

1. Analysis of an extract by chromatographic method revealed presence of phenyl prapanolamine. It is the metabolite of the following alkaloid:

- a. Aconitine
- b. Pyrocatechin
- c. Ephedrine**
- d. Securinin
- e. Reserpine

2. During local anaesthetization novocaine solution is usually compounded with solution of adrenaline hydrochloride. What is the purpose of this action?

- a. Vasodilatation
- b. Decrease in smooth muscle tone
- c. Algesia reduction
- d. Vasoconstriction**
- e. Increase in smooth muscle tone

3. A 32-year-old patient takes antituberculous drugs. Some time later he has noticed that his urine turned orange. What preparation is the most likely cause of this phenomenon?

- a. Rifampicin**
- b. Pyrazinamide
- c. Streptomycin sulfate
- d. Ethambutol
- e. Isoniazid

4. months after treatment a patient with coronary heart disease developed tolerance to the nitrates with prolonged action. What drug with nitrate-similar effect should be recommended in this case?

- a. Verapamil
- b. Metoprolol
- c. Nifedipine
- d. Prasosine
- e. Molsidomine**

5. A 52-year-old patient was diagnosed with systemic amebiasis accompanied by bowels, liver and lungs affection. What preparation should be administered?

- a. Chingamin
- b. Phthalazol
- c. Chiniofon
- d. Tetracycline
- e. Metronidazole**

6. A 33-year-old woman who has been treated for chronic polyarthritis for a long time complains about arterial pressure rise, change of adipose tissue distribution, menstrual cycle disorder. What preparation has she taken?

- a. Butadion
- b. Indometacin
- c. Prednisolone**
- d. Synaflan
- e. Diclofenac sodium

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

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

8. A pharmaceutical enterprise widely applies technical and technological media of information use in

order to increase efficiency of managing productive and administrative activity of an organization, to enhance labour productivity, to improve methods of planning and regulating management processes. All this is realized by means of:

- a. Automated data retrieval system
- b. Automated management system**
- c. Automated instruction and control system
- d. Automation equipped working place
- e. Information-management system

9. Marketing research of certain pharmaceutical groups involves collection and analysis of primary information. This is the following type of marketing research:

- a. Research of drug market
- b. Armchair research
- c. Field research**
- d. Research of drug consumers
- e. Research of marketing network of pharmaceutical market

10. An analytical laboratory carries out quantitative analysis of sodium citrate by method of ion-exchanging chromatography on a cationite. What titrated solution is to be used for the following titration of generated citric acid?

- a. Potassium iodate
- b. Iodine
- c. Sodium hydroxide**
- d. Hydrochloric acid
- e. Trilon B

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

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

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

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

13. Preparations made of ginseng roots have tonic and adaptogenic properties, improve mental and physical performance. If the ginseng tincture cannot be found in a pharmacy, it can be substituted by the analogous preparations made of the following raw material:

- a. Radices Inulae
- b. Radices Valerianae
- c. Radices Eleutherococci**
- d. Radices Ononidis
- e. Radices Rhei

14. Balance is a part of financial accounting of pharmacies. What index is reflected in the assets of the balance sheet?

- a. Residual value of fixed assets**
- b. Wholesale turnover
- c. Salary costs
- d. Proceeds of a pharmacy
- e. Retail turnover

15. The market is characterized by the following conditions: a big number of salespersons and customers who don't make any influence upon the level of current prices; availability of uniform and interchangeable competing products; lack of price restrictions. What type of market is it?

- a. Oligopolistic market
- b. Market of monopolistic competition
- c. Market of pure competition**
- d. Market of pure monopoly
- e. -

16. If the internal surface of buckthorn rind is moistened with 5% alkaline solution, it becomes cherry-red colouring. This is the evidence of presence of the following substance:

- a. Alkaloids
- b. Flavonoids
- c. Tannins
- d. Anthracene derivatives**
- e. Saponins

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

- a. Adding to the fused vaseline
- b. Trituration with a part of vaseline
- c. Trituration with a few drops of ethyl alcohol
- d. Trituration with a few drops of water
- e. Trituration with a few drops of vaseline oil**

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

- a. Sodium phosphate
- b. Ammonium sulfide**
- c. Magnesium sulfate
- d. Sodium chloride
- e. Potassium bromide

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

- a. In three working days
- b. In a week
- c. There is no deadline
- d. On the next working day**
- e. In ten working days

20. Choose an antiseptic from the group of halogen containing drugs that can be included into the first-aid kit for a child going to a summer camp: 3

- a. Copper sulfate solution
- b. Brilliant green solution
- c. Alcoholic iodine solution**
- d. Methylene blue solution
- e. Formaldehyde solution

21. A pharmacy received a new generation nonsteroid anti-inflammatory drug "meloxicam" that mainly blocks cyclooxygenase-2. What advantages does this preparation have in comparison with other nonsteroid anti-inflammatory drugs?

- a. Evident myospasmolytic action
- b. Minimal side effect on hematogenesis
- c. Significant inhibition of protease activity
- d. Minimal side effect on alimentary tract**

e. Interferonogenic properties

22. Leaves of belladonna, henbane and datura containing tropane alkaloids must be stored according to the following list requirements:

a. List of substances equivalent to narcotics

**b. B list (these drug substances require caution in handling, storage or use)**

c. General sales list

d. A list (poisonous drug substances)

e. Essential oil materials list

23. A patient suffering from essential hypertension has increased concentration of renin in blood plasma. Which pharmacological group should be preferred for this patient treatment?

a. alpha-adrenoblockers

b. Blockers of calcium channels

c. Sympatholytics

**d. ACE inhibitors**

e. Diuretics

24. A patient suffering from stomach ulcer was prescribed almagel. Which of its pharmacological properties is intended for treatment of this pathology?

a. Local anaesthetization

b. Blocking the muscarinic cholinoreceptors

c. Anti-inflammatory action

**d. HCl neutralization**

e. Blocking the H<sub>2</sub>-histamine receptors

25. One of the ways to derive essential oil is enfleurage, or maceration. Essential oil can be derived by enfleurage from the following herbal raw material:

a. Lemon skin

b. Mint leaves

c. Camomile flowers

**d. Petals of Damascus rose**

e. Coriander fruits

26. A pharmacist and a pharmacy manager were involved into the labour dispute about carry over of vacation time. The pharmacist applied to the council of conciliation. The council should consider his application within the following period:

a. 1 month

**b. 10 days**

c. 3 days

d. 5 days

e. 1 week

27. All the medications require special storage conditions according to their physical and physicochemical properties. Ampouled solution of sodium adenosine triphosphate (ATP) should be stored under the following temperature:

a. 12 ? 15°C

**b. 3 ? 5°C**

c. 7 ? 10°C

d. 0 ? 2°C

e. 10°C

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

a. Chromatographic

**b. Gravimetric**

c. Photocolorimetric

- d. Titrimetric
- e. Spectrophotometric

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

- a. 200 mg
- b. 50 mg
- c. 500 mg
- d. 1000 mg
- e. 100 mg**

30. An analyst of a pharmaceutical storehouse received the substance of hydrogen peroxide for analysis. Quantitative determination of this drug should be performed by permanganatometric 4 method. According to the analytical normative document, titration should be carried out till the solution turns:

- a. Yellow
- b. Green
- c. Pink**
- d. Dark blue
- e. Colourless

31. A patient suffering from ulcer disease was prescribed famotidine. What is the mechanism of its action?

- a. Inhibition of adenosine triphosphatase activity
- b. Block of cholinoreceptors of sympathetic ganglions
- c. Block of 1-histamine receptors
- d. Block of muscarinic cholinoreceptors
- e. Block of 2-histamine receptors**

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

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

33. While producing phytopreparations and organotherapeutic preparations different kinds of dryers are used. What dryer would be the most effective for drying thermolabile compounds?

- a. Roller dryer
- b. Drying oven
- c. Drum dryer
- d. Freeze-dryer**
- e. Band dryer

34. Choose an optimal antibacterial drug for the mycoplasmal pneumonia treatment:

- a. Amoxyclav
- b. Rovamycin**
- c. Penicillin
- d. Gentamycin
- e. Ampicillin

35. An analytical laboratory received substance of citric acid for the analysis. According to the requirements of the Ukrainian State Pharmacopoeia, citric acid can be determined by method of:

- a. Acidimetry
- b. Iodometry
- c. Alkalimetry**

- d. Bromatometry
- e. Iodochlorometry

36. According to the requirements of the Ukrainian State Pharmacopoeia, the amount of calcium gluconate can be determined by the chelatometric method. What solution should be used as a titrant?

- a. Potassium permanganate
- b. Argentum nitrate
- c. Hydrochloric acid
- d. Sodium edetate**
- e. Iodine monochloride

37. Tannins have astringent effect and are used for treatment of colitis, enterocolitis, diarrhea. What herbal raw material contains a lot of tannins?

- a. Fructus Sambucci nigri
- b. Fructus Rhamni catharticae
- c. Fructus Frangulae
- d. Fructus Myrtilli**
- e. Fructus Ribes nigri

38. Anthracene derivatives of emodine group exhibit purgative effect. What herbal raw material contains large quantity of anthracene derivatives of emodine group?

- a. Bilberry fruits
- b. Alder buckthorn fruits
- c. Elder fruits
- d. Currants fruits
- e. Buckthorn fruits**

39. Codeine can be derived for medical purposes out of a plant alkaloid by means of semisynthetic method. Name this alkaloid:

- a. Berberine
- b. Papaverine
- c. Morphine**
- d. Protopine
- e. Chelidonine

40. Theory of management currently marks out four the most important approaches to the management. Choose the approach that is NOT USED in the theory of management: 5

- a. Situational
- b. Approach from the position of different schools identification
- c. Process
- d. Systemic
- e. Structural**

41. Therapeutic department of a municipal hospital purchases medical products in a pharmacy. The wares will be dispensed from the stores department on presentation of the following document:

- a. Register of laboratory packing works
- b. Delivery order**
- c. Prescription register
- d. Cash book
- e. Inventory report

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

- a. Ethanol
- b. Phenol
- c. Fatty or mineral oil**
- d. Acetone

e. Diethyl ether

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

a. 0,25 g

b. 0,3 g

c. 0,1 g

d. 0,2 g

e. 0,5 g

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

a. 5,0 g and 45,0 g

b. 2,5 g and 47,5 g

c. 0,5 g and 49,5 g

d. 1,0 g and 49,0 g

e. 10,0 g and 40,0 g

45. A patient got an injection of 0,25% novocaine solution for the purpose of anaesthetization. Suddenly the patient has presented with red spots, intense sweating, tachycardia, bronchospasm, edema of nasal mucous membrane. What is the cause of this complication?

a. Local irritation

b. Delayed allergy

c. Immediate allergy

d. Tachyphylaxis

e. Abstinence syndrome

46. In Ukraine the out-patients are supplied with narcotic and psychotropic drugs only by prescription. Medicoprophyllactic institutions receive prescription blanks (Form 3) from the following source:

a. Pharmaceutical corporation

b. Pharmacy storehouse

c. Wholesale companies

d. City's health department

e. Typography

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

a. Trilon B

b. 0,1 M solution of perchloric acid

c. 0,1 M solution of sodium hydroxide

d. Ascorbic acid

e. Butylhydroxytoluene

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

a. 120°C - 15 minutes

b. 120°C - 12 minutes

c. 120°C - 8 minutes

d. 180°C - 30 minutes

e. 100°C - 15 minutes

49. During digitoxin therapy for chronic cardiac insufficiency, a patient developed signs of intoxication with this preparation. The patient was prescribed unithiol. What is the mechanism of unithiol action in case of intoxication with cardiac glycosides?

a. Increase of sodium concentration in the cardiomyocytes

b. Binding of calcium ions

c. Reduction of K<sup>+</sup>-Na<sup>+</sup>-adenosine triphosphatase

d. Increased potassium permeability in the cardiomyocytes

e. Binding of glycoside into the complex compound

50. A pharmacy got a formulation of a mixture containing manzanita decoction and belladonna extract. What is the reason for incompatibility between these components?

a. Precipitation

b. Oxidation-reduction processes

c. Coagulation of colloid systems

d. Emission of gaseous substances

e. Hydrolysis

51. The central district pharmacy functions in a district centre and supplies local population with drugs and medical products. What pharmaceutical institutions are allowed to settle accounts with the customers without a cash register by way of check issuing?

a. Pharmacies, pharmaceutical outlets and kiosks

b. Pharmaceutical outlet at a hospital

c. Pharmaceutical kiosk at a railway station

d. Pharmaceutical kiosk at a market

e. Central district pharmacy

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

a. Liquid and solid

b. Liquid

c. Gaseous

d. Liquid and gaseous

e. Gaseous and solid

53. Examination of a patient who has been treated for rheumatoid arthritis for a long time revealed hyperglycemia. It might have been caused by the following drug:

a. Diclofenac sodium

b. Delagil

c. Levamisole

d. Dexamethasone

e. Ibuprofen

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

a. Release of water of crystallization

b. Restricted solubility

c. Component immiscibility

d. Coagulation

e. Adsorption

55. A large and well-known company has granted a small independent firm the right to use its trademark and technology so that it could take advantage of authority and customer trust to the well-known brand. Such concept is called:

a. Use of trademark

b. Use of manufacturer's brand

c. Merchandising

d. Use of dealer's brand

e. Franchising

56. A woman who has been treated for infiltrative focal tuberculosis for a long time complains of acute hearing impairment. Which of the following preparations might be the cause of such side effect?

a. Isoniazid

b. Rifampicin



- c. Ethionamide
- d. Streptomycin**
- e. Ethambutol

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

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

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

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

59. Aerosol composition includes active substances, solvents and propellents. Which of the following substances is used as propellant?

- a. Propylen glycol monostearate, argon, helium
- b. Isopropyl myristate, neon, sulfur oxide
- c. Freon-11, carbon oxide, propanebutane**
- d. Linethol, myristic acid, benzocaine
- e. Hydrogen sulfide, hydrogen, triethanolamine

60. A department producing sterile 7 pharmaceutical forms needs a method of eye drops sterilization applicable for drugs derived from thermolabile substances. What is the optimal method of sterilization?

- a. Use of polymeric packings
- b. Sterile filtration**
- c. Addition of ascorbic acid
- d. Thermal sterilization
- e. Filling in the inert gas medium

61. Accounting of pharmaceutical institutions includes control accounts of nine classes. What accounting units are represented in the accounts of the 4-6 classes?

- a. Pharmacy assets
- b. Material costs
- c. Incomings and business results
- d. Liability**
- e. Element costs

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

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

63. What drug may cause constipation in a patient undergoing combined therapy for arterial hypertension?

- a. Panangin
- b. Acetylsalicylic acid in small dosages

- c. Furosemide
- d. Trimetazidine

**e. Verapamil**

64. Management of a pharmaceutical company involves American and Japanese approaches. Choose a typical feature of American model of management:

- a. Slow career development
- b. Heightened attention to the human factor
- c. Group forms of control
- d. Corporate liability

**e. Quick evaluation and career development**

65. Quantitative analysis of drugs containing primary aromatic amine can be performed by means of nitritometric method. Which of the following preparations can be determined by the nitritometric method without preliminary acid hydrolysis?

- a. Phthazin
- b. Phthalazol

**c. Sulfadimine**

- d. Paracetamol
- e. Soluble streptocid

66. When filling the "Inventory report", a pharmacy manager represented a number of business transactions in the receipts section of report. Such transactions include:

- a. Markdown on account of laboratory packing works

**b. Purchase of drugs and pharmaceutical merchandise**

- c. Products consumption for business needs
- d. Total of realized trade mark-up
- e. Total of sale

67. A patient suffering from neurosis accompanied by anxiety and fear development was prescribed diazepam. What pharmacological effect makes it possible to apply the drug for this disease treatment?

- a. Anti-inflammatory
- b. Antiarrhythmic

**c. Anxiolytic**

- d. Hypotensive
- e. Antianginal

68. A hospital admitted a child with signs of poisoning with belladonna alkaloids. What drug should be applied as an antidote?

- a. Sodium caffeine benzoate
- b. Magnesium sulfate

**c. Proserin**

- d. Paracetamol
- e. Sodium valproate

69. You are employed in a pharmaceutical storehouse. When adding newly received preparations to the computerized database, specify the pharmacological group of paracetamol:

- a. Hypnotic
- b. Hypotensive drug
- c. Antianginal drug

**d. Nonnarcotic analgetic**

- e. Diuretic

70. A 34-year-old patient suffering from 8 bronchitis was prescribed an antitussive drug of central action. What drug is it?

- a. Corglycon
- b. Furosemide

c. Fercoven

**d. Glaucine**

e. Enalapril

71. Continuous taking of a drug results in reduction of its efficiency. This phenomenon is called:

a. Tachyphylaxis

**b. Habituation**

c. Cumulation

d. Sensibilization

e. Dependence

72. A patient was warned that taking the prescribed preparation might cause cough. What drug is it?

a. Dichlothiazide

b. Metoprolol

c. Clonidine

d. Phenihidine

**e. Lisinopril**

73. A pharmacist with over 8 years of service got a medical certificate in accordance with the established procedure. What is the size of temporary disability allowance the pharmacist is entitled to?

a. 80% of average salary

b. 90% of average salary

**c. 100% of average salary**

d. 60% of average salary

e. 50% of average salary

74. A pharmacy functions on the base of collective financial liability. The financial liability agreement may be re-executed in the following case:

**a. Dismissal of over 50% of staff**

b. Dismissal of 5% of staff

c. Employment of new employees

d. Dismissal of 10% of staff

e. Dismissal of one staff member

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

**a. Narcotic**

b. Toxic

c. General sale list

d. Potent

e. Psychotropic

76. A pharmaceutical company "Pharmasvet" has patented and produces now a new hypoglycemic preparation. The company markets this product directly through the own marketing departments, affiliated marketing companies, pharmacy network. Marketing policy of this pharmaceutical company can be characterized by the channel of the following level:

a. Three-level

b. Four-level

c. One-level

d. Two-level

**e. Zero level**

77. A patient with acute cardiac insufficiency and cardiac glycoside intolerance got an injection of dobutamine. What is the mechanism of its action?

a. Stimulation of  $\beta_1$ -adrenoreceptors

b. Inhibition of phosphodiesterase activity

c. Stimulation of muscarinic cholinoreceptors

**d. Stimulation of  $\beta_1$ -adrenoreceptors**

e. Block of K<sup>+</sup>, Na<sup>+</sup>-adenosine triphosphatase

78. A patient suffering from chronic cardiac insufficiency was prescribed a cardiac glycoside from the foxglove (Digitalis) group. What drug is it?

- a. Corglycon
- b. Cordiamin
- c. Strophanthine
- d. Corvalol
- e. Digoxin**

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

- a. Mucilages
- b. Cardiac glycosides**
- c. Fatty oils
- d. Alkaloids
- e. Tannins

80. Lipophilic bases for suppositories include:

- a. Gelatin-glycerol base
- b. Polyethylene oxide base
- c. Mixtures of hydrogenated fats**
- d. Collagen base
- e. Glycerol soap base

81. An expert of an analytical laboratory is determining Nitrofurantoin. What quantitative titrimetric method can be applied?

- a. Iodometry**
- b. Alkalimetry
- c. Nitritometry
- d. Argentometry
- e. Permanganatometry

82. A 52-year-old patient complains of having increased arterial pressure for a month. She has a 5-year history of bronchial asthma. What group of hypotensive drugs should NOT be recommended this patient?

- a. Calcium channel blockers
- b. Angiotensin receptor blockers
- c. Diuretics
- d.  $\beta$ -adrenoreceptor blockers**
- e. Tranquilizers

83. A pharmacy analyst is determining one of the following drugs by the nitritometric method. What drug is it?

- a. Ammonium chloride
- b. Atropine sulfate
- c. Ftivazide
- d. Analgin
- e. Norsulfazole**

84. A chemotoxicological laboratory received a biological material. A toxicologist carries out uncontrollable analysis aimed at detection of the following group of toxic substances:

- a. Pesticides
- b. Mineral acids, alkali, inorganic salts
- c. Medical use toxins
- d. Metal toxins
- e. Volatile toxins**

85. Quality of injection solutions supplied in ampoules can be assessed according to different indices.

How many ampoules should be checked while determining quality of sealing (leaktightness of an ampoule)?

- a. 97%
- b. 75%
- c. 50%
- d. 100%**
- e. 80%

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

- a. Pressure filters**
- b. Nutsch filter
- c. Membrane filter
- d. Bag filter
- e. Paper filter

87. An 18-year-old patient was diagnosed with disseminated pulmonary tuberculosis. What drug will provide etiologic pharmacotherapy?

- a. Trimethoprim
- b. Benzylpenicillin sodium salt
- c. Isoniazid**
- d. Lincomycin
- e. Metronidazole

88. At the end of each month accountant of a pharmacy calculates amount of realized price markup. Which index IS NOT USED for such calculation?

- a. Total of cash in vault**
- b. In-stock balance at the beginning of month in retail prices
- c. Total sales proceeds
- d. In-stock balance at the beginning of month in wholesale prices
- e. Total value of received goods in retail and wholesale prices

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

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

90. A pharmacy analyst is determining adrenaline tartrate by method of acidbase titration in the anhydrous solvents. What indicator is to be used according to the requirements of the Ukrainian State Pharmacopoeia?

- a. Thymolphthalein
- b. Eriochrome black
- c. Methyl orange
- d. Phenolphthalein
- e. Crystal violet**

91. A patient has accidentally taken a barium-containing salt. All of the following salts have toxic effect upon the human organism EXCEPT for:

- a. Barium nitrate
- b. Barium carbonate
- c. Barium sulfate**
- d. Barium acetate
- e. Barium chloride

92. A mineralizate under examination contains precipitates of barium sulfate and plumbum sulfate.

These salts can be separated by means of:

- a. Solution of ammonium nitrate
- b. Solution of ammonium acetate**
- c. Acetic acid
- d. Sulfuric acid
- e. Solution of sodium acetate

93. A pharmaceutical company "Adonis" promotes its new products by means of advertisement that informs the customers about the product, highlights its advantages, typical features and properties. What kind of advertisement is it?

- a. Direct
- b. Informational**
- c. Sustaining
- d. Aggressive
- e. Indirect

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

- a. Free
- b. Normative
- c. Licence-based**
- d. Limited
- e. Without preliminary licencing or registration

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

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

96. A pharmacy analyst is measuring a drug by method of indirect bromatometry. Which of the following titrated solutions is to be used?

- a. Argentum nitrate
- b. Sodium thiosulfate**
- c. Sodium edetate
- d. Potassium bromate
- e. Sodium nitrite

97. An expert of an analytical laboratory is determining  $\text{Ca}^{2+}$  in the substance of calcium pantothenate. Specify the method of analysis:

- a. Permanganatometry
- b. Iodometry
- c. Nitritometry
- d. Argentometry
- e. Chelatometry**

98. Styles of maize with stigmata containing fatty acids, vitamins, essential oils, saponins and other substances are used as:

- a. Bactericidal and astringent drug
- b. Expectorant and antitussive drug
- c. Diuretic and choleric drug**
- d. Sedative and anticonvulsive drug
- e. Cardiotonic and antiarrhythmic drug

99. Toxic substances can be isolated from the objects of biological origin by different methods. In case of poisoning with pesticides - derivatives of phosphoric acids the following method is applied:

**a. Infusion with organic solvents**

- b. Infusion with alkalized water
- c. Dialysis aout of alkalized solutions
- d. Infusion with water acidified with chloric acid
- e. Distillation with water steam from the alkaline medium

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

**a. Mercuric oxide yellow**

- b. Pilocarpine hydrochloride
- c. Ethyl morphine hydrochloride
- d. Zinc sulfate
- e. Resorcin

101. Financial accountability of pharmacies consists of separate account forms. Which form presents accounts payable for the goods purchased?

**a. Balance sheet, form 1**

- b. Financial performance report, form 2m
- c. Balance assets, form 1
- d. Net worth statement, form 3
- e. Financial performance report, form 2

102. In Ukraine natural persons and small business entities are allowed to use the simplified tax system. What limit on the number of employees is established for 11 such enterprises?

- a. No more than 20 persons
- b. No more than 40 persons
- c. No more than 50 persons
- d. No more than 10 persons**
- e. No more than 30 persons

103. Fatty oil containing saturated fatty acids is used for atherosclerosis prevention. Specify the medicinal plant that is used for oil production:

- a. Black chokeberry fruits
- b. Hawthorn fruits
- c. Fennelflower seeds
- d. Dill seeds
- e. Flax seeds**

104. A department of a pharmaceutical plant produces injection solutions. Ascorbic acid solution for injections relates to the following group of solutions:

**a. Solutions of substances requiring special rectification**

**b. Easily oxidized solutions**

- c. Solutions of salts derived from weak bases and strong acids
- d. Solutions of substances that should be subjected to thermal sterilization
- e. Solutions of salts derived from strong bases and weak acids

105. A phytochemical department of a pharmaceutical factory produces biogenic stimulators out of different raw materials. Specify the plant-derived biogenic stimulators:

- a. Liquid extract of aloe, peloidinum, biosedum juice
- b. Vitreous body, Suspesio Placetae pro injectionibus, aloe juice, biosedum
- c. Peloidinum, humisolum, torfotum, plasmol, solcoseryl
- d. Liquid extract of aloe, aloe liniment, aloe juice, biosedum**
- e. Peloidinum, humisolum, torfotum, Fibs pro injectionibus

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

- a. Isoionicity**

- b. Prolonged action
- c. Isotonicity
- d. Isoviscosity

**e. Sterility**

107. Powders represent an important group among the extemporal medicinal preparations. Which of the following components can be incorporated into a powder without preliminary grinding?

**a. Basic bismuth nitrate**

- b. Camphor
- c. Calcium gluconate
- d. Xeroform
- e. Ascorbic acid

108. Medications in the storing rooms of a medicoprophyllactic institution should be placed on the shelves, in the cases, refrigerators or on the pallets or rickers. Toxic medications should be kept in:

a. In the internal safe partition

**b. In a locked metal case**

- c. In a wooden case
- d. In a safe
- e. In a refrigerator

109. A storehouse received a batch of althaea roots. For its verification a drop of ammonia solution was applied upon the root section; the spot of section turned yellow. This is the evidence of presence of the following substance:

- a. Gum
- b. Tannins

**c. Mucilages**

- d. Pectins
- e. Vitamin C

110. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining procaine hydrochloride by nitritometric method. What indicator should be used for this purpose?

- a. Crystal violet
- b. Methyl red

**c. Neutral red**

- d. Xylenol orange
- e. Acid chrome blue

111. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining fluorouracil by method of nonaqueous titration. What titrated solution is to be used?

- a. Sodium nitrite
- b. Ammonium thiocyanate
- c. Sodium edetate 12

**d. Tetrabutyl ammonium hydroxide**

- e. Potassium bromate

112. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining calcium gluconate by method of complexometric titration. What indicator is to be used?

- a. Methyl red
- b. Thymolphthalein
- c. Tropeolin 00

**d. Calconcarbon acid**

- e. Crystal violet

113. According to the requirements of the Ukrainian State Pharmacopoeia, a certain drug is being measured by method of chelatometric titration. What drug is it?

- a. Potassium chloride



- b. Potassium citrate
- c. Calcium chloride**
- d. Sodium benzoate
- e. Sodium thiosulfate

114. An analytical laboratory carries out an analysis of ferrum sulphate heptohydrate according to the requirements of the Ukrainian State Pharmacopoeia. The test portion of the substance should be titrated with the following solution:

- a. Potassium bromate
- b. Ammonium cerium sulfate**
- c. Ammonium thiocyanate
- d. Argentum nitrate
- e. Sodium edetate

115. A patient suffering from arterial hypertension and chronic bronchitis suddenly presented with dry cough and dyspnea. Body temperature remained unchanged. It is known that the patient takes captopril. These symptoms can be explained by increased generation of:

- a. Renin
- b. Angiotensin-1
- c. Bradykinine**
- d. Aldosterone
- e. Natriuretic peptide

116. Aman came to a pharmacy and asked to recommend him a drug for treatment of allergic rhinitis that occurs in the period of linden flowering. What drug may be applied?

- a. Adrenaline
- b. Ambroxol
- c. Losartan
- d. Loratadine**
- e. Anapriline

117. During the sensitivity test for benzylpenicillin a patient developed anaphylactic shock. The following preparation must be injected around the spot of antibiotic injection:

- a. Noradrenaline hydrotartrate
- b. Propranolol
- c. Ceftriaxon
- d. Adrenaline hydrochloride**
- e. Atropine sulfate

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

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

119. An accountant is calculating financial performance of a pharmacy. What item will be represented in the liabilities of the accounting report 791 called "Operational result" ?

- a. Profits tax
- b. Net profit (sales proceeds)**
- c. Administration expenses
- d. Cost of goods sold
- e. Sales expenses

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

- a. 7 500UAH
- b. 4 000 UAH
- c. 10 000 UAH**
- d. 2 500UAH
- e. 12 000 UAH

121. Novocaine metabolism in the organism results in generation of p-aminobenzoic acid. What metabolic process underlies this conversion?

- a. Reduction
- b. Conjugation
- c. Dealkylation
- d. Oxidation
- e. Hydrolysis**

122. A patient got poisoned with nitrites. Nitrite detection by means of azo dye 13 reaction involves using such acid:

- a. Salicylic
- b. Sulfanilic**
- c. Phosphoric
- d. Sulfuric
- e. Hydrochloric

123. Fruits of holy thistle (Silybum) are used for production of a number of domestic and foreign hepatoprotective drugs. Factor of merit of this raw material is content of:

- a. Flavolignans**
- b. Alkaloids
- c. Terpenoids
- d. Vitamins
- e. Coumarins

124. According to the pharmacopoeia requirements of liquid extract production, the extractant and the raw material should be taken in the following proportion:

- a. 1:3
- b. 1:10
- c. 1:4
- d. 1:1**
- e. 1:5

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

- a. Stratification
- b. Dampening**
- c. Adsorption
- d. Oxidation
- e. Precipitation

126. An analyst is measuring sodium benzoate in the anhydrous medium by the acidimetric method according to the requirements of the Ukrainian State Pharmacopoeia. What reagent had to be used as a solvent?

- a. Water
- b. Pyridine
- c. Anhydrous acetic acid**
- d. Dimethyl formamide
- e. Methanol

127. A pharmacy analyst is measuring mercury dichloride by method of indirect chelatometry. Excess of titrated solution of sodium edetate can be titrated by means of the following titrated solution:

- a. Potassium bromate

- b. Sodium methylate
- c. Sodium hydroxide
- d. Sodium thiosulfate

**e. Zinc sulfate**

128. Calcium lactate can be quantitatively determined by chelatometric method. According to the Ukrainian State Pharmacopoeia, the following substance should be used as indicator:

- a. Phenolphthalein
- b. Tropeolin 00
- c. Diphenylcarbazone
- d. Naphthol benzein

**e. Calconcarbon acid**

129. A pharmacy analyst of an analytical laboratory is studying procaine hydrochloride according to the requirements of the Ukrainian State Pharmacopoeia. What method is recommended by the Ukrainian State Pharmacopoeia for the quantitative analysis of this preparation?

**a. Nitritometry**

- b. Acidimetry
- c. Chelatometry
- d. Alkalimetry
- e. Bromatometry

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

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

131. Aerosol production involves usage of propellants relating to different groups. Choose the propellants that relate to the group of volatile organic solvents:

- a. Freons
- b. Vinyl chloride and methyl chloride
- c. Carbon dioxide

**d. Methylene chloride, ethylene chloride**

e. Propane, butane, isobutane

132. Which preparation from the group of laxative agents IS NOT to be administered in case of intoxication with CNSinhibiting substances? 14

- a. Bisacodyl
- b. Guttalax
- c. Sodium sulfate
- d. Vaseline oil

**e. Magnesium sulfate**

133. A patient with bronchial asthma was prescribed salbutamol that has led to relief of bronchospasm symptoms. This is associated with stimulation of:

**a. beta2-adrenoreceptors**

- b. Muscarinic cholinoreceptors
- c. alpha1-adrenoreceptors
- d. Acetylcholine synthesis
- e. beta1-adrenoreceptors

134. A pharmacy analyst is going to take a part of his holiday in spring and a part in summer. Holiday dividing is allowed provided that its main part will be no less than:

- a. 18 days**

b. 14 days

c. 12 days

d. 10 days

e. 16 days

135. TV periodically conducts campaigns for young people aimed at popularization of mechanical contraceptives (not indicating concrete trademarks). Such actions are a kind of the following marketing communication:

a. Advertising

b. Sale promotion

c. Sponsorship

d. Publicity

e. Personal sale

136. A biennial or perennial plant from the Apiaceae family has a blue-grey stem branching in its lower part. Its leaves are also blue-grey, finely dissected, with the ultimate filiform segments. The flowers are yellow, in compound umbels. Its fruit is used for production of "dill water". What plant is it?

a. *Conium maculatum*

b. *Foeniculum vulgare*

c. *Petroselinum crispum*

d. *Carum carvi*

e. *Coriandrum sativum*

137. Water for injections is derived from the drinking or distilled water. It can be either used freshlymade or stored under the required temperature conditions. Water for injections is produced in the following premises:

a. In the prescription department

b. In the sales area

c. In the assistant room

d. In the washing room

e. In a separate room of aseptic department

138. Department of finished drug products of the pharmacy №1 got a prescription for nasal drops "Farmazolin" intended for a 2,8-year-old child. This drug will be dispensed at the following price:

a. At no cost

b. Full price

c. 70% of price

d. 30% of price

e. 50% of price

139. On the base of licorice root different drug dosage forms are produced, notably tablets, powders, syrups, teas. The only unused form is injection solution. Licorice roots exhibit haemolytic properties since they contain the following active substances:

a. Essential oils

b. Alkaloids

c. Saponins

d. Iridoids

e. Polysaccharides

140. A pharmaceutical factory produces camphor oil for topical application. What oil is to be used as a solvent?

a. Olive

b. Plum

c. Peach

d. Vaseline

e. Sunflower seed

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

a. Emulsion

b. Base "For ophthalmic ointments"

c. Polyethylene glycol

d. Lanolin

e. Vaseline

142. One of the accounting documents of a pharmacy is the balance sheet (Form 1) consisting of assets and liabilities. Name the elements of the asset of a pharmacy: 15

a. Owned and borrowed assets

b. Non-current and borrowed assets

c. Circulating and borrowed assets

d. Circulating assets and non-current assets

e. Circulating assets and owned capital

143. A 46-year-old patient suffering from chronic bronchitis came to a pharmacy. What expectorative drug may be recommended?

a. Glauvent

b. Salbutamol

c. Falimint

d. Libexin

e. Ambroxol

144. A 26-year-old pregnant woman (III trimester of pregnancy) complains about body temperature rise up to 39°C. What febrifuge may be recommended in this case?

a. Analgin

b. Indometacin

c. Aspirin

d. Diclofenac

e. Paracetamol

145. Forensic toxicological analysis is often done for the metabolism products of toxic substances. Amino benzophenones are generated during biotransformation of:

a. Butyrophenones

b. Opiates

c. Phenothiazines

d. Barbiturates

e. 1,4-benzodiazepines

146. A 48-year-old patient was given an intravenous injection of prednisolone in order to arrest a severe attack of bronchial asthma. Prednisolone relates to the following group of hormonal drugs:

a. Estrogens

b. Gestagenic drugs

c. Glucocorticoids

d. Mineral corticoids

e. Anabolic steroids

147. A patient who has been taking phenazepam for a month came to a pharmacy. He insisted on buying another two packs of this drug. According to the patient, he feels unwell without phenazepam. What is the mechanism of the developed side effect?

a. Drug dependence

b. Aftereffect syndrome

c. Addiction

d. Cumulation

e. Idiosyncrasy

148. A patient suffering from allergic rhinitis was prescribed ephedrine in form of nasal drops. The

patient has significantly benefited from nasal instillation, and this stimulated him to use the drug every 2 hours. But under these conditions the drug appeared to be ineffective. What is the most likely cause of this phenomenon?

- a. Idiosyncrasy
- b. Drug dependence
- c. Tachyphylaxis**
- d. Allergy
- e. Cumulation

149. Adjuvant substances in the production of tablets give the tableted mass all necessary technological properties, ensure dosage precision, mechanical strength and stability of tablets during their storage. What adjuvant substances facilitate disintegration or solution of the tablets in the organism?

- a. Lubricants
- b. Antifriction agents
- c. Disintegrants**
- d. Filling agents
- e. Flavors

150. In case of loss of license a pharmacist should address an application for a duplicate to a licensing authority. The licensing authority is obliged to issue the duplicate to the applicant no later than in:

- a. Three working days after application receipt**
- b. Two months after application receipt
- c. The duplicate is not to be issued
- d. Three months after application receipt
- e. One month after application receipt

151. Determination of pH of a biological material by means of indicator paper is applied for the preliminary conclusion about substances that might have caused intoxication. The indicator paper moistened with plumbumacetate solution was exposed to the evaporations of the material under examination and turned black. This indicates that the material under examination contains: 16

- a. Ammonia
- b. Carbon monoxide
- c. Carbonic gas
- d. Hydrogen sulfide**
- e. Methane

152. Lapkina-Lazarenko method of ethylene glycol separation enables to isolate it effectively from the objects of chemotoxicological analysis. What is the selective transporter of ethylene glycol from the objects to the distillate?

- a. Ethyl alcohol
- b. Water
- c. Benzol**
- d. Chloroform
- e. Acetone

153. Tincture of what medicinal plant can be applied as a tonic?

- a. Orthosiphon stamineus
- b. Achillea millefolium
- c. Rhodiola rosea**
- d. Digitalis purpurea
- e. Robinia pseudacacia

154. Theobromine and theophylline can be determined by alkalimetric method according to the substituent. What acid is to be titrated with sodium hydroxide?

- a. Phosphoric
- b. Nitric**

- c. Sulfuric
- d. Chydrochloric
- e. Acetic

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

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

156. A 25-year-old patient has been taking antibiotics for 7 days. Antibiotic therapy has caused a complication in form of bowel dysbacteriosis. This complication should be treated with drugs of the following pharmacological group:

- a. Adaptogens
- b. Probiotics**
- c. Cholagogic
- d. Spasmolytics
- e. Antacids

157. A 57-year-old female patient was diagnosed with rheumatoid arthritis; she has also a history of stomach ulcer. What drug from the group of nonsteroid antiinflammatory drugs may be recommended this patient?

- a. Diclofenac
- b. Indometacin
- c. Mefenamic acid
- d. Celecoxib**
- e. Aspirin

158. Aerosol department of a pharmaceutical factory uses condensed gases in the capacity of propellants. Which of the following substances relates to the group of condensed gases?

- a. Nitrous oxide
- b. Nitrogen
- c. Freon**
- d. Methylene chloride
- e. Ethylene chloride

159. An internship doctor prescribed his patient nifuroxazid from the group of nitrofurans for treatment of urinary tracts infection. The doctor made a mistake because:

- a. It has bacteriostatic effect
- b. It is excreted from the organism very slowly
- c. It is excreted with urine in the inactive state
- d. It has nephrotoxic effect
- e. It cannot be absorbed from the digestive tract**

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

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

161. A business entity carrying on the wholesale trade of drugs must be keeping documents concerning purchase and sale for a certain period. Specify this period:

- a. No less than ten years
- b. No less than three years**
- c. No less than two years
- d. No less than one year
- e. No less than five years

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

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

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

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

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

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

165. Public health services attach great importance to the drug quality, that's why a pharmaceutical enterprise has concentrated its efforts upon the improvement of qualitative characteristics of its products. What concept of marketing management is applied in this company?

- a. All the answers are correct
- b. All the answers are false
- c. Production enhancement
- d. Modern marketing
- e. Product enhancement**

166. When a graduate becomes employed on a certain position he should be first familiarized with his rights and duties. What document regulates rights and duties of pharmacy employees?

- a. All the answers are correct
- b. All the answers are false
- c. Internal employment policies and procedures
- d. Labour code
- e. Job description**

167. In order to verify identity of tropan derivatives, Vitali's reaction is applied. For that purpose the medications should be first decomposed with nitric acid and then treated with alcoholic solution of potassium hydroxide and acetone. What effect will be observed?

- a. Setting of black precipitate
- b. Setting of white precipitate
- c. The solution will turn green
- d. Emission of gas bubbles
- e. The solution will turn purple**

168. A patient suffering from epilepsy has taken Phenobarbital for a long time and developed drug



tolerance. What is the mechanism of this phenomenon development?

- a. Acceleration of biotransformation
- b. Increase of receptor sensibility
- c. Accumulation of the drug in the organism
- d. Inhibition of biotransformation
- e. Weakening of absorption

169. According to the applicable legislation of Ukraine, prices for some drugs and medical products are subject to governmental regulation. What is the maximal trade markup established for the drugs that are purchased by public and municipal institutions using budgetary funds?

- a. 15% of manufacturer's wholesale price
- b. 35% of manufacturer's wholesale price
- c. 25% of manufacturer's wholesale price
- d. 10% of manufacturer's wholesale price
- e. 30% of manufacturer's wholesale price

170. A pharmacy sells drugs. What is the rate of value-added tax for drugs sold by a pharmacy?

- a. 25%
- b. 0%
- c. 20%
- d. 10%
- e. 30%

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

- a. Filtration
- b. Crystallization
- c. Settling
- d. Adsorption
- e. Heating with following quenching

172. A phytochemical department of a pharmaceutical factory produces valerian tincture of fresh material. Technological peculiarity of its production is that it should be produced on the base of:

- a. 90% ethanol with the ratio 1:10
- b. 95% ethanol with the ratio 1:10
- c. 70% ethanol with the ratio 1:10
- d. 90% ethanol with the ratio 1:5
- e. 70% ethanol with the ratio 1:5

173. A patient suffering from stomach ulcer was prescribed an antiulcer drug that also reduces secretion of hydrochloric acid and inhibits *Chelicobacter pylori*. What drug is it?

- a. Almagel
- b. Omeprazole
- c. Maalox
- d. Gastrocepine
- e. Famotidine

174. Quantitative determination of nitrofuril (furacilin) can be done by method of spectrophotometry. A pharmacy analyst can calculate quantity by measuring:

- a. Rotation angle
- b. Refractive index
- c. Optical density
- d. pH of solution
- e. Fusion temperature

175. Inventory in a pharmacy revealed a shortage within the range of natural loss. This shortage will be rated as expenses at the following price:

- a. Contract

b. Retail

c. Wholesale

d. Procurement

e. Negotiated

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

a. Phenol

b. Formaldehyde

c. Methanol

d. Isoamyl alcohol

e. Acetone

177. On the wage of pharmacy employees the personal income tax is levied. What pays ARE NOT INCLUDED into the total monthly income being subject to this kind of taxation?

a. Sick care benefit

b. Income in kind

c. Sick leave benefit

d. Dividends

e. Maternity pay

178. Analgin substance was sent for analysis. What method allows to evaluate quantitative content of analgin?

a. Alkalimetry

b. Acidimetry

c. Iodometry

d. Chelatometry

e. Permanganatometry

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

a. In the adoniside

b. In the valerian tincture

c. Potassium bromide should be added into the selling vial last of all

d. In the mixture of tinctures

e. In the lily-of-the-valley tincture

180. A pharmacy technologist revealed incompatibility of a formulation: Rp.: Mentholi 0,5 Natrii hydrocarbonatis Natrii tetraboratis aa 1,5 Aquae purificatae 100 ml M.D.S. 1 tablespoon twice a day. What action should the pharmacist take in order to make this pharmaceutical form?

a. Perform fractional dissolution

b. Substitute one of the components

c. Change pharmaceutical form

d. Add stabilizer

e. Substitute the solvent

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

a. Butyrol

b. Polyethylene oxide

c. Vitopsol

d. Cocoa butter

e. Hard fat

182. A patient with arterial hypertension was administered a non-prescription drug for symptomatic treatment of rhinitis. What pharmaceutical form should be recommended the patient in order to reduce as much as possible the likelihood of development of undesirable systemic vasoconstriction?

a. Tablets

**b. Ointment**

c. Drops

d. Gel

e. Aerosol

183. A 56-year-old patient suffering from essential hypertension was prescribed an inhibitor of angiotensin converting enzyme (ACE) and a potassium-sparing diuretic. Such combination is:

a. Unreasonable because it increases risk of orthostatic collapse development

**b. Unreasonable because it increases risk of hyperkalemia development**

c. Reasonable because it potentiates hypotensive effect of ACE inhibitor

d. Reasonable because it decreases risk of hyperkalemia development

e. Unreasonable because it reduces hypotensive effect of ACE inhibitor

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

a. Dichlothiazide

b. Clopamide

**c. Triamteren**

d. Furosemide

e. Ethacrynic acid

185. Restharrow (Ononis) root is used for production of a tincture for treating haemorrhoidal haemorrhages. Isoflavonoids can be identified in the raw material by means of:

a. Foam index test

**b. Chromatographic method**

c. Hemolytic index

d. Cyanidin test

e. Biological standardization

186. Hawthorn flowers are used for production of cardiogenic drugs. During procurement of this crude drug the flowers of the following plant can appear in it:

a. Elder

**b. Blackthorn**

c. Bird cherry

d. Buckthorn

e. Brier

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

a. Combustible substances

b. Volatile substances

c. Explosion hazardous substances

d. Highly inflammable substances

**e. Explosive substances**

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

a. Lipolysis

b. Electrolysis

c. Hydrolysis

d. Hemolysis

**e. Plasmolysis**

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

a. Adrenomimetics

b. Muscarinic cholinomimetics

**c. Muscarinic receptor blockers**

- d. Adrenoceptor blocker
- e. Muscarinic and nicotinic cholinomimetics

190. Product assortment is the whole set of product assortment groups offered by an enterprise. The index representing number of positions in each product assortment group is called:

- a. Product assortment saturation
- b. Product assortment width

**c. Product assortment depth**

- d. Product assortment
- e. Assortment comparability

191. A pharmacy analyst of the laboratory at the National drug quality control inspection is conducting quantitative determination of caffeine by method of acid-base titration in the anhydrous solvents according to the requirements of National Pharmacopeia of Ukraine. What titrated solution is to be used?

- a. Sodium edetate
- b. Potassium bromate
- c. Sodium methylate
- d. Sodium hydroxide

**e. Perchloric acid**

192. Common juniper is applied as a diuretic, anti-inflammatory and cholagogic agent. This plant gives the following medicinal raw material:

- a. Sprouts
- b. Roots
- c. Seeds

**d. Fruits**

- e. Leaves

193. Functioning of a pharmacy is realized on different levels of management. Function of direct control of employees fulfilling concrete tasks relates to the following level of management:

**a. Technical**

- b. Managerial
- c. Bureaucratic
- d. Administrative
- e. Institutional

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

- a. Procainamide hydrochloride
- b. Xycain
- c. Trimecaine hydrochloride

**d. Procaine hydrochloride**

- e. Tetracaine hydrochloride

195. After a sulfamide preparation was heated with salicylic acid in presence of concentrated sulfuric acid, it turned crimson. What drug is analyzed?

- a. Ethazol
- b. Phtalazol
- c. Streptocid
- d. Sulfaguine

**e. Soluble streptocid**

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

- a. 80 ? 90°C

- b. 50 ? 60°C
- c. 70 ? 80°C
- d. 35 ? 40°C**
- e. 60 ? 70°C

197. A 67-year-old patient who undergoes treatment for bronchial asthma presents with limb tremor, headache, insomnia, extrasystole. What drug might have caused such symptoms?

- a. Intal
- b. Acetylcysteine
- c. Prednisolone
- d. Tavegil
- e. Theophylline**

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

- a. First section of the liabilities balance sheet
- b. Fourth section of the liabilities balance sheet
- c. Profit and Loss Account
- d. Liabilities
- e. Assets**

199. A 40-year-old patient suffers from bronchial asthma and cardiac rhythm disturbance in form of bradyarrhythmia. Drugs of which pharmacological group should be administered for bronchospasm elimination?

- a. Muscarinic cholinomimetics
- b. Beta-adrenoceptor blockers
- c. Muscarinic receptor blockers**
- d. Anticholinesterase drugs
- e. Muscle relaxants

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

- a. Decelerated drug metabolism in liver
- b. Change of receptor sensibility
- c. Increased drug dosage
- d. Accelerated drug metabolism in liver**
- e. Reduced protein concentration in plasma

201. For isolation of alkaloids from biological material by Kramarenko's method extract is cleaned. For what operation ammonium sulphate is added to extract?

- a. Salting-out**
- b. Centrifugation
- c. Chloroform extraction
- d. Ether extraction
- e. Infusion

202. According to the supply contract with joint-stock company "Darnitsa", a pharmacy warehouse accepted some inventory items. Which department of the warehouse is directly responsible for the goods acceptance?

- a. Stores division
- b. Operations division
- c. Expedition division
- d. Configuration division
- e. Reception division**

203. A pharmacy analyst supervises the state of a refractometer. For its calibration he needs some distilled water. The distilled water must have the following value of the refractive index:

**a. 1,3330**

b. 1,3220

c. 1,3550

d. 1,3440

e. 1,3110

204. In order to fill a burette a pharmacist prepared 2 l of 10% benzoate solution. This operation should be recorded in the following register:

a. Prescription

b. Spot (cash)

c. Packaging

d. Commodity report

**e. Laboratory**

205. months after treatment a patient with coronary heart disease developed tolerance to the prolonged-action nitrates. What drug with nitrate-similar effect should be recommended in this case?

a. Metoprolol

**b. Molsidomine**

c. Prazosin

d. Nifedipine

e. Verapamil

206. Which of the below-listed drugs is used for thrombolytic therapy in case of myocardial infarction?

a. Acetylsalicylic acid

**b. Streptokinase**

c. Phenylinum

d. Heparinum

e. Ticlopidine

207. On the 4th day of treatment with indometacin a 55-year-old patient developed gastrorrhagia as a result of gastric mucosa ulcer. Ulcerogenic effect of this drug is explained by the lowered activity of the following enzyme:

**a. Cyclooxygenase-1 (COX -1)**

b. Lipoxygenase (LOG)

c. Prostacyclin sintetaza

d. Thromboxanetin sintetaza

e. Cyclooxygenase-2 (COX -2)

208. A patient suffering from peptic ulcer was administered ranitidine. Gastric juice acidity has reduced considerably. What mechanism underlies the action of this drug?

a. Autonomic ganglion N-cholinergic receptors blockade

**b. H<sub>2</sub>-histamine receptors blockade**

c. M-cholinergic receptors blockade

d. H<sub>1</sub>-histamine receptors blockade

e. H,K-ATPase activity inhibition

209. A gravida in her 20th week of gestation fell ill with pneumonia. What chemotherapeutical drug may be administered with no risk for the fetus development?

a. Sulfalenum

b. Gentamycin

**c. Benzylpenicillinum**

d. Laevomycetinum

e. Ofloxacinum

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

- a. Aethimizolum
- b. Benzo hexonium
- c. Dithylinum
- d. Cytitonum

**e. Proserinum**

211. A child has accidentally drunk a solution that was used by his grandmother for glaucoma treatment. The solution turned out to be pilocarpine hydrochloride. What drug can be used as an antidote? 2

- a. Aceclidinum
- b. Carbacholinum

**c. Atropinum**

- d. Benzo hexonium
- e. Pentaminum

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

- a. Aralia roots
- b. Berberis roots
- c. Calendula flowers
- d. Ginseng roots

**e. Hawthorn**

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

- a. Radix Taraxaci officinalis

**b. Folium Uvae ursi**

- c. Rizoma et radix Sanquisorbae officinalis
- d. Rizoma Calami
- e. Herba Achilleae millefolii

214. In order to identify a polyatomic glycerin alcohol a pharmacy analyst carries out dehydration reaction with potassium hydrosulfate. The generated hereat product has a strong characteristic smell and gives blue colour to the filter paper moistened with 1% solution of sodium nitroprusside and with piperidine. What product is it?

- a. Chloroform

**b. Acrolein**

- c. Acetic acid
- d. Diethyl ethe
- e. Ethanol

215. A pharmacy analyst analyzes distilled water. For this purpose he brings some amount of the sample material to the boiling point, adds 0,02M solution of potassium permanganate and diluted sulfuric acid. After 5 minutes of boiling the pink colour of the produced solution should not change. The pharmacy analyst tries to detect the following admixture:

- a. Sulfates
- b. Heavy metals
- c. Carbon dioxide
- d. Nitrates

**e. Chemical reducing agent**

216. A tablet production unit produces press-coated tablets. What equipment is used for this purpose?

- a. Eccentric tableting machine
- b. Triturating machine
- c. Dragee pan
- d. Marmerizer

**e. Double pressing tableting machine**

217. A pharmaceutical enterprise produces a dense extract with 0,25% ammonia solution used as an extractant. This dense extract is:

- a. Valerian
- b. Sagebrush (Artemisia)
- c. Licorice**
- d. Male fern
- e. Motherwort (Leonurus)

218. A pharmacy supplies the population with drugs for cash. Specify the VAT on drugs:

- a. 20%
- b. 30%
- c. 10%
- d. 15%
- e. 0%**

219. 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. Development
- b. Maturity**
- c. Growth
- d. Market penetration
- e. Decrease

220. Aerosol production involves application of different groups of propellents. What propellents relate to the group of compressed gases?

- a. Propane, butane, isobutane
- b. Freon
- c. Nitrogen, nitrous oxide, carbon dioxide**
- d. Vinyl chloride, methyl chloride
- e. Methylene chloride, ethylene chloride

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

- a. Penicillamine
- b. Deferoxamium**
- c. Bemegridum
- d. Protamine sulfate
- e. Atropinum

222. A pharmacist revealed incompatibility in the formulation. 3 Rp.: Sol. Collargoli 1%- 10 ml Sol. Adrenalini hydrochloridi 0,1%- 1 ml M.D.S. Nasal drops. What chemical process underlies this incompatibility?

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

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

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

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

- a. Written, physics and chemical



- b. Written and sell control
- c. Written, interrogatory, sell control
- d. Written, qualitative and quantitative analysis
- e. Written, organoleptic, sell control**

225. A pharmacist is preparing fatbased suppositories by method of pouring. What base is to be used for this purpose?

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

226. Preparations on the basis of dandelion roots are recommended for better digestion and as a choleric because this herbal raw material contains:

- a. Essential oil
- b. Saponins
- c. Flavonoids
- d. Bitters**
- e. Balsams

227. Coltsfoot preparations are used for upper airways treatment. During procurement of this herbal raw material the following admixture may appear:

- a. Spring adonis (*Adonis vernalis*)
- b. Common plantain (*Plantago major*)
- c. Great bur (*Arctium lappa*)**
- d. Marsh mallow (*Althaea officinalis*)
- e. Pot marjoram (*Origanum vulgare*)

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

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

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

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

230. A pregnant woman fell ill with severe pneumonia. What antibacterial drug may be prescribed?

- a. Gentamycin sulphate
- b. Ofloxacinum
- c. Co-trimoxazolum
- d. Cefotaxime**
- e. Tetracycline hydrochloride

231. One of the major indicator of drug elimination from the human body is:

- a. Volume of distribution
- b. Bioequivalence
- c. Highest concentration in blood
- d. Effective halfbeak**

e. Bioavailability

232. It is necessary to make rapid analysis of opiates in urine. Which of the following methods is the most sensitive?

- a. Chromatographic
- b. Spectrochemical in the UV region
- c. Extraction photometric
- d. Immunoenzyme**
- e. Photometric

233. TLC-screening is used for omnidirectional investigation of "acid" chloroform extract. For detection of barbiturates following developers are used:

- a. Diphenylamine
- b. Ditzone
- c. Isopropylamine
- d. Diphenylcarbazide and mercury sulfate**
- e. Sodium diethyldithiocarbamate

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

- a. 36 hours**
- b. 40 hours
- c. Irregular working week
- d. 30 hours
- e. 38 hours

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

- a. Ten working days
- b. Five working days
- c. Third banking day**
- d. One week
- e. Such term isn't established

236. Ukraine has a valid list of drugs whose price is subject to the governmental regulation. What is the way of retail price formation for Corvalol 25,0 (produced by "Pharmac" ) providing that this drug is included in the above-mentioned list?

- a. Setting a 35% markup on the manufacturer's price**
- b. Setting a 35% markup on the mediator's price
- c. Setting common consumer price
- d. Setting a 40% mark up on the wholesale price
- e. Setting a 35% markup on the customs price

237. For granule drying different types of dryers are used. The dryer SP-30 relates to the following type:

- a. Sublimation
- b. With silica gel column
- c. With a forced air circulation
- d. With fluidized bed**
- e. Infrared

238. When fenoterol for inhalations is not available in a pharmacy, it can be substituted by the following drug from the group of bronchoselective beta-2-adrenomimetics:

- a. Euphyllinum
- b. Salbutamolum**
- c. Metacinum
- d. Isadrinum

e. Ephedrinum

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

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

240. Mother of a 2-month-old child came to a pharmacy and asked for a febrifuge. What drug should be recommended for the child?

- a. Paracetamol**
- b. Acetylsalicylic acid
- c. Diclofenac sodium
- d. Indometacinum
- e. Nimesulide

241. A patient consulted an ophthalmologist about scotopic vision impairment, cornea dryness. What drug was prescribed?

- a. Pyridoxine
- b. Ascorbic acid
- c. Cocarboxylasum
- d. Retinolum**
- e. Tocopherol

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

- a. Carboxyl
- b. Ketonic
- c. Aldehyde**
- d. Etherific
- e. Amide

243. For the purpose of sales stimulation a pharmaceutical wholesale company grants its customers a discount according to the social contract and on condition of their loyalty. Specify the type of discount: 5

- a. Dealer
- b. Discounts for quantity of purchased goods
- c. -
- d. Bonus**
- e. Seasonal

244. A 6-year-old child with pneumonia was prescribed an antibiotic. After the treatment the child became deaf. Which antibiotic group might have caused this complication?

- a. Macrolides
- b. Cephalosporins
- c. Aminoglycosides**
- d. Natural penicillin
- e. Semisynthetic penicillin

245. A patient suffering from hypertension consulted a doctor about dry cough that was presumably provoked by antihypertensive therapy. What antihypertensive drug had she been taking?

- a. Lisinopril**
- b. Nifedipine
- c. Hydrochlorthiazide
- d. Furosemidum
- e. Atenolol

246. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is measuring iron admixture in a preparation by means of citric and thioglycolic acids. What staining indicates presence of this admixture?

- a. Blue
- b. Black
- c. Green
- d. Yellow
- e. Pink**

247. Development of advertising strategy for promotion of nonprescription drugs includes identification of the target audience. The highest selectivity of consumer audience can be achieved by means of the following advertisement type:

- a. In the printed publication
- b. On TV
- c. On the radio
- d. On transport
- e. At sales outlet**

248. Choose an optimal antibacterial drug for the mycoplasmal pneumonia treatment:

- a. Penicillin
- b. Gentamycinum
- c. Rovamycine**
- d. Ampicillin
- e. Amoksiklav

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

- a. Alder buckthorn (*Frangula alnus*)
- b. Buckthorn**
- c. Blackcurrant
- d. Elder (*Sambucus*)
- e. Blueberry (*Vaccinium myrtillus*)

250. Cardioglycosides of *Adonis vernalis* are used for heart failure treatment. This plant raw material should be stored:

- a. Under normal conditions
- b. According to the list A
- c. According to the list B**
- d. Protected from CO<sub>2</sub>
- e. In metal containers

251. Theory of management currently marks out four the most important approaches to the management. Choose the approach that is NOT applied in the theory of management:

- a. Structured**
- b. Systemic
- c. Different schools dedication approach
- d. Situational
- e. Process approach

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

- a. Payroll payment
- b. Medicinal plant raw material purchasing
- c. Drugs realization**
- d. Amortization charged to operation
- e. Extra-evaluation of laboratory packaging works

253. During inventory of a pharmacy the surplus of inventory holdings was revealed. What actions

concerning the surplus should be taken by the inventory commission?

- a. Confiscation by superior organization
- b. Immediate realization
- c. Writing-off
- d. Take on charge**
- e. Abolishment

254. Which of the listed preparations should be used as antidote and included into the first-aid kit required at factories where acute intoxications with arsenic, mercury, chrome and bismuth compounds are possible?

- a. Morphinum
- b. Droperidolum
- c. Adrenalinum
- d. Atropinum
- e. Unithiolum**

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

- a. Drotaverine
- b. Omeprazole
- c. Acidin pepsinum
- d. Pancreatinum**
- e. De-Nol

256. On the initiative of the manufacturing company some amendments to a drug information leaflet are to be made for the restriction of the drug use. What type of marketing is applied in this case?

- a. Synchromarketing
- b. Incentive
- c. Conversion
- d. Remarketing
- e. Opposed**

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

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

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

- a. Ascorbic acid
- b. Butylhydroxytoluene (BHT)
- c. 0,1 M acid chloride solution
- d. Trilon B
- e. 0,1 M sodium hydroxide solution**

259. O-methylation is an important method of organic substances biotransformation in the body, compounds that are subject to such method contain:

- a. Nitro groups
- b. Carboxyl groups
- c. Amides
- d. Thiol groups
- e. Phenolic groups**

260. Which antiseptic preparation has bactericidal effect due to the formation of atomic oxygen?

- a. Aethonium

- b. Silver nitrate
- c. Chloraminum
- d. Furacilinum

**e. Potassium permanganate**

261. Styles of maize with stigmata containing fatty acids, vitamins, essential oils, saponins and other substances are used as:

- a. Expectorant and antiechic
- b. Bactericidal and astringent
- c. Sedative and anticonvulsant
- d. Cardiotonic and antiarrhythmic

**e. Diuretic and choleric**

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

**a. Stimulates appetite**

- b. Diuretic
- c. Venotonic
- d. Hepatoprotective
- e. Tonic

263. One of the tablet coatings is enterosoluble capsule. They get solved in:

**a. Bowels**

- b. Oral cavity
- c. -
- d. Rectum
- e. Stomach

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

**a. Insolubility of ingredients**

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

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

- a. Redox (oxidation-reduction) processes
- b. Hydrolysis

**c. Sedimentation**

- d. Liberation of gaseous substances
- e. Coagulation of colloidal systems

266. Two pharmaceutical enterprises simultaneously applied to a bank for establishing a running account. The bank refused the application to one of the enterprises. The reason for the refusal is that the enterprise:

a. Has not provided the report on financial results

**b. Has not registered a statute**

- c. Has no stamp
- d. Is located in another administrative area
- e. Has not provided the balance

267. Examination of a patient who has been treated for rheumatoid arthritis for a long time revealed hyperglycemia. What drug might have caused it?

- a. Ibuprofen
- b. Diclofenac sodium

**c. Dexamethasone**

- d. Chloroquine
- e. Levamisole

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

- a. Sterilization by dry heat
- b. Tyndallization
- c. Sterilization by saturation vapor pressure**
- d. Sterilization by gases
- e. By high-frequency current

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

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

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

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

271. A 54-year-old patient who has been suffering from hyperacidic gastritis for several years was prescribed almagel. What pharmacotherapeutical complications on the part of digestive organs may be expected in the first place?

- a. Diarrhea
- b. Constipation**
- c. Anorexia
- d. Nausea
- e. Emesis

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

- a. -
- b. Up to 2 hours**
- c. Not less than 3 hours
- d. Up to 1 hour
- e. 2,5 hours

273. 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 admixture?

- a. Potassium tetraiodomercurate alkaline**
- b. Iron (III) chloride
- c. Potassium sulfate
- d. Acetic acid
- e. Phenolphthalein

274. A 26-year-old patient was diagnosed with community-acquired pneumonia provoked by mycoplasma. Choose the appropriate antimicrobial preparation for the patient treatment:

- a. Amoxicillin
- b. Benzylpenicillinum

- c. Amoksiklav
- d. Rovamycine**
- e. Gentamycinum

275. A 60-year-old patient has essential hypertension stage II, coronary disease, bronchial asthma. After pharmacotherapy correction the patient exhibited a bronchospastic attack, intensified dyspnea. What drug provoked this complication?

- a. Mucaltinum
- b. Salbutamolum
- c. Nifedipine
- d. Euphyllinum
- e. Propranolol**

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

- a. Doxazosin**
- b. Propranolol
- c. Losartan
- d. Diltiazem
- e. Enalapril

277. A 67-year-old patient with chronic heart failure takes digoxin. In order to reduce its side effects the patient's doctor recommended to combine it with the following drug:

- a. Calcium chloride
- b. Panangin**
- c. Euphyllinum
- d. Calcium gluconate
- e. Hydrochlorthiazide

278. A woman who has been treated for infiltrative focal tuberculosis for a long time complains of acute hearing impairment. Which of the following preparations might be the cause of such side effect?

- a. Streptomycin**
- b. Ethambutol
- c. Ethionamidum
- d. Rifampicin
- e. Isoniazid

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

- a. Substances adsorption
- b. Crystallization water exudation
- c. Eutectic formation
- d. Immiscibility
- e. Mixture dampening**

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

- a. Reduction range, container quantity
- b. Percentage of phase, filling temperature
- c. Fractional composition, containers filling method
- d. Exit port diameter, propellant vapour pressure**
- e. System homogeneity, dispersion velocity

281. In order to get registered in state authorities pharmacies as legal persons must possess authorized capital stock. What amount is identified as the authorized capital stock?

- a. The amount of noncurrent assets
- b. Total assets



- c. The amount of debts of an enterprise
- d. The amount recorded in constituent documents**
- e. The amount of fund formation sources

282. In the production of injection solutions the activated carbon is used as:

- a. Chemical resistance of ampoule's glass increasing
- b. Ampoules residual stress relaxation
- c. Buffer system creation
- d. Antioxidant properties increasing
- e. Purification**

283. Which of the listed antibacterial drugs should NOT be administered to a patient with diabetes mellitus type II being treated with glibenclamid?

- a. Benzylpenicillinum
- b. Doxycycline
- c. Midecamycin
- d. Gentamycinum
- e. Co-trimoxazolum**

284. Which of the listed pharmacological groups of antihypertensive drugs is contra-indicated the patients with bronchial asthma?

- a. Beta-adrenergic blocking agent**
- b. Calcium channel blockers
- c. Diuretics
- d. Angiotensin receptors blockers
- e. ACE inhibitor

285. A pharmacist prepared a surface action ointment. What ointment base was used? 9

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

286. At the end of each month a pharmacy manager writes an Inventory report. This document relates to the following type of accounting:

- a. Financial
- b. Accountancy
- c. Intraeconomic**
- d. Statistical
- e. Taxation

287. 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 color of raw materials
- b. Stems remains
- c. No specific odor
- d. Specific taste
- e. Specific odor**

288. After a craniocerebral trauma a patient was administered pyracetam. This drug relates to the following pharmacological group:

- a. Nootropic agent**
- b. Tranquilizers
- c. Neuroleptic
- d. Anesthetic agent
- e. Nonnarcotic (nonopioid) analgetic

289. In order to arrest stenocardia attacks a patient takes nitroglycerin capsules. What is the rational

way of the drug introduction?

a. Sublingual

b. Rectal

c. Hypodermic

d. Inhalation

e. Peroral

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

a. Atropine sulfate

b. Anaprilinum

c. Sodium chloride

d. Platyphyllini hydrotartras

e. Epinephrine hydrochloride

291. A patient with hypertension was administered metoprolol for the arterial pressure reduction. What is its mechanism of action?

a. Antispasmodic

b. Angiotensinic receptors blockade

c. Alpha adrenoceptor blockade

d. Indirect adrenomimetic action

e. Beta adrenoceptor blockade

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

a. Analginum

b. Butadionum

c. Aminalonum

d. Corvalolum

e. Codeine

293. It is necessary to analyse incrustation of reducing tube after Marsh test for arsenicum to exclude in biological materials compounds of:

a. Cadmium

b. Zinc

c. Argentum

d. Waist

e. Stibiy

294. An analyst of the National drug quality control inspection identifies "Sulfametoxazol" by adding the solutions of hydrochloric acid, sodium nitrite and beta-naphthol to the preparation. Thereat intense red colour is observed. What functional group is identified by this reaction?

a. Sulpho group

b. Secondary aromatic amino

c. Primary aromatic amino

d. Carboxyl group

e. Aldehyde group

295. In order to detect an admixture of potassium in medical preparations a pharmacy analyst should carry out a reaction with:

a. Sodium tetraphenylborate

b. Boric acid

c. Salicylic acid

d. Sulfuric acid

e. Sodium tetraborate

296. An analyst of the National drug quality control inspection carries out quantitative analysis of "Resorcin" substance by method of bromatometry (back titration). What indicator is used by doing so?

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- a. Phenolphthalein
- b. Sodium eozinat
- c. Ammonium iron (III) sulfate
- d. Potassium chromate

**e. Starch**

297. A patient with cholelithiasis was prescribed the following drug for the purpose of cholesterol gallstone dissolution:

**a. Ursodeoxycholic acid**

- b. Acetylsalicylic acid
- c. Mefenamic acid
- d. Citric acid
- e. Gamma-amino-butyric acid

298. For thrombosis treatment a patient was prescribed a drug from the group of direct anticoagulants. What drug is it?

a. Vikasol

**b. Heparin**

- c. Syncumar
- d. Fenilin (phenylinum)
- e. Neodicumarin

299. A pharmaceutical enterprise produces nitroglycerine tablets. What is the method of their production?

- a. Direct pressing with addition of adjuvants
- b. Direct pressing, without adjuvants

**c. Extrusion**

- d. Pressing with preliminary wet granulation
- e. Pressing with preliminary dry granulation

300. Substances that enter the body subject to various transformations under enzymes influence. What is the direction of mono- and polyatomic alcohol metabolism has the largest toxicological value?

**a. Oxidization**

- b. Dealkylation
- c. -
- d. Conjugation
- e. Hydroxylation

301. A 68-year-old female patient has been continuously taking furosemide for heart failure treatment. What drug should be used to prevent hypokalemia in patients taking furosemide?

a. Sustac forte

**b. Panangin**

- c. Mildronatum
- d. Atp-long
- e. Trimetazidine

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

- a. Hydrophilic ointment
- b. Liquid ointment

**c. Suspension ointment**

- d. Alloy ointment
- e. Combined

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

a. Starch

b. Menthol

c. Streptocid

d. Salicylic acid

e. Camphor

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

a. Paracetamol

b. Acetylcysteine

c. Codeine phosphate

d. Doxycycline

e. Ascorbic acid

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

a. Cyanocobalamin

b. Unitiol

c. Oxyferriscorbone

d. Ferrum Lek

e. Ascorbic acid

306. A 25-year-old woman presenting with acute morphine intoxication was given an injection of naloxone that caused rapid improvement of her condition. The mechanism of action of this preparation is based on the block of the following receptors: 11

a. Serotonin receptors

b. GABA-receptors

c. Opioid receptors

d. Dopamine

e. Benzodiazepine receptors

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

a. Jacob's ladder blue (*Polemonium caeruleum*)

b. Mountain angelica (*Aralia mandshurica*)

c. Pot marigold (*Calendula officinalis*)

d. Licorice (*Glycyrrhiza*)

e. Buckeye (*Aesculus*)

308. Specify the reaction to the ester-type drugs that is tolerated by the Ukrainian State Pharmacopoeia:

a. Formation of 3-bromophenol

b. Formation of tylenol

c. Formation of azo dye

d. Formation of indophenol

e. Formation of iron hydroxamates

309. A pharmacist-analyst is measuring the quantity of an adrenaline tartrate substance by method of acid-base titration in nonaqueous solvents. Which indicator is to be used in this case according to the requirements of the Ukrainian State Pharmacopoeia?

a. Eriochrome black

b. Crystal violet

c. Phenolphthalein

d. Methyl orange

e. Thymolphthalein

310. Which of the following drugs a pharmacist-analyst can quantify by cerimetry method?

- a. Acetylsalicylic acid
- b. Phenyl salicylate
- c. Phenobarbital
- d. Vicasolum**
- e. Sodium benzoate

311. A pharmacy makes wholesale purchases of health and hygiene products. An agent works under the contract with the manufacturer and makes deals at the manufacturer's cost. The agent may be entitled to exclusive distribution in some regions. What kind of agent is it?

- a. Dealer
- b. Wholesale agent**
- c. Commission agent
- d. Consignee
- e. Broker

312. Pharmaceutical market is in such a situation when there is only one company selling a certain product. Specify the competitive structure of the market:

- a. Pure competition market
- b. Oligopolistic market
- c. Pure monopoly market and oligopolistic market
- d. Pure monopoly market**
- e. Monopolistic competitive market

313. A pharmaceutical company "Adonis" promotes its new products by means of advertisement that informs the customers about the product, highlights its advantages, typical features and properties. What kind of advertisement is it?

- a. Supporting
- b. Aggressive
- c. Informational**
- d. Indirect
- e. Direct

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

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

315. A pharmacist-analyst is measuring the quantity of a drug by method of indirect bromatometry. Which of the following titrated solutions is to be used?

- a. Sodium thiosulfate**
- b. Sodium edetate
- c. Argentum nitricum (silver nitrate)
- d. Sodium nitrite
- e. Calcium bromate

316. A pharmacist-analyst carries out quantitative analysis of procaine hydrochloride. Which of the following solutions is to be used? 12

- a. Sodium thiosulfate
- b. Potassium bromate
- c. Argentum nitricum
- d. Sodium nitrite**
- e. Sodium edetate

317. A pharmacy analyst carries out purity test of the drug substance "Sodium thiosulfate". Violet

colour, that comes from reaction with sodium nitroprusside, indicates the presence of the following admixture:

- a. Sulphates admixture
- b. Sodium chloride admixture
- c. Iodides admixture
- d. Specific sulfides admixture**
- e. Sulfur admixture

318. 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 method of:

- a. Acidimetry in aqueous medium
- b. Nitritometry
- c. Bromatometry
- d. Acidimetry in non-aqueous medium**
- e. Iodometry

319. In Ukraine natural persons as small business entities are allowed to use the simplified tax system. What limit on the number of employees is established for such enterprises?

- a. No more than 10 persons**
- b. No more than 30 persons
- c. No more than 50 persons
- d. No more than 40 persons
- e. No more than 20 persons

320. For the natural persons being small business subjects the simplified tax system is effective. But there is a limit of annual proceeds upon sale. What is the boundary amount of proceeds?

- a. Up to 1 million UAH
- b. Up to 5 million UAH
- c. Up to 750 thousand UAH
- d. Up to 100 thousand UAH
- e. Up to 500 thousand UAH**

321. Simplified tax system implies replacement of several taxes by a single one. What limit on the number of employees is established for the legal persons to implement the simplified tax system?

- a. 50 persons**
- b. 25 persons
- c. 75 persons
- d. 100 persons
- e. 10 persons

322. A pharmacy as a legal person being the small enterprise plans to move to a simplified taxation system from 1 January. What is the limitation of the amount of sales revenue for such companies?

- a. Up to 100 thousand UAH
- b. Up to 1 million UAH**
- c. Up to 250 thousand UAH
- d. Up to 500 thousand UAH
- e. Up to 750 thousand UAH

323. Fatty oil containing unsaturated fatty acids are used for atherosclerosis prevention. What herbal raw material contains such fatty oil?

- a. Chestnut (*Castanea*) seeds
- b. Buckhorn plantain (*Plantago lanceolata*) seeds
- c. Cucurbit seeds**
- d. Parsnip fruitages
- e. Scurfy pea (*Psoralea*) fruitages

324. An ampule production unit produces glucose solution. If the special sort of glucose "for

injections" is not available, then the glucose should be separated from the following admixtures:

- a. Manganese and iron (Fe)
- b. Sulfates and iron (Fe)

**c. Pyretogenetic and dyes**

- d. Pyretogenetic and proteic substances
- e. Proteic substances and dyes

325. A phytochemical production unit produces biogenic stimulators out of different raw materials. Specify the biogenic stimulators of organo-mineral origin:

- a. Extractum Aloes fluidum, Linimentum Aloes, Plasmolum
- b. Peloidinum, Humisolum, Torfotum, Plasmolum, Solcoseryl
- c. Extractum Aloes fluidum, Linimentum Aloes, Succus Aloes, Biosedum
- d. Vitreous body, Placenta injection, Plasmolum, Solcoseryl

**e. Peloidinum, Humisolum, Torfotum, Fibs pro injectionibus**

326. A pharmaceutical enterprise produces water solutions. The solution of the following substance is produced by method of chemical interaction and electrochemically:

**a. Aluminum hydroxide acetate**

- b. Calcium gluconate
- c. Potassium arsenite
- d. Polyvinyl alcohol
- e. Plumbum hydroxide acetate

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

- a. Camphor
- b. Ascorbic acid

**c. Basic Bismuth nitrate**

- d. Xeroform
- e. Calcium gluconate

328. Upper airways diseases can be treated by means of herbal raw materials containing mucilages. The plant source of this compound class is:

- a. Radix Rhodiolae
- b. Radix Belladonnae
- c. Radix Inulae
- d. Radix Ipecacuanhae

**e. Radix Althaeae**

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

**a. Cholesterol**

- b. Naphthalene
- c. Anthracene
- d. Phenanthrene
- e. Indole

330. According to the requirements of the Ukrainian State Pharmacopoeia, a pharmacy analyst is determining calcium gluconate quantity by method of complexometric titration. What indicator is to be used?

**a. Calconcarboxylic acid**

- b. Crystal violet
- c. Tropeoline 00
- d. Thymolphthalein
- e. Methyl red

331. Reaction with KI solution which is called "Golden Rain Reaction" helps to detect presence of the following toxic metal:

a. Pb

b. Cu

c. Mn

d. Ag

e. Ba

332. Presence of ethanol in a biological sample can be demonstrated by the following reaction:

a. Liberman's reaction

b. With iron (III) chloride

c. With sodium nitroprusside

d. With Frede's reagent

e. Iodoform test

333. Preparations containing cardiosteroids are produced out of the following herbal raw material:

a. *Herba Convallariae*

b. *Radix Taraxaci*

c. *Folia Sennae*

d. *Folia Ficus Caricae*

e. *Cortex Quercus*

334. A laboratory received some herbal raw material for analysis. It is a composition of ovoid-pointed leaves up to 25 cm long and 20 cm wide; the leaf base is cuneate, the leaf edge is emarginate, The cutting is long and cylindric. The leaf venation is pinnatisect; the midrib and the first-order veins project significantly on the inferior surface of the leaf. The superior leaf surface is dark green, the inferior surface is light green. The plant has a weak narcotic smell. The taste cannot be determined. The plant is poisonous! The described herbal raw material relates to the following plant:

a. *Vinca minor*

b. -

c. *Passiflora incarnata*

d. *Chelidonium majus*

e. *Datura stramonium*

335. It is necessary to prescribe non-steroid anti-inflammatory drug for patient with rheumatoid arthritis and concomitant duodenal ulcer. Which drug is the drug of choice in this case?

a. Paracetamol

b. Acetylsalicylic acid

c. Celecoxib

d. Analgin

e. Diclofenac sodium

336. A pharmacist is preparing powders according to the following formulation: 14 Rp.:

Scopolamini hydrobromidi 0,0003 Ephedrini hydrochlorodi 0,05 Sachari 0,15 M.f. pulvis D.t.d. № 10 S.

1 powder thrice a day. Calculate the mass of 1 powder providing that the trituration (1:100) is used:

a. 0,203

b. 0,20

c. 0,23

d. 0,15

e. 0,17

337. A pharmacist prepared a suspension. It must contain the following amount of fluid in order to comply with Deriagin's rule:

a. 0,9-2 millilitres for 1,0 substance

b. 0,1-1,0 millilitre for 1,0 substance

c. 1-0,8 millilitre of 1,0 substance

d. 1,5-0,7 millilitre for 1,0 substance

e. 0,4-0,6 millilitre for 1,0 substance

338. 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 for the following concept:

- a. Financial loss
- b. Business risk**
- c. Labour loss
- d. Loss of property
- e. Loss of time

339. The total of business transaction records of assets and liabilities in the accounting statement for a certain period is called:

- a. Credit
- b. Balance
- c. Amount of balance
- d. Debit
- e. Turnover**

340. Novocaine metabolism in the organism results in generation of p-aminobenzoic acid. What metabolic process underlies this conversion?

- a. Hydrolysis**
- b. Oxidization
- c. Conjugation
- d. Rehabilitation
- e. Dealkylation

341. Tanning agents of silverweed roots and rhizomes are used as an astringent. What species of silverweed is pharmacopoeial?

- a. *Potentilla pilosa*
- b. *Potentilla argentea*
- c. *Potentilla erecta***
- d. *Potentilla impolita*
- e. *Potentilla anserina*

342. Some domestic and foreign hepatoprotective activity preparation are made of holy thistle bearing. Purity of this material is determined by the content of:

- a. Vitamins
- b. Terpenoids
- c. Coumarins
- d. Alkaloids
- e. Flavolignan**

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

- a. *Acorus calamus* roots
- b. Ginseng roots**
- c. Rhizomes and roots of valerian
- d. Elecampane roots
- e. *Polemonium* roots

344. A pharmaceutical enterprise produces neogalenic preparations. Which preparation is produced by the use of Soxhlet circulation apparatus?

- a. Adonisidum**
- b. *Corydalis*
- c. *Celandinum*
- d. *Lantanosidum*
- e. Digoxin

345. A pharmacy analyst identifies sodium hydrocarbonate. What indicator can confirm the presence

of alkaline medium reaction in the sodium hydrocarbonate solution?

- a. Phenolphthalein
- b. Tropaeolin OO
- c. Naphtholbenzein
- d. Ferroin
- e. Starch

346. A pharmacy got an order for powders containing ascorbic acid and sodium hydrocarbonate. What process takes place between the ingredients? 15

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

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

- a. Thioacetamide
- b. Cupric tartrate
- c. Sulfomolybdenum
- d. Acetylacetone
- e. Hypophosphite

348. Salicylates are widely applied in medical practice as anti-inflammatory drugs. For quantitative analysis of salicylic acid the following method is applied:

- a. Argentometry
- b. Nitritometry
- c. Alkalimetry
- d. Permanganatometry
- e. Chelatometry

349. As a pharmacist was serving a customer who ordered a nonprescription drug he realized that the patient didn't apprehend the verbal information. Name the communicative barriers that arise when words or symbols may have different meanings for the information sender and the recipient:

- a. Stereotype mentation
- b. Semantic barriers
- c. Nonverbal barriers
- d. Neglect of facts
- e. Failure to understand the importance of information

350. A pharmacist has applied for a job of a stockkeeper at a wholesale pharmaceutical enterprise. What trial period doesn't require agreement with the trade-union committee?

- a. Up to four months
- b. Up to six months
- c. Up to one month
- d. Up to two months
- e. Up to three months

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

- a. Sales promotion
- b. Personal sale
- c. TV advertising
- d. "Public relations"
- e. Periodical advertising

352. Incoming control is conducted in the course of wholesale and retail trade, such control is carried out during receipt of goods by visual inspection or analysis of drug. Incoming control is carried out by

authorized person, which is assigned by:

- a. Proprietor of an enterprise
- b. The order of head of territorial inspection
- c. State inspection of drugs quality control
- d. Head of regional structure

**e. Managers order**

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

- a. Rummage (goods remains) at the end of the month
- b. The difference between the sale price and purchase price of goods**
- c. The difference between the sales price and the customs price
- d. The difference between the sales price and markup
- e. The amount of goods sold

354. A joint-stock company involved into production and selling of drug preparations has developed a structure for working with various consuming organizations. Such organizational structure is called:

- a. Array (matrix) structure
- b. Bureaucratic structure
- c. Functional structure
- d. Departmentalization

**e. Divisional structure**

355. Which of the following drug forms is produced in granules?

- a. Revitum
- b. Lincomycin hydrochloride
- c. Diazolinum
- d. Mucaltinum

**e. Plantaglucide**

356. On the base of licorice root different drug dosage forms are produced, notably tablets, powders, syrups, teas. The only unused form is injection solution. Licorice roots exhibit haemolytic properties typical for the following active substances: 16

- a. Essential oils
- b. Alkaloids

**c. Saponins**

- d. Iridoids
- e. Polysaccharides

357. Benzylpenicillin sodium is not used per os, because this drug:

- a. Poorly absorbed in the intestine
- b. Reduces formation of gastric HCl
- c. Is destroyed by penicillinase

**d. Destroys gastric HCl**

- e. Irritates gastric mucosa

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

- a. Atropine sulfate
- b. Scopolamine hydrobromide
- c. Platyphyllini hydrotartras

**d. Glucose**

- e. Papaverine hydrochloride

359. An accountant is recording business transactions of a pharmacy. Which transaction is to be entered on the credit side of the cash-account?

- a. Pharmacies revenue
- b. Money receipt for salaries

c. Accountable person repayment

**d. Payroll**

e. Small retail network revenue

360. Compulsory financial reporting of pharmacies includes the balance sheet. Changes in value, composition and structure of the capital stock are estimated on the base of:

a. IV section of liabilities

b. I section of liabilities + IV section of liabilities

c. I section of liabilities

d. II section of assets + III section of assets

**e. I section of assets**

361. When heroin comes into an organism, it metabolizes chiefly to:

a. 6-acetylmorphine

b. 3-acetylmorphine and morphine

c. Codeine

d. Morphine

**e. Morphine and 6-monoacetylmorphine**

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

a. Powders for external use

**b. Effervescent powder**

c. Powders for oral use

d. Soluble powder

e. Nasal powders

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

a. Cumulation

**b. Tachyphylaxis**

c. Idiosyncrasy

d. Drug dependence

e. Allergy

364. Prescriptions for drugs being subject to the stocktaking and supplied on favourable terms or free of charge except for narcotic (psychotropic) drugs and tramadol are written out:

a. On the form F-3

b. On the pink form

**c. In 2 copies of form F-1**

d. On the form F-1

e. On the forms F-3 and F-1

365. What management style is characterized by manager's particular compliance, when manager initiates goals formation by his subordinate and is ready to accept it without reservations?

a. Collective style

b. Combined style

c. Democratic management style

d. Bureaucratic style

**e. Laissez-faire management style**

366. Activity of pharmaceutical institutions is subject to licensing. What is the duration of licence for drugs and healthcare products sale?

**a. Five years**

b. Two years

c. Three years

- d. Four years
- e. One year

367. In case of loss of license a pharmacist should address an application for a duplicate to a licensing authority. The licensing authority is obliged to issue the duplicate to the applicant 17 no later than:

- a. Three months from the date of application receipt
- b. The duplicate isn't issued
- c. One month from the date of application receipt
- d. Two months from the date of application receipt
- e. Three working days from the date of application receipt**

368. Lapkina-Lazarenko method of ethylene glycol separation enables to isolate it effectively from the objects of chemotoxicological analysis. What is the selective transporter of ethylene glycol from the objects to the distillate?

- a. Chloroform
- b. Acetone
- c. Water
- d. Ethanol
- e. Benzol**

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

- a. Acetylsalicylic acid
- b. Diclofenac sodium
- c. Celecoxib**
- d. Ibuprofen
- e. Indometacin

370. Aerosol department of a pharmaceutical factory uses condensed gases in the capacity of propellents. Which of the following substances relates to the group of condensed gases?

- a. Ethylene chloride
- b. Freon**
- c. Nitrous oxide
- d. Nitrogen
- e. Methylene chloride

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

- a. Has bactericidal effect
- b. Accumulates in the lungs
- c. Poorly absorbed from the injection site
- d. Slowly eliminated from the body**
- e. Pluripotential

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

- a. Diphenhydramine hydrochloride
- b. Ambroxol
- c. Salbutamol
- d. Drotaverine
- e. Cromolyn sodium**

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

- a. In olive oil
- b. In vaseline oil
- c. In alcohol

d. In the minimum amount of treated water

e. In the melted cocoa butter

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

a. 15

b. 8

c. 12

d. 25

e. 30

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

a. Pilocarpine hydrochloride

b. Sodium sulfate

c. Sodium chloride

d. Thiamine chloride

e. Benzylpenicillin sodium salt

376. According to the requirements of the Ukrainian State Pharmacopoeia (Supplement 1), a pharmacy analyst has to carry out quantitative analysis of potassium iodide by means of the following method:

a. Complexonometry

b. Alkalimetry

c. Nitritometry

d. Iodatometry

e. Acidimetry

377. A pharmacy has sulfonamide bisepitol 18 on sale. What chemical compounds are the main components of this drug?

a. Phthalazolum, sulfadimezin

b. Urosulfan, sulfapiridazin

c. Sulfazin, salazodimethoxinum

d. Sulgin, norsulfazol

e. Sulfamethoxazole, trimethoprim

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

a. Gluconic

b. Glyoxylic

c. Hexanic

d. Glutakon

e. Glutamic

379. Public health services attach great importance to the drug quality, for this reason a pharmaceutical enterprise has concentrated its efforts upon the improvement of qualitative characteristics of its products. What concept of marketing management is applied in this company?

a. There is no correct answer

b. Product improvement

c. Modern marketing

d. Production improvement

e. All answers are correct

380. A patient suffering from epilepsy has taken Phenobarbital for a long time and developed drug tolerance. What is the mechanism of this phenomenon development?

a. Acceleration of biotransformation

- b. Receptor's sensitivity enhancement
- c. Substances accumulation in the body
- d. Inhibition of biotransformation
- e. Absorption process reduction

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

- a. Sedimentation
- b. Filtration
- c. Crystallization

d. Heating followed by quick cooling

- e. Adsorption

382. Which of the mentioned below drugs has the following chemical name: n-aminobenzoic acid diethylaminoethyl ester hydrochloride:

- a. Dimedrol
- b. Tetracaine
- c. Streptomycin

d. Novocaine

- e. Streptocid

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

a. Pharmacokinetic incompatibility

- b. Pharmacodynamic incompatibility
- c. Functional drugs antagonism
- d. Drugs synergism
- e. Pharmaceutical incompatibility

384. Inventory in a pharmacy revealed a shortage within the range of natural loss. This shortage will be rated as expenses at the following price:

a. Negotiated price

b. Wholesale prices

- c. Contractual prices
- d. Consumer prices
- e. Quota purchase prices

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

- a. Oxidization
- b. Eutectic

c. Deposition

- d. Moisture-repellant
- e. Insolubility

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

- a. Dibazol
- b. Dichlothiazide
- c. Propranolol
- d. Clonidine

e. Enalapril

387. On the wage of pharmacy employees the personal income tax is levied. What pays are NOT included into the total monthly income being subject to this kind of taxation? 19

- a. The amount of leaf of invalidity

- b. The amount of assistance for the care of patients
- c. The amount of in-kind benefit
- d. The amount of maternity support**
- e. Dividends

388. Ions of some metal make it difficult to detect zinc ions in the mineralizate. For this reason zinc is separated from mineralizate by converting it into:

- a. Sulfide
- b. Tetraiodomercurate
- c. Dithizone
- d. Hexacyanoferrate (II)
- e. Diethyldithiocarbamate**

389. Pharmacy №5 cleared its indebtedness to a supplier in the amount of 3000 uah by drawing this sum from its current account. What changes in the sum total of the balance will be observed?

- a. Total assets and liabilities will not change
- b. Total assets decreased, while liabilities increased by 3000 UAH
- c. Total assets increase, while liabilities decreased by 3000 UAH
- d. Total assets and liabilities will decrease by 3000 UAH**
- e. Total assets and liabilities will increase by 3000 UAH

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

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

391. Restharrow (Ononis) root is used for production of a tincture applied for treatment of haemorrhoidal haemorrhages. Isoflavonoids can be identified in the raw material by means of:

- a. Chromatographic method**
- b. Hemolytic index
- c. Foam number
- d. Biological standardization
- e. Cyanidin test

392. Hawthorn flowers are used for production of cardiogenic drugs. During procurement of this crude drug the flowers of the following plant can appear in it:

- a. Buckthorn
- b. Brier
- c. Elder
- d. Blackthorn**
- e. Bird-cherry

393. A patient being treated in the infectious disease ward for dysentery is administered phthalazol. What is the reason for phthalazol being used only for treatment of enteric infections?

- a. Slowly eliminated from the body
- b. The high degree of reabsorption in the kidneys
- c. The drug is not absorbed from the gastrointestinal tract**
- d. Rapidly absorbed in the gastrointestinal tract
- e. Rapidly excreted in unchanged form

394. An analytical laboratory is studying substance of calcium lactate. In presence of ammonium chloride calcium cation forms white crystalline precipitation with the following reagent:

- a. Potassium permanganate
- b. Sodium chloride



**c. Potassium ferrocyanide**

d. Sodium tetraborate

e. Sodium cobaltinitrite

395. A consulting pharmacist informed a patient about possible side effect of metronidazole that is normally provoked by alcohol intake. What is the mechanism of this phenomenon?

a. Enzyme acetylcholinesterase blocking

b. Enzyme alcohol dehydrogenase activation

**c. Enzyme alcohol dehydrogenase blocking**

d. Enzyme acetylcholinesterase activation

e. Enzyme glucose 6-phosphate dehydrogenase activation

396. Analytical laboratories often use 2,6-dichlorophenolindophenol solution, which is normally blue and can be decolorized by the reducing agents. What drug can be identified by means of 2,6-dichlorophenolindophenol solution?

a. Nicotinic acid

b. Salicylic acid

**c. Ascorbic acid**

d. Benzoic acid

e. Acetylsalicylic acid

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

a. Central nervous system depression effect

b. Withdrawal (abstinence) syndrome

**c. Orthostatic hypotension**

d. Taste violation

e. Diarrhea

398. Which of the following reagents should be added to the isoniazid to achieve blue colour and precipitation that turns light-green and emits gases when heated?

a. Silver nitrate solution

b. Hydrochloric acid solution

c. Iron (III) chloride solution

**d. Copper sulfate solution**

e. Alkaline solution

399. A 40-year-old patient suffers from bronchial asthma and cardiac rhythm disturbance in form of bradyarrhythmia. Drugs of which pharmacological group should be administered for bronchospasm suppression?

a. Beta-blockers

b. Cholinesterase inhibitors

c. Muscle relaxant

**d. M-cholinergic antagonists**

e. M-cholinomimetics

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

a. Atropine sulfate

b. Nicotine

**c. Dithylinum**

d. Methacin

e. Hygronium

401. During local anaesthetization novocaine solution is usually compounded with solution of adrenaline hydrochloride. What is the purpose of this action?

a. Algesia reduction

**b. Vasoconstriction**

- c. Increase in smooth muscle tone
- d. Vasodilatation
- e. Decrease in smooth muscle tone

402. Which of the below-listed drugs is used for thrombolytic therapy in case of myocardial infarction?

- a. Heparine
- b. Ticlopidine
- c. Acetylsalicylic acid
- d. Streptokinase**
- e. Phenylinum

403. On the 4th day of treatment with indometacin a 55-year-old patient developed gastrorrhagia as a result of gastric mucosa ulcer. Ulcerogenic effect of this drug is explained by the lowered activity of the following enzyme:

- a. Lipoxigenase (LOG)
- b. Cyclooxygenase-2 (COX-2)
- c. Cyclooxygenase-1 (COX-1)**
- d. Prostacyclin synthetase
- e. -

404. A 45-year-old patient has been taking neodicumarinum for thrombophlebitis for two weeks. The regular blood test revealed a decrease in prothrombin concentration, microhematuria. Which drug should be used as neodicumarinum antagonist?

- a. Vicasol**
- b. Sodium citrate
- c. Aminocaproic acid
- d. Heparin
- e. Protamine sulfate

405. A patient complaining of dry mouth, photophobia and blurred vision has been delivered to the admission ward. Objectively: the skin is hyperemic, dry, mydriatic pupils and tachycardia are present. He has been diagnosed with belladonna alkaloids intoxication. Which of the drugs should be given as an antidote?

- a. Dipiroxim
- b. Neostigmine**
- c. Pylocarpine
- d. Aceclidine
- e. Armin

406. A 52-year-old patient was diagnosed with systemic amebiasis accompanied by bowels, liver and lungs affection. What preparation should be administered?

- a. Phthalazol
- b. Metronidazole**
- c. Tetracycline
- d. Chiniofon
- e. Chingamin

407. A gravida in her 20th week of gestation got ill with pneumonia. What chemotherapeutical drug may be administered with no risk for the fetus development?

- a. Ofloxacinum
- b. Benzylpenicillinum**
- c. Sulfalenum
- d. Gentamycin
- e. Laevomycetinum

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

- a. Cytitonum

b. Dithylinum

**c. Neostigmine**

d. Aethimizolum

e. Benzohexonium

409. A pharmacy depot received a batch of common plantain leaves. According to the requirements of the Pharmacopoeia, this herbal raw material is of adequate quality if it contains the following active substances:

a. Essential oils

**b. Polysaccharides**

c. Tannins

d. Flavonoids

e. Anthracene derivatives

410. A pharmacy analyst analyzes distilled water. For this purpose he brings some amount of the sample material to the boiling point, adds 0,02 M solution of potassium permanganate and diluted sulfuric acid. After 5 minutes of boiling the pink colour of the produced solution should not change. The pharmacy analyst tries to detect the following admixture:

a. Sulfates

b. Heavy metals

c. Carbon dioxide

d. Nitrates

**e. Chemical reducing agent**

411. A pharmacy supplies the population with drugs for cash. Specify the VAT on drugs:

a. 10%

b. 20%

c. 30%

**d. 0%**

e. 15%

412. Aerosol production involves application of different groups of propellents. What propellents relate to the group of compressed gases?

a. Methylene chloride, ethylene chloride

**b. Nitrogen, nitrous oxide, carbon dioxide**

c. Propane, butane, isobutane

d. Freons

e. Vinyl chloride, methyl chloride

413. An analytical laboratory carries out quantitative analysis of sodium citrate by method of ion-exchanging chromatography on a cationite. What titrated solution is to be used for the following titration of generated citric acid?

a. Trilon B

**b. Sodium hydroxide**

c. Potassium iodate

d. Iodine

e. Hydrochloric acid

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

**a. Deferoxamium**

b. Bemegridum

c. Penicillamine

d. Atropinum

e. Protamine sulphate

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

a. Oxidization

b. Precipitation

c. Adsorption

d. Hydrolysis

e. Neutralization

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

a. In the alkaliescent medium

b. In the subacid medium

c. In the acid medium

d. In the neutral medium

e. In the alkaline medium

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

a. Added to molten vaseline

b. Triturated with a part of vaseline

c. Triturated with a few ethanol drops

d. Triturated with a few water drops

e. Triturated with a few vaseline oil drops

418. For granule drying different types of dryers are used. The dryer SP-30 relates to the following type:

a. With silica gel column

b. With a forced air circulation

c. Sublimation

d. Infrared

e. With fluidized bed

419. Specify the herbal raw material with high concentration of carotinoids which is used for production of phytopreparations:

a. Sea-buckthorn fruits

b. Caseweed grass

c. Parsley roots

d. Wild strawberry leaves

e. Currant leaflets

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

a. -

b. Bonus

c. Seasonal

d. Dealer

e. Discounts for quantity of purchased goods

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

a. Capillary opening

b. Ampoule drying

c. Ampoule sterilization

d. Ampoule annealing

e. Ampoule washing

422. 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. Thermostable
- c. Photosensitive
- d. Hydrolytically unstable
- e. Viscous

423. Pharmaceutical plants produce enteric-coated tablets. According to the requirements of the State Pharmacopoeia of Ukraine, the coating mustn't disintegrate in the acidic medium within the following period:

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

424. A patient with depression has been administered a drug from the group of tricyclic antidepressants. Specify this drug:

- a. Caffeine
- b. Amitriptyline
- c. Droperidol
- d. Phenazepam
- e. Aminalonum

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

- a. Ethyl ether
- b. Ethyl benzoate
- c. Isoamyl alcohol
- d. Iodoform
- e. Phenol

426. A patient with hypertension has been administered one of antihypertensive drugs. Blood pressure dropped back to normal, but the patient has developed a persistent dry cough. Which of the following drugs has such a side effect?

- a. Enalapril maleate
- b. Clonidine
- c. Nifedipine
- d. Furosemide
- e. Propranolol

427. A patient suffering from ulcer disease was prescribed famotidine. What is the mechanism of its action?

- a. Inhibition of adenosine triphosphatase activity
- b. Block of cholinergic receptors of sympathetic ganglions
- c. Block of H1-histamine receptors
- d. Block of muscarinic cholinergic receptors
- e. Block of H2-histamine receptors

428. According to the requirements of the State Pharmacopoeia of Ukraine, a pharmacy analyst determines iron admixture in a preparation by means of citric and thioglycolic acids. What staining indicates presence of this admixture?

- a. Blue
- b. Black
- c. Green
- d. Yellow
- e. Pink

429. Name the reason for the reduction of anticoagulant effect of syncumar when it is applied in combination with phenobarbital:

- a. Mutual inactivation
- b. Phenobarbital activates microsomal liver enzymes**
- c. Development of syncumar allergy
- d. Phenobarbital inhibits microsomal liver enzymes
- e. These drugs are antagonists

430. Calamus rhizome is likely to be confused with some other plant rhizome that can be found as an admixture in the herbal raw material. Specify the most likely admixture:

- a. Elecampane roots
- b. Valerian rhizome
- c. Iris rhizome**
- d. Althaea roots
- e. Phlojodicarpus roots

431. Tannins can be used as an antidote for alkaloid poisoning. What herbal remedy should be applied in case of such intoxication:

- a. Althaea root
- b. Calamus rhizome
- c. Cinquefoil root**
- d. Rhizome and roots of madder
- e. Elecampane root

432. Tannins have astringent effect and are used for treatment of colitis, enterocolitis, diarrhea. What herbal raw material contains a lot of tannins?

- a. Fructus Rhamni catharticae
- b. Fructus Frangulae
- c. Fructus Sambucci nigri
- d. Fructus Ribes nigri
- e. Fructus Myrtilli**

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

- a. Extra-evaluation of laboratory-packaging works
- b. Drug sales**
- c. Payroll payment
- d. Plant raw material purchases
- e. Amortization charged to operation

434. During inventory of a pharmacy the surplus of inventory holdings was revealed. What actions concerning the surplus should be taken by the inventory commission?

- a. Immediate realization
- b. Writing-off
- c. Confiscation by superior organization
- d. Abolishment
- e. Take on charge**

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

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

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

a. Pancreatinum

b. De-Nol

c. Acidin pepsinum

d. Omeprazole

e. Drotaverine

437. Underground organs of medicinal plants that accumulate the most of active substances should be collected:

a. After the seeds have ripened and the overground parts died off

b. During the green fruiting

c. At the stem extension stage

d. At the budding stage

e. At the flowering stage

438. In Ukraine the out-patients are supplied with narcotic and psychotropic drugs only by prescription. Medicoprophylactic institutions receive prescription blanks (Form 3) from the following source:

a. Typography

b. Pharmaceutical corporation

c. City's health department

d. Wholesale companies

e. Pharmacy storehouse

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

a. To triturate it with glycerine or chloroform

b. To triturate it with other components of the formulation

c. To triturate it thoroughly with sugar

d. To triturate it with alcohol or ether

e. To triturate it with purified water

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

a. Ethanol

b. Purified water

c. Glycerol

d. Dimexid

e. Ether

441. O-methylation is an important method of organic substances biotransformation in the body, compounds that are subject to such method contain:

a. Carboxyl groups

b. Phenolic groups

c. Thiol groups

d. Amides

e. Nitro groups

442. Styles of maize with stigmata containing fatty acids, vitamins, essential oils, saponins and other substances are used as:

a. Cardiotonic and antiarrhythmic

b. Sedative and anticonvulsant

c. Diuretic and choleric

d. Expectorant and antiepileptic

e. Bactericidal and astringent

443. One of the tablet coatings is enterosoluble capsule. They get solved in:

a. -

b. Bowels

- c. Oral cavity
- d. Stomach
- e. Rectum

444. It is required to analyse some herbal raw material in form of shiny black drupes up to 6-8 mm in diameter; the bone is large, very firm, spherical, light brown, with a single seed; it has a sweet, slightly astringent taste. This herbal raw material should be qualified as a fruit of:

- a. Buckthorn
- b. Hawthorn
- c. Blueberry
- d. Black chokeberry
- e. Bird cherry**

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

- a. Nimesulide**
- b. Indomethacin
- c. Acetylsalicylic acid
- d. Piroxicam
- e. Diclofenac

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

- a. Sterilization by dry heat
- b. Tyndallization
- c. Sterilization by saturation vapor pressure**
- d. Sterilization by gases
- e. By high-frequency current

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

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

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

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

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

- a. Not less than 3 hours
- b. Up to 1 hour
- c. Up to 2 hours**
- d. 2,5 hours
- e. -

450. A 26-year-old patient was diagnosed with community-acquired pneumonia provoked by mycoplasma. Choose the appropriate antimicrobial preparation for the patient treatment:

- a. Amoksiklav
- b. Rovamycine**



- c. Gentamycinum
- d. Amoxicillin
- e. Benzylpenicillinum

451. After an emotional stress a 60-year-old patient presented with chest pain irradiating to the left arm. Specify a drug that relieves pain in this case:

- a. Propranolol
- b. Metoprolol
- c. Nifedipine
- d. Diltiazem
- e. Nitroglycerine**

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

- a. Propranolol
- b. Enalapril
- c. Doxazosin**
- d. Diltiazem
- e. Losartan

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

- a. Immiscibility
- b. Eutectic formation
- c. Mixture dampening**
- d. Substances adsorption
- e. Crystallization water exudation

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

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

455. In order to get registered in state authorities pharmacies as legal persons must possess authorized capital stock. What amount is identified as the authorized capital stock?

- a. The amount recorded in constituent documents**
- b. The amount of fund formation sources
- c. The amount of debts of an enterprise
- d. Total assets
- e. The amount of noncurrent assets

456. According to the current legislation, pharmacists get the sickness benefit in case of temporary disability. Specify the source of payment for the first 5 days of being on the sick leave:

- a. Environment stimulation fund
- b. Reserve fund
- c. Pharmacy revenues
- d. Pension fund
- e. Pharmacy expenditures**

457. Which of the listed antibacterial drugs should NOT be administered to a patient with diabetes mellitus type II being treated with glibenclamid?

- a. Doxycycline
- b. Co-trimoxazolum**
- c. Gentamycinum

- d. Midecamycin
- e. Benzylpenicillinum

458. What drug may cause constipation in a patient undergoing combined therapy for arterial hypertension?

- a. Furosemide
- b. Panangin
- c. Acetylsalicylic acid in small dosages
- d. Verapamil**
- e. Trimetazidine

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

- a. Optics
- b. Baby food
- c. Medicaments**
- d. Curative cosmetics
- e. Perfumes

460. Preliminary tests involve using various kinds of indicator paper. Blackening of the indicator paper treated with plumbum acetate indicates that the biological object contains:

- a. Sodium hydroxide
- b. Hydrogen sulphide**
- c. Ammonium hydroxide
- d. Hydrogen chloride
- e. Sulphuric acid

461. An analytical chemist makes a test for the presence of sodium thiosulphate. Select a reagent which allows to detect the thiosulphate ion:

- a. Hydrochloric acid**
- b. Potassium iodide
- c. Magnesium sulfate
- d. Sodium hydroxide
- e. Sodium bromide

462. An analytical chemist determines the admixture of sulphates in the boric acid. What is the main reagent that he has to add:

- a. Silver nitrate
- b. Ammonium oxalate
- c. Sodium sulphide
- d. Potassium ferrocyanide
- e. Barium chloride**

463. In order to arrest stenocardia attacks a patient takes nitroglycerin capsules. What is the rational way of the drug introduction?

- a. Hypodermic
- b. Sublingual**
- c. Rectal
- d. Peroral
- e. Inhalation

464. Recommend a patient with acute bronchitis a mucolytic drug that ease difficulty in expectoration:

- a. Glaucine
- b. Diclofenac sodium
- c. Drotaverine hydrochloride
- d. Acetylcysteine**
- e. Loratadine

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

a. Fenofibrate

b. Pyracetam

c. Phenylbutazone

d. Dexamethasone

e. Ascorbic acid

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

a. Analgin

b. Paracetamol

c. Dicaine

d. Novocaine

e. Acetylsalicylic acid

467. 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 share

b. An unattractive segment

c. A market niche

d. A segment requiring further research

e. A market door

468. An obtained mineralisate contains sulphates of lead, barium and strontium in form of white precipitation. What procedure will allow to separate the lead sulphate?

a. Dissolution in ammonium acetate

b. Conversion into carbonate

c. Conversion into arsine

d. Conversion into diethyldithiocarbamate

e. Dissolution in concentrated sulphuric acid

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

a. 4,0

b. 0,04

c. 0,2

d. 0,4

e. 2,0

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

a. 90%

b. 96%

c. 60%

d. 40%

e. 70%

471. A licensed state-owned pharmacy obtains and retails narcotic drugs. Which state authority develops and revises the list of the drugs allowed in Ukraine?

a. Public Joint Stock Company "Medicaments of Ukraine"

b.

c. State Inspectorate for Quality Control of Drugs

d. State Pharmacological Centre

e. State service on Narcotic Drugs Control of Ukraine

472. A pharmacy is engaged in retail sales of drugs. What group of drugs does atropine sulphate

relate to?

- a. Over-the-counter
- b. Drastic
- c. Toxic**
- d. Narcotic
- e. Psychotropic

473. An employee of a pharmaceutical company has been commissioned with marketing research on the regional market of antiarrhythmic drugs. What stage of research would he prefer in the first place?

- a. Collection of primary information
- b. Preparation of report
- c. Submission of report
- d. Collection and analysis of secondary information**
- e. Analysis of primary information

474. A pharmaceutical company "Pfizer" is focused on offering the best quality goods at a high price which should cover the costs of research and development as well as production of high quality products. Despite the high price, the product is still in demand. What are the goals of the company's price policy?

- a. Winning the market leadership in respect of product quality**
- b. Maintaining status quo
- c. Increasing the company's assortment
- d. Increasing the market share
- e. Ensuring the company's survival

475. A pharmaceutical company "Pharmasvet" has patented and produces now a new hypoglycemic preparation. The company markets this product directly through the own sales departments, affiliated sales companies, pharmacy network. Marketing policy of this pharmaceutical company can be characterized by the channel of the following level:

- a. Three-level
- b. Four-level
- c. One-level
- d. Two-level
- e. Zero level**

476. A patient with cholelithiasis was prescribed the following drug for the purpose of cholesterol gallstone dissolution:

- a. Acetylsalicylic acid
- b. Gamma-amino-butyric acid
- c. Ursodeoxycholic acid**
- d. Citric acid
- e. Mefenamic acid

477. Which of the listed methods of filling ampoules with injectable solutions can protect the capillaries from contamination with thick and viscous solutions?

- a. Turbo-vacuum method
- b. Vacuum method
- c. Syringe method**
- d. Steam condensing method
- e. Solution squeezing method

478. Production of injection solutions involves an operation of solution filtration. What filters are used for sterile filtration?

- a. Nutsch filters
- b. Pressure filters
- c. Mushroom filter
- d. Filter candles**

e. Filter developed by the Kharkiv Chemo-pharmaceutic Research Institute

479. A 68-year-old female patient has been continuously taking furosemide for heart failure treatment. What drug should be used to prevent hypokalemia in patients taking furosemide?

- a. Mildronatum
- b. Atp-long
- c. Panangin**
- d. Trimetazidine
- e. Sustac forte

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

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

481. Quantitative determination of silver nitrate is done by method of thiocyanatometry. What indicator is used in this case?

- a. Potassium chromate
- b. Phenolphthalein
- c. Iron (III) ammonium sulphate**
- d. Methylene blue
- e. Sodium eosinate

482. An analytical chemist was identifying xeroform in reaction with sodium sulphide. As a result of reaction a black solid dropped out. What ion was detected?

- a. Zinc
- b. Lead
- c. Bismuth**
- d. Copper
- e. Silver

483. During the chemico-toxicological study of the dialysate of an aqueous extract, the ammonia test IS NOT carried out if the dialysate includes the following substance:

- a. Nitrous acid
- b. Hydrogen sulphide**
- c. Sulphuric acid
- d. Sulphurous acid
- e. Nitric acid

484. A forensic chemical laboratory received an object for analysis. The analysis involves quantitative determination of mercury by means of a reaction with dithizone. What physical-chemical method is used within this analysis?

- a. Gas-liquid chromatography
- b. IR spectrophotometry
- c. Thin layer chromatography
- d. Extraction photocolourimetry**
- e. UV spectrophotometry

485. A woman in the III trimester of pregnancy has an acute respiratory viral disease accompanied with body temperature rise up to 39°C. Which of the drugs should be recommended?

- a. Paracetamol**
- b. Indomethacin
- c. Diclofenac sodium
- d. Acetylsalicylic acid
- e. Celecoxib

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

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

487. A patient presents with morphine intoxication. Which drug should be injected as an antidote?

- a. Unithiol
- b. Naloxone**
- c. Bemegride
- d. Lobeline hydrochloride
- e. Atropine sulphate

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

- a. Quinine
- b. Coniine**
- c. Cocaine
- d. Strychnine
- e. Atropine

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

- a. Wage fund**
- b. Sales volume
- c. The left-over goods in terms of settlement prices
- d. Turnover
- e. The rate of trade mark-up

490. A pharmacy received drugs that are included in the National List of Essential Medicines. When supplying these drugs to the public hospitals, pharmacies are entitled to mark-up the drug charges at the rate of:

- a. 20%
- b. 10%**
- c. 40%
- d. 50%
- e. 30%

491. Sales of medical cosmetics retailed in pharmacies are taxable at the VAT rate of 20%. Who is charged with it?

- a. End consumer**
- b. Wholesale intermediary company firm
- c. Customs service
- d. Pharmacy
- e. Product manufacturer

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

- a. Ascorbic acid
- b. Ferrum Lek
- c. Oxyferriscorbone
- d. Cyanocobalamine**
- e. Unitiol

493. Essential oil of rose is used as an anti-inflammatory and antispasmodic agent. It is localized in

the following excretory organs:

- a. Essential oil glandules
- b. Secretory cells
- c. Glandular hairs
- d. Glandular spots**
- e. Essential oil conceptacles

494. A chemist of an analytic laboratory has to prepare turbidity standards according to the requirements of Pharmacopoeia. What substances are to be used as the reference?

- a. Furacilinum and calcium chloride
- b. Hexamethylenetetramine and hydrazine sulphate**
- c. Sodium chloride and calcium nitrate
- d. Calcium sulphate and glycerin
- e. Potassium chloride and barium sulphate

495. A pharmacist plans voluntary termination of the open-ended employment contract for the reason of her husband's transfer to another area. Specify the form and term of notice that should be given to the pharmacy director:

- a. Two-week notice in written form**
- b. One-month notice in written form
- c. Two-day notice in written form
- d. Five-day notice in written form
- e. One-week notice in written form

496. A pharmacy makes wholesale purchases of health and hygiene products. An agent works under the contract with the manufacturer and makes deals at the manufacturer's cost. The agent may be entitled to exclusive distribution in some regions. What kind of agent is it?

- a. Wholesale agent**
- b. Commission agent
- c. Dealer
- d. Broker
- e. Consignee

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

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

498. During the identification of a drug an analytical chemist of the State Inspectorate for Quality Control performs a lignin test. Specify this drug:

- a. Analgin
- b. Streptotcid**
- c. Cortisone acetate
- d. Ascorbic acid
- e. Methionine

499. A pharmacist-analyst carries out quantitative analysis of procaine hydrochloride. Which of the following solutions is to be used?

- a. Sodium thiosulfate
- b. Potassium bromate
- c. Argentum nitricum
- d. Sodium nitrite**
- e. Sodium edetate

500. The main active components of hawthorn berries are flavonoids. What is their pharmacological

effect?

- a. Antispasmodic and anti-inflammatory
- b. Hypotensive and sedative**
- c. Tonic and antispasmodic
- d. Laxative and sedative
- e. Diuretic and styptic

501. Name a "metal poison" which is isolated from the biological material by the method of destruction:

- a. Silver
- b. Arsenic
- c. Stibium
- d. Cadmium
- e. Mercury**

502. Toxic substances can be isolated from the objects of biological origin by different methods. In case of intoxication with pesticides -derivatives of phosphoric acids -the following method is applied:

- a. Distillation with water steam from the alkaline medium
- b. Infusion with water acidified with chloric acid
- c. Dialysis from alkalized solutions
- d. Infusion with organic solvents**
- e. Infusion with alkalized water

503. A pharmacy analyst carries out purity test of the drug substance "Sodium thiosulfate". Violet colour, that comes from reaction with sodium nitroprusside, indicates the presence of the following admixture:

- a. Sulphates admixture
- b. Sodium chloride admixture
- c. Iodides admixture
- d. Specificsulfides admixture**
- e. Sulfur admixture

504. An analytic laboratory received "Aether anaestheticus" for analysis. Which reagent should be used for detection of acetone and aldehyde admixtures according to the State Pharmacopoeia of Ukraine?

- a. Ammonium solution of argentum nitrate
- b. Sodium hydrosulphite
- c. Hydroxylamine solution
- d. Alkaline solution of potassium tetraiodomercurate**
- e. Aqueous solution of potassium iodide

505. Activity of an organization depends on various factors. What factors refer to the internal environment of the organization?

- a. Abilities, skills and talent of staff**
- b. Infrastructure
- c. Consumers
- d. Public authorities
- e. Economy status

506. Financial accountability of pharmacies consists of separate account forms. Which form presents accounts payable for the goods purchased?

- a. Financial performance report, form 2
- b. Net worth statement, form 3
- c. Balance assets, form 1
- d. Balance sheet, form 1**
- e. Financial performance report, form 2m

507. In Ukraine natural persons as small business entities are allowed to use the simplified tax



system. What limit on the number of employees is established for such enterprises?

- a. No more than 40 persons
- b. No more than 50 persons
- c. No more than 20 persons
- d. No more than 30 persons
- e. No more than 10 persons**

508. For the natural persons being small business subjects the simplified tax system is effective. But there is a limit of annual proceeds upon sale. What is the boundary amount of proceeds?

- a. Up to 750 thousand UAH
- b. Up to 1 million UAH
- c. Up to 5 million UAH
- d. Up to 500 thousand UAH**
- e. Up to 100 thousand UAH

509. Fatty oil containing saturated fatty acids is used for atherosclerosis prevention. Specify the medicinal plant that is used for oil production:

- a. Flax seeds**
- b. Dill seeds
- c. Hawthorn fruits
- d. Black chokeberry fruits
- e. Fennelflower seeds

510. A tablet shop produces trituration tablets. What quality indicators ARE NOT relevant for these tablets?

- a. Disintegration and dissolution
- b. Homogeneity of content
- c. Microbiological purity
- d. Abrasion, resistance to crushing**
- e. Homogeneity of dosage

511. A pharmaceutical enterprise produces water solutions. The solution of the following substance is produced by method of chemical interaction and electrochemically:

- a. Plumbum hydroxide acetate
- b. Polyvinyl alcohol
- c. Potassium arsenite
- d. Aluminum hydroxide acetate**
- e. Calcium gluconate

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

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

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

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

514. Qualitative reaction for phenol is the reaction with bromine water. What compound is produced as a result of the interaction of phenol with bromine water and drops out as a white solid?

- a. 4-bromophenol
- b. 2,4-dibromophenol
- c. 2-bromophenol
- d. 3-bromophenol
- e. 2,4,6-tribromophenol**

515. Upper airways diseases can be treated by means of herbal raw materials containing mucilages. The plant source of this compound class is:

- a. Radix Ipecacuanhae
- b. Radix Inulae
- c. Radix Althaeae**
- d. Radix Rhodiolae
- e. Radix Belladonnae

516. According to the requirements of the State Pharmacopoeia of Ukraine, a pharmacy analyst should determine procaine hydrochloride by nitritometric method. What indicator is to be used for this purpose?

- a. Crystal violet
- b. Methyl red
- c. Neutral red**
- d. Xylenol orange
- e. Acid chrome blue

517. According to the requirements of the State Pharmacopoeia of Ukraine, a pharmacy analyst should determine fluorouracil by method of nonaqueous titration. What titrated solution is to be used?

- a. Sodium edetate
- b. Tetrabutyl ammonium hydroxide**
- c. Potassium bromate
- d. Sodium nitrite
- e. Ammonium thiocyanate

518. An analytical chemist analyses the substance of ethylmorphine hydrochloride. The substance purity is tested by method of semi-microanalysis. What reagent is used to determine the water admixture?

- a. Biuretic
- b. Molibdeno-vanadium
- c. Hypophosphite
- d. Iodosulphurous**
- e. Methoxyphenyl acetic acid

519. An analytical laboratory carries out an analysis of ferrum sulphate heptohydrate according to the requirements of the State Pharmacopoeia of Ukraine. The test portion of the substance should be titrated with the following solution:

- a. Ammonium cerium sulfate**
- b. Ammonium thiocyanate
- c. Potassium bromate
- d. Sodium edetate
- e. Argentum nitrate

520. A patient consults a pharmacist about taking acetylsalicylic acid as an antiaggregant. What is the daily dose that should be recommended for continuous use?

- a. 2,0-3,0
- b. Over 4,0 g
- c. 0,5-1,0 g
- d. 1,0-2,0 g
- e. 0,1-0,3 g**

521. The main active components of senna leaves and fruits are sennosides A, B, C, D. They relate to

the following class of biologically active substances:

- a. Phenolic acids
- b. Iridoids
- c. Thioglycosides
- d. Anthracene derivatives**
- e. Flavonoids

522. A laboratory received some herbal raw material for analysis. It is a composition of ovoid-pointed leaves up to 25 cm long and 20 cm wide; the leaf base is cuneate, the leaf edge is emarginate. The cutting is long and cylindric. The leaf venation is pinnatisect; the midrib and the first-order veins project significantly on the inferior surface of the leaf. The superior leaf surface is dark green, the inferior surface is light green. The plant has a weak narcotic smell. The taste cannot be determined. The plant is poisonous! The described herbal raw material relates to the following plant:

- a.
- b. Datura stramonium**
- c. Chelidonium majus
- d. Passiflora incarnata
- e. Vinca minor

523. It is necessary to prescribe non-steroid anti-inflammatory drug for patient with rheumatoid arthritis and concomitant duodenal ulcer. Which drug is the drug of choice in this case?

- a. Diclofenac sodium
- b. Celecoxib**
- c. Paracetamol
- d. Acetylsalicylic acid
- e. Analgin

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

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

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

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

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

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

527. 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 for the following concept:

- a. Loss of property
- b. Loss of time
- c. Financial loss

**d. Business risk**

e. Labour loss

528. While studying the reaction of an "acid"chloroform extraction in acidic medium with sodium nitrite, a forensic toxicologist got a compound stained emerald green. Which of the substances is capable of forming the mentioned nitroso compound?

a. Noxiron

b. Salicylic acid

c. Analgin

d. Amidopyrine

**e. Antipyrine**

529. A patient got poisoned with nitrites. Nitrite detection by means of azo dye reaction involves using such acid:

a. Phosphoric

b. Sulphuric

**c. Sulphanilic**

d. Hydrochloric

e. Salicylic

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

a. Rhizomes and roots of valerian

b. Elecampane roots

**c. Ginseng roots**

d. Polemonium roots

e. Acorus calamus roots

531. A patient with bronchial asthma has been administered a drug from the group of beta-adrenergic agonists. Specify this drug:

a. Nitroglycerine

b. Digoxin

c. Diazepam

d. Doxycycline hydrochloride

**e. Salