. Novocaine
- B. Calcium chloride
- C. Potassium chloride
- D. Hexamethylenetetramine
- E. Sodium benzoate

47. Paracetamol substance has been sent for analysis. Reaction with the solution of iron (III) chloride resulted in blue-purple colouring. This indicates the presence of:

- A. Phenolic hydroxyl
- B. Aldehyde group
- C. Keto group
- D. Ester group
- E. Alcoholic hydroxyl

48. Production of tablets requires stage-to-stage quality control. What devices are used to determine the particle size distribution (fraction) of granules?

- A. Standard set of sieves
- B. Various vibrosieves
- C. Friabilators
- D. Laboratory identifiers
- E. Microscope

49. 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

50. Preparations of sorrel roots can have both laxative and astringent effect. Such an effect results from 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

51. Theory of management currently specifies the four most important approaches to the management. Select the approach that **IS NOT** applied in the management theory:



- A. Structured
- B. Process approach
- C. Systemic
- D. Situational
- E. Different schools dedication approach

**52.** A pharmacist worked on a holiday and his work hours were within the norm for the current month. The employee would be entitled to be paid:

- A. Fixed salary + one daily rate
- B. Fixed salary + double daily rate
- C. According to the standard procedure as for a normal working day
- D. There would be no extra pay
- E. Single piecework rate

**53.** 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

**54.** 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

**55.** Chloride of lime is identified by calcium cations after boiling with acetic acid in order to eliminate acti-

ve chlorine. What reagent is used?

- A. Ammonium oxalate
- B. Magnesium sulfate
- C. Potassium chloride
- D. Sodium nitrite
- E. Ammonium molybdate

**56.** A set of values, traditions, behavioral norms and views inherent to an organisation characterize its following feature:

- A. Culture
- B. Success
- C. Profitability
- D. Sapitalization level
- E. Self-development capability

**57.** Products differentiation (advantages) pursued by a pharmaceutical company with the aim to surpass its competitors in satisfying customers's demands is called:

- A. Product leadership
- B. Benchmarking
- C. Porter's generic strategies model
- D. Penetration strategy
- E. Concentration strategy

**58.** A patient bought mint leaves at a pharmacy. What recommendations regarding infusion of this raw herbal material must be given by a pharmacist?

- A. The infusion is to be prepared in a tightly closed vessel
- B. The infusion is to be prepared on 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

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

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

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

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

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. An ampoule workshop produces injection solutions. What filters are used for sterile filtering of injection solutions?

- A. Membrane and depth filters
- B. Druck (pressure) filter
- C. Nutsche (vacuum) filter
- D. Filter designed at the Kharkiv Chemico-Pharmaceutical Research Institute
- E. Pressure leaf filter

63. Injection solutions of weak acids and strong bases must be stabilized. What stabilizers are used for such solutions?

- A. 0,1 M sodium hydroxide solution
- B. 0,1 M hydrochloric acid solution
- C. Sodium edetate (Disodium EDTA, Trilon B)
- D. Ascorbic acid
- E. Butyloxytoluene

64. A pharmacy makes infusion solutions. Specify the solution that restores water-salt metabolism.

- A. Ringer-Locke's solution
- B. Polyglucinum
- C. Neohaemodesum
- D. Hydrolysine
- E. Dextran

65. 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

66. Yellow gentian contains bitter glycosides. Raw material of this plant is recommended for production of drugs with the following effect:

- A. Stimulates appetite
- B. Tonic
- C. Diuretic
- D. Hepatoprotective
- E. Venotonic

67. A pharmacy received a prescription for tincture. What raw herbal material can be used to make this dosage form?

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

68. A retail pharmacy has been purchasing goods within an accounting period. What changes to the balance will result from these business transactions?

- A.** Increase in assets and liabilities
- B.** Decrease in assets and liabilities
- C.** Changes will be caused to the assets only
- D.** Changes will be caused to the liabilities only
- E.** -

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

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

**70.** 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

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

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

**72.** During the analysis of diethyl ether (Aether medicinales) you can determine presence of aldehydes as a specific admixture. Which of the following reagents can be used for determining presence of aldehyde admixtures?

- A.** Potassium tetraiodomercurate alkaline
- B.** Phenolphthalein
- C.** Iron (III) chloride
- D.** Acetic acid
- E.** Potassium sulfate

**73.** A pharmacist prepared a drug according to the following prescription:

*Rp.: Streptocidi*

*Dermatoli ana 1,0*

*Lanolini*

*Vaselini ana 5,0*

*M.D.S.: Apply to the affected skin.*

Specify the type of disperse system:

- A.** Suspension ointment
- B.** Solution ointment
- C.** Hydrophilic ointment
- D.** Combined ointment
- E.** Extraction ointment

**74.** Efficiency of aerosol therapy is to 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

**75.** A pharmacist makes powders with papaverine hydrochloride. What hand scales should be used for weighing out 0,05 g of substance?

- A. BP 1,0 (balance beam scale, capacity 1,0)
- B. BP 5,0 (balance beam scale, capacity 5,0)
- C. BP 20,0 (balance beam scale, capacity 20,0)
- D. BP 10,0 (balance beam scale, capacity 10,0)
- E. BP 2,0 (balance beam scale, capacity 2,0)

76. Raw herbal material with the following features was delivered to a laboratory for analysis: fine flat glossy egg-shaped seeds (one end is sharp, other - rounded). Seed surface is smooth, vary in colour from pale yellow to brown, has pale yellow raphe. No smell is detected. The taste is slimy and oily. Name this raw herbal material.

- A. Flax seeds
- B. Pumpkin seeds
- C. Plantago psyllium seeds
- D. Strophanthus seeds
- E. Peanut seeds

77. Activated carbon is used in production of injection solutions for:

- A. Purification
- B. Buffer system creation
- C. Antioxidant properties increasing
- D. Chemical resistance of ampoules' glass increasing
- E. Ampoules residual stress relaxation

78. Intoxication cases were observed during harvesting raw herbal material containing potent and toxic substances. What raw herbal material SHOULD NOT be harvested by underage and pregnant?

- A. Celandine grass
- B. Walnut leaves
- C. Valerian rootstock
- D. Buckthorn bark
- E. Blueberries

79. Which of the listed antibacterial drugs **should NOT be admini-**

**stered** to a patient with diabetes mellitus type II being treated with glibenclamid?

- A. Co-trimoxazolom
- B. Midecamycin
- C. Gentamycinum
- D. Benzylpenicillinum
- E. Doxycycline

80. Plantaglucide is used to treat peptic ulcer disease of stomach and duodenum with normal acidity and hypoacidity. This drug is obtained from the following plant:

- A. Plantago major
- B. Plantago psyllium
- C. Plantago media
- D. Plantago stepposa
- E. Plantago lanceolata

81. Drug A is in the stage of market saturation. In order to push up intensive sales, management of the manufacturing company decided to use the following type of advertising:

- A. Aggressive
- B. Informational
- C. Personal sales
- D. Sales promotion
- E. Public relations

82. Which of the penicillins given below can be identified by reaction with ninhydrin?

- A. Ampicillin
- B. Benzylpenicillin (penicillin G)
- C. Phenoxymethylpenicillin (penicillin V)
- D. Oxacillin
- E. Carbenicillin

83. Preparations of common valerian are used in medical practice as sedative drugs. The main feature that allows to distinguish valerian from the admixtures is:

- A. Specific odor
- B. No specific odor
- C. Specific taste
- D. Specific color of raw materials
- E. Stems remains

84. An analytical chemist determines the admixture of sulphates in 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

85. 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. A market niche
- B. An unattractive segment
- C. A market share
- D. A segment requiring further research
- E. A market door

86. Calcium cations present in drugs can be detected with the following solution:

- A. Ammonium oxalate
- B. Silver nitrate
- C. Potassium permanganate
- D. Sodium nitrite
- E. Sodium chloride

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

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

88. An analyst of the State Inspectorate for Quality Control identifies "Sulfametoxazol" by adding solutions of hydrochloric acid,

sodium nitrite and beta-naphthol to the preparation. As a result intense red colouring is observed. What functional group is identified by this reaction?

- A. Primary aromatic amino group
- B. Secondary aromatic amino group
- C. Sulpho group
- D. Carboxyl group
- E. Aldehyde group

89. Pharmaceutical analyst working at the laboratory of the State Inspectorate for Quality Control of Medicines identifies the drug substance "Glucose anhydrous" with copper-tartrate solution (Fehling's reagent). What is the colour of produced precipitate?

- A. Red
- B. Blue
- C. Black
- D. Purple
- E. White

90. Specify the indicator which measures total contribution of various solutes to osmotic pressure of a solution:

- A. Osmolality
- B. Isohydricity
- C. Isotonicity
- D. Isoviscosity
- E. Apyrogenicity

91. When setting up a joint-stock company the founders discussed the issues of financial liability. What is the liability of the shareholders in a joint-stock company?

- A. Limited to the value of their shares
- B. Limited to the double amount of deposits
- C. Limited to the contributions to the statutory fund and their property
- D. Limited to the amount of deposits
- E. Unlimited and solidary

92. A pharmacy opens a bank account to store funds and conduct

ongoing business transactions. What kind of account should be opened?

- A. Current
- B. Provisional
- C. Deposit
- D. Letter of credit
- E. Investment

**93.** Specify the reaction to identify ester-type drugs, which is required by the regulations of 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. Formation of taylorhin

**94.** Streptocide, sulfacyl sodium, norsulfazole or sulfadimezinum can be identified by the reaction forming the following substance:

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

**95.** A pharmacy makes bulk purchases of health and hygiene products. An agent works under a contract with a manufacturer and operates on his account. The agent may be given exclusive right to sell goods in certain regions. Specify this agent:

- A. Wholesale agent
- B. Consignee
- C. Commission agent
- D. Broker
- E. Dealer

**96.** A pharmaceutical company has made a decision to expand its activities. The process of the company's activity expansion by penetration into new fields of the branch is called:

- A. Diversification
- B. Segmentation
- C. Conglomeration
- D. Integration
- E. Centralization

**97.** 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

**98.** 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

**99.** An analytical laboratory received "Adrenalini tartras" substance for analysis. According to the requirements of the Ukrainian State Pharmacopoeia, quantitative analysis of this substance can be carried out by the method of:

- A. Acidimetry in non-aqueous medium
- B. Acidimetry in aqueous medium
- C. Iodometry
- D. Nitritometry
- E. Bromatometry

**100.** Quality of dried extracts is assessed according to several criteria. Specify the highest acceptable amount of moisture in dried extracts according to the State Pharmacopoeia of Ukraine.

- A. 5%
- B. 25%
- C. 20%
- D. 75%
- E. 95%

**101.** What is the function of anhydrous lanolin in the suppository mass used for suppositories made by hand rolling?

- A. Plasticizer
- B. Solvent
- C. Preservative
- D. Solubilizer
- E. Emollient

**102.** The basic structure of steroid hormones is hydrocarbon skeleton - cyclopentane perhydrophenanthrene. What natural compound is used for testosterone propionate production?

- A. Cholesterol
- B. Indole
- C. Naphthalene
- D. Phenanthrene
- E. Anthracene

**103.** A dispensing chemist was addressed by a patient with the prescription of acetylsalicylic acid as antiaggregant. What daily dosage in grams should be recommended for him to take on a regular basis?

- A. 0,1—0,3
- B. 0,5-1,0
- C. 1,0-2,0
- D. 2,0-3,0
- E. Over 4,0

**104.** A patient with arterial hypertension and chronic bronchitis suddenly developed dry cough and dyspnea; his body temperature remained without changes. It is known that the patient takes captopril. This phenomenon can be explained by increased synthesis of:

- A. Bradykinin
- B. Angiotensin I
- C. Renin
- D. Aldosterone
- E. Natriuretic peptide

**105.** Preparations containing cardio-steroids are produced out of the following raw herbal material:

- A. *Herba Convallariae*
- B. *Cortex Quercus*
- C. *Radix Taraxaci*
- D. *Folia Ficus Caricae*
- E. *Folia Sennae*

**106.** A pharmacist has prepared a solution of menthol oil. Specify the dissolution temperature of the active substance:

- A. 40-50°C
- B. 60-70°C
- C. 30-40°C
- D. 70-80°C
- E. 20-30°C

**107.** 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 socioeconomic and scientific-and-technical projects. This is the definition of the following concept:

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

**108.** Admixtures can be accidentally included in raw herbal material in the process of 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

**109.** A pharmaceutical enterprise produces neogalenic preparations. What preparation is produced by the Soxhlet circulation apparatus?

- A. Adonisidum
- B. Digoxin
- C. Corglyconum
- D. Lantosidum
- E. Celanidum

**110.** The 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

**111.** When a pharmacist was serving a customer who ordered a nonprescription drug he realized that the patient did not apprehend verbal information. Name the communicative barriers that arise when words or symbols may have different meanings for information sender and recipient:

- A. Semantic barriers
- B. Neglect of facts
- C. Nonverbal barriers
- D. Failure to understand the importance of information
- E. Stereotype mentation

**112.** A pharmacist should make 200 ml of 3% sodium bicarbonate solution for injections. What are the specifics of making this solution?

- A. Vial should be filled to 2/3 of its volume; sterilization at 120 0C for 12 minutes
- B. No sterilization
- C. Dissolve by heating; sterilization at 120 0C for 12 minutes
- D. Use stabilizing agent
- E. Use water free of redox substances

**113.** What technology should be chosen by a pharmacist to make a li-

quid dosage form, if it contains calcium gluconate?

- A. Dissolve it in hot solvent or heat it up to full dissolution
- B. First grind it to powder when it is dry or with small amount of solvent added
- C. Dissolve in water free of redox substances
- D. Add equal amount of sodium chloride
- E. Dissolve in alkaline medium

**114.** Concentrated solutions CANNOT be used in mixture-making if:

- A. Aromatic water is solvent
- B. Purified water is solvent
- C. Mixture contains a potent agent
- D. Mixture contains syrups
- E. Mixture contains tinctures

**115.** Tyndallization is used at a pharmaceutical factory as one of sterilization methods for thermolabile substances. What is the essence of this method?

- A. Triple heating of solution to 40-60 0C with 24-hour-long intervals in between for thermostating
- B. Autoclaving at 119-121 0C with pressure at 1,0-1,1 atm
- C. Sterilization with flowing steam at 100 0C
- D. Sterilization with dry heat at 180-200 0C for a lengthy period of time
- E. Sterilization with high-frequency and microwave frequency current

**116.** What final document is used for preparation of a report on the discrepancies revealed in the course of inventory taking at a pharmacy?

- A. Act on inventory results
- B. Inventory item description
- C. Checklist
- D. Commercial report
- E. Invoice

**117.** Select the reductant required for



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

**118.** Choose the substance that is a tropane-derived alkaloid:

- A. Cocaine
- B. Caffeine
- C. Strychnine
- D. Pilocarpine
- E. Platyphyllin

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

- A. Glucose
- B. Atropine sulfate
- C. Papaverine hydrochloride
- D. Scopolamine hydrobromide
- E. Platyphyllini hydrotartras

**120.** A pharmacy received a prescription for external use powder containing a substance difficult to pulverize. What liquid can be used by a pharmacist to disperse this substance?

- A. Ethyl alcohol
- B. Purified water
- C. Water for injections
- D. Dimethyl sulfoxide
- E. Isopropyl alcohol

**121.** Specify the amount of raw herbal material necessary to make a dosage form according to the following prescription: Take 200 ml of motherwort herb solution. Dispense. Prescribed dosage is 1 tablespoon 3 times a day.

- A. 20,0
- B. 10,0
- C. 1,0
- D. 5,0
- E. 4,0

**122.** Which of the liquids given below should be measured by volume in making liquid dosage forms?

- A. 20% solution of sodium bromide
- B. Vaseline oil
- C. Diethyl ether
- D. Eucalyptus oil
- E. Glycerine

**123.** A pharmacy received prescriptions for compound powders containing colouring agent. Which of powder components given below is a colouring agent?

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

**124.** 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

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

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

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

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

**127.** Complexometric titration (chelation) allows to determine quantitative content of:

- A. Calcium lactate
- B. Sodium citrate
- C. Potassium iodide
- D. Sodium thiosulfate
- E. Potassium chloride

**128.** A patient suffers from peptic ulcer disease. In the process of combined pharmacotherapy his feces became black. Name the drug that could be the cause of this.

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

**129.** A patient suffering from bronchial asthma was diagnosed with essential hypertension. What anti-hypertensive drug is contraindicated for this patient?

- A. Propranolol
- B. Captopril
- C. Amlodipine
- D. Hypothiazid (Hydrochlorothiazide)
- E. Verapamil

**130.** 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

**131.** A 57-year-old patient is diagnosed with rheumatoid arthritis. Anamnesis states peptic ulcer disease. What nonsteroidal anti-inflammatory drug can be recommended for this patient?

- A. Celecoxib
- B. Diclofenac
- C. Aspirin
- D. Indometacin
- E. Mefenamic acid

**132.** A patient suffering from moderately severe pneumonia was prescribed ceftriaxonum once a day. Prescription of ceftriaxonum once a day is due to the fact that the drug:

- A. Is slowly eliminated from the body
- B. Has bactericidal effect
- C. Is pluripotential
- D. Accumulates in the lungs
- E. Is poorly absorbed from the injection site

**133.** According to the requirements of the State Pharmacopoeia of Ukraine (Addendum 1) a pharmacy analyst has to apply the following method for quantitative analysis of potassium iodide:

- A. Iodometry
- B. Complexometry
- C. Acidimetry
- D. Alkalimetry
- E. Nitritometry

**134.** A pharmacy received a prescription for an alcohol solution of methylene blue with unspecified alcohol concentration. In this case

a pharmacist must use ethyl alcohol of the following concentration:

- A. 60%
- B. 90%
- C. 70%
- D. 96%
- E. 40%

**135.** Ampoule workshop of a pharmaceutical factory produces procaine hydrochloride solution. This solution is stabilized by adding:

- A. 0,1 mol/l of hydrochloric acid solution
- B. 0,1 mol/l of sodium hydroxide solution
- C. 0,1 mol/l of sodium hydrogen carbonate solution
- D. 20,0 of sodium hydrogen carbonate
- E. 1,5 g of amino-propylene glycol

**136.** What stage of drug life cycle is characterized by quick increase of its sales amount and customers' recognition?

- A. Growth
- B. Introduction
- C. Maturity
- D. Decline
- E. Saturation

**137.** Prescriptions for controlled drugs dispensed under the reimbursement program (except for narcotic and psychotropic preparations in substance) are issued on the following prescription form:

- A. №1 in duplicate
- B. №1, single copy
- C. №1 and №3
- D. №3 in duplicate
- E. №3, single copy

**138.** Log books of stock-taking records are kept in a pharmacy for:

- A. 10 years
- B. 7 years
- C. 5 years
- D. 3 years
- E. 2 years

**139.** What principle of goods and expenses accounting requires presenting results of business transactions within the same reporting period when the transaction occurs?

- A. Accrual
- B. Matching
- C. Periodicity
- D. Autonomy
- E. Continuity

**140.** 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

**141.** Who is responsible for reception of goods and medical products with simultaneous incoming quality control?

- A. Authorized representative
- B. Supplier pharmacist
- C. Pharmacist
- D. Head of pharmacy
- E. Analyst

**142.** A pharmaceutical factory produces herbal juice out of fresh raw herbal 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

**143.** Cash transactions at a pharmacy are recorded in the cashbook. Which of the following cash transactions IS NOT a receipt transaction?

- A. Issuing cash to be accounted for
- B. Recognizing cash receipts from sales at a pharmacy
- C. Recognizing cash receipts from sales at pharmacy outlets and kiosks
- D. Return of unused disbursement funds
- E. Recognizing accrued salaries and advance payable

**144.** Which of the following diuretics **SHOULD NOT** be administered to patients with impaired hearing?

- A. Furosemide
- B. Spironolactone
- C. Clopamide
- D. Indapamide
- E. Chlorthalidone

**145.** A patient, who has been taking acetylsalicylic acid, has developed hemorrhages of mucous membranes. This phenomenon is associated with:

- A. Inhibition of prothrombin synthesis
- B. Increased absorption in gastrointestinal tract
- C. Decreased absorption in gastrointestinal tract
- D. Disorder of protein binding
- E. Changed volume of distribution

**146.** Simultaneous use of paracetamol and acetylcysteine causes:

- A. Reduction of paracetamol hepatotoxicity
- B. Reduction of anti-inflammatory action of paracetamol
- C. Inhibition of paracetamol absorption
- D. Increase of mucolytic action of acetylcysteine
- E. Increase of paracetamol nephrotoxicity

**147.** Simultaneous use of gentamicin

and acyclovir tablets increases the risk of:

- A. Nephrotoxicity
- B. Hepatotoxicity
- C. Cardiotoxicity
- D. Neurotoxicity
- E. Allergic reactions

**148.** Simultaneous use of doxycycline hydrochloride and oral contraceptive causes:

- A. Reduction of oral contraceptives effectiveness
- B. Increase of oral contraceptives effectiveness
- C. Increase of antibacterial effect of doxycycline
- D. Reduction of antibacterial effect of doxycycline
- E. -

**149.** In case of simultaneous use of metronidazole and oral anticoagulants derived from coumarin patients must be warned about:

- A. Potentiation of anticoagulants effect and risk of bleeding
- B. Reduction of anticoagulants effect
- C. Potentiation of metronidazole effect
- D. Reduction of metronidazole effect
- E. Higher neurotoxicity

**150.** Apart from goods sales, there are other business transactions that can be characterized as goods disposal. Which of the following business transactions reduces stock at pharmacies?

- A. Disposal of products for business needs
- B. Reclassifying other supplies as goods
- C. Posting oversupply
- D. Revaluation for packing and laboratory work
- E. Posting glassware

**151.** Phenobarbital drug has a sedative, soporific and anti-epileptic effect. What is its international nonpropri-

etary name?

- A. Luminal
- B. Nitrofurazone
- C. Chloramphenicol
- D. Diazepam
- E. Salol

**152.** A 70-year-old patient with stenocardia claims that the pharmacy sold him a drug that relieved an attack of stenocardia but instead caused an acute bursting headache. What antihypertensive drug can be characterized by such a side effect?

- A. Nitrosorbid
- B. Amlodipine
- C. Nifedipine
- D. Trimetazidine
- E. Metoprolol

**153.** Commercial and financial activity of a pharmacy involves using returnable packaging. Which of the following containers are returned to a supplier?

- A. Metal cylinders
- B. Packaging materials
- C. Paper boxes
- D. Glass-stoppered bottles
- E. Glassware

**154.** To make a liquid №2 by Demyanovych prescription hydrochloric acid should be taken in the following concentration:

- A. 24,8 – 25,2%
- B. 0,83%
- C. 98%
- D. 30%
- E. 10%

**155.** Menthol has anesthetic and antiseptic effect. What plant is the source of menthol?

- A. *Folia Menthae piperitae*
- B. *Folia Uvae ursi*
- C. *Folia Eucalypti*
- D. *Folia Salviae*
- E. *Folia Absinthii*

**156.** A drug was delivered to a private pharmacy. The chemical name of the drug active ingredient is 2-chloro-10-(3'-dimethylaminopropyl)-phenothiazine hydrochloride. Specify this drug:

- A. Chlorpromazine hydrochloride
- B. Promethazine hydrochloride
- C. Trifluoperazine hydrochloride
- D. Clonidine hydrochloride
- E. Diphenhydramine hydrochloride

**157.** A pharmacy performs both cash and non-cash transactions. Financial intermediary in the latter is a:

- A. Bank
- B. Central regional pharmacy
- C. City administration
- D. City administration department for pharmacy management
- E. Regional control-analytical laboratory

**158.** The main method of quantitative determination of corticosteroids is:

- A. Spectrophotometry
- B. Potentiometry
- C. Cerimetry
- D. Argentometry
- E. Acidimetry

**159.** Thyme grass is used for production of herbal medical products for treatment of respiratory tract infections. Under the State Pharmacopoeis of Ukraine, the raw herbal material is subject to chromatographic identification by means of thin-layer chromatography. What substances are detected on the chromatographic plate after its treatment with due reagent?

- A. Thymol and carvacrol
- B. Atropine and hyoscyamine
- C. Quercetin and rutin
- D. Apigenin and luteolin
- E. Arbutin and methyl arbutin

**160.** Specify the base for antibiotic ointments:

- A.** 6 parts of vaseline + 4 part of lanolin
- B.** 8 parts of vaseline + 2 part of lanolin
- C.** 5 parts of vaseline + 5 part of lanolin
- D.** 7 parts of vaseline + 3 part of lanolin
- E.** 5 parts of vaseline + 1 part of lanolin

**161.** A pharmaceutical company plans to produce hexamethylenetetramine tablets. What production method is optimal for such tablets?

- A.** Direct compression with adjuvants
- B.** Forming
- C.** Direct compression without adjuvants
- D.** Compression preceded by wet granulation
- E.** Compression preceded by dry granulation

**162.** Granulation is used to increase:

- A.** Flowability
- B.** Breakup
- C.** Dissolution
- D.** Volume density
- E.** Porosity

**163.** A 46-year-old patient is diagnosed with cardiac infarction. What drug should be prescribed for thrombolytic therapy?

- A.** Streptokinase
- B.** Nitroglycerine
- C.** Spironolactone (Verospiron)
- D.** Drotaverine hydrochloride
- E.** Trimeperidine (Promedol)

**164.** A patient suffering from trombophlebitis of his lower extremities has developed symptoms of heparin overdose. What drug can be used as an antidote?

- A.** Protamine sulfate
- B.** Phenindione (Phenilin)
- C.** Dipyridamol
- D.** Pentoxifylline
- E.** Theophylline

**165.** Which drug of the given below is a first aid antidote for acute poisoning caused by arsenic, mercury, chromium, and bismuth compounds?

- A.** Dimercaprol (Unithiol)
- B.** Prednisolone
- C.** Atropine
- D.** Adrenaline
- E.** Morphine

**166.** A 59-year-old patient has been using furosemide for a long time to treat his cardiac insufficiency. What drug for hypokalemia prevention should be used in the given case?

- A.** Panangin (Potassium aspartate and magnesium aspartate)
- B.** Thiothiazolinum
- C.** Acetylsalicylic acid
- D.** Trimetazidine
- E.** Enalapril

**167.** A 32-year-old woman that had been undergoing antibiotic therapy for her pneumonia has developed intestine disbacteriosis. What drugs should she be prescribed?

- A.** Probiotics
- B.** Immune-response modulating agents
- C.** Cholagogues
- D.** Antacids
- E.** Antispasmodics

**168.** A 53-year-old woman suffers from ischemic heart disease and angina pectoris. What drug can be used to stop angina pectoris attacks?

- A.** Nitroglycerine
- B.** Drotaverine hydrochloride
- C.** Propranolol
- D.** Dipyridamol
- E.** Acetylsalicylic acid

**169.** A patient is 20 years old. After she was stung by a bee the patient developed Quincke's disease; rash in the form of blisters and papulae appeared on her torso. First aid in this case should start with administering the following drug:

- A.** Prednisolone
- B.** Penicillin
- C.** Fresh frozen plasma
- D.** Rheopolyglukin (Dextran)
- E.** Haemodes

**170.** A patient with osteoarthritis (gonarthrosis) and peptic gastric ulcer in anamnesis must be prescribed a NSAID (nonsteroidal anti-inflammatory drug). What drug would be the most safe for this patient?

- A.** Meloxicam
- B.** Acetylsalicylic acid
- C.** Ibuprofen
- D.** Indometacin
- E.** Metamizole sodium

**171.** A 20-year-old man suffers from chronic hyperacid type B gastritis. Choose the antisecretory agent.

- A.** Omeprazole
- B.** Drotaverine hydrochlorid
- C.** Clarithromycin
- D.** Levofloxacin
- E.** Metoclopramide

**172.** In the course of clinical instrumental examination a 45-year-old patient was diagnosed with chronic helicobacter-associated type B gastritis. What group of drugs should be prescribed first of all?

- A.** Anti-Helicobacter pylori agents
- B.** Prokinetic agents
- C.** Antacids
- D.** Reparative drugs
- E.** Anti-Muscarinic agents

**173.** What equipment is necessary to make trituration tablets?

- A.** Special tableting machine for forming tablets
- B.** Dragee pan
- C.** Double sided tableting press machine
- D.** Rotary tableting machine
- E.** Film coater

**174.** To perform transactions with customers it is necessary for a pharmacy to have a cash register. What cash operation is registered by a cash register as a service payment?

- A.** Cash remaining in cash register at the beginning of workday
- B.** Sales proceeds
- C.** Encashment
- D.** Per diem costs
- E.** Merchandise return payments

**175.** 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 workday

**176.** Appropriate labor hours per week are being set for pharmacy staff. How many hours compose a working week for administrative staff?

- A.** 40
- B.** 30
- C.** 35
- D.** 45
- E.** 63

**177.** According to the law pharmacists have the right to paid leave. Total duration of main and additional leaves cannot exceed the following number of calendar days:

- A. 59
- B. 30
- C. 24
- D. 45
- E. 63

**178.** According to the regulations of the State Pharmacopoeia of Ukraine the following solution is used to detect potassium admixture in medicinal substances:

- A. Sodium tetraphenylborate
- B. Potassium Tetraiodomercurate Solution Alkaline
- C. Hydroxyquinoline
- D. Silver nitrate
- E. Tartaric acid

**179.** What method is used for quantitative determination of anti-tuberculous drug isoniazid according to the regulations of the State Pharmacopoeia of Ukraine?

- A. Bromatometry, direct titration
- B. Bromatometry, back titration
- C. Iodometry, back titration
- D. Iodometry, direct titration
- E. Acidimetry, direct titration

**180.** Nitrofurantoin should be identified by chromatography according to the regulations of the State Pharmacopoeia of Ukraine. What type of chromatography is used for such identification?

- A. Thin-layer
- B. Cation-exchange
- C. Anion-exchange
- D. Gas-liquid
- E. Paper partition

**181.** According to the regulations of the State Pharmacopoeia of Ukraine diphenylamine solution with sulfuric acid present can be used to detect the following admixtures in purified water:

- A. Nitrates
- B. Chlorides
- C. Heavy metals
- D. Ammonium salts
- E. Sulfates

**182.** To increase hydrophobic suspension stability a stabilizer is added. Name this stabilizer.

- A. Polysorbate 80 (Tween 80)
- B. Sodium chloride
- C. Dimethyl sulfoxide
- D. Glucose
- E. Vaseline oil

**183.** A pharmacy performs stock-taking to check its inventory holdings. What is the minimal interval between inventory checks of fixed assets?

- A. Once a year
- B. Once a quarter
- C. Twice a year
- D. Once a month
- E. Once in 3 years

**184.** A pharmacy performs regular stock-taking. What is the minimal interval between inventory checks of monetary funds and documents?

- A. Once a quarter
- B. Once in 3 years
- C. Twice a year
- D. Once a month
- E. Once a year

**185.** What inventory holdings of a pharmacy are included by a committee in a separate inventory during stock-taking?

- A. Medicines delivered to a pharmacy during stock-taking
- B. Medical products
- C. Medicinal herbs
- D. Bandaging material
- E. Alcoholature

**186.** Specify the norms of normal spoilage for medicinal leeches, which should be taken into account by a stock-taking committee.



- A. 7,6%
- B. 0,65%
- C. 0,85%
- D. No norm defined
- E. 1,9%

187. A new pharmaceutical enterprise is being founded. Which document of those given below is considered to be founding?

- A. Charter
- B. Order
- C. Standard act
- D. Directive
- E. -

188. A pharmaceutical firm uses a set of marketing concepts to manage its interactions with consumers. Point out one of such concepts.

- A. Manufacture improvement
- B. Staff improvement
- C. Management improvement
- D. Creative marketing
- E. Interactive marketing

189. What ratio is used in making hawthorn tincture?

- A. 1:10
- B. 1:2
- C. 1:5
- D. 1:20
- E. 1:1000

190. Name the way of injectabulettae application.

- A. For injection solutions of drugs
- B. Peroral
- C. For implantations
- D. Vaginal
- E. Sublingual

191. 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

192. Hexamethylenetetramine solution sterility is achieved by:

- A. Filtering through bacterial filters
- B. Preserving agents
- C. Gas diffusion sterilization
- D. Tyndallization method of sterilization
- E. Pressure steam sterilization

193. During qualitative chemical analysis of nicotinic acid substance the reaction was conducted, which resulted in blue colouring. What reagent was used?

- A. Copper (II) sulfate solution
- B. Sodium hydroxide solution
- C. Iron (III) chloride solution
- D. Thiocyanogen bromide reagent
- E. Nessler's reagent

194. What physical constant of a substance can be used to identify diphenhydramine hydrochloride according to the regulations of the State Pharmacopoeia of Ukraine?

- A. Fusion temperature
- B. Boiling temperature
- C. Relative density
- D. Refractive index
- E. Specific rotation

195. Nitroxoline substance is being analysed for quantitative content of reactant by alkalimetry in non-water medium. What titrant and indicator are used in the given method?

- A.** Sodium methylate solution, thymol blue
- B.** Perchloric acid solution, crystal violet
- C.** Sulfuric acid solution, naphtholbenzein
- D.** Sodium hydrochloride solution, phenolphthalein
- E.** Potassium hydrochloride solution, methyl orange

**196.** 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

**197.** Pharmaceutical market subjects that purchase drugs and medical products for further resale to make a profit, are called:

- A.** Dealers
- B.** Manufacturers
- C.** Consumer organisations
- D.** Government authorities
- E.** Individual consumers

**198.** A pharmaceutical firm is unable

to satisfy the demand for a drug. Specify the type of marketing tasked with decrease of excessive demand for a product by raising prices, and stopping advertising and promotion.

- A.** Demarketing
- B.** Creative marketing
- C.** Promotional marketing
- D.** Synchromarketing
- E.** Remarketing

**199.** What stage of drug life cycle is characterized by a period of slow increase of sales amount, significant expenses for demand making, and absence of profit?

- A.** Introduction
- B.** Creation and development
- C.** Market exit
- D.** Maturity and saturation
- E.** -

**200.** Grass of yellow hornpoppy (*Glaucium flavum*) contains alkaloid glaucine. What pharmacological effect does this plant have because of this alkaloid?

- A.** Antitussive
- B.** Expectorant
- C.** Analgetic
- D.** Anti-inflammatory
- E.** Antipyretic

## **INSTRUCTIONAL BOOK**

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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 <sub>2</sub>	CO <sub>2</sub> partial pressure
pO <sub>2</sub>	O <sub>2</sub> partial pressure
Pm	Per minute
Ps	Pulse rate
R	Roentgen
RBC	Red blood count
Rh	Rhesus
RR	Respiratory rate
S1 (S <sub>1</sub> )	Heart sound 1
S2 (S <sub>2</sub> )	Heart sound 2
TU	Tuberculin unit
U	Unit
USI	Ultrasound investigation
V/f	Vision field
WBC	White blood count
X-ray	Roentgenogram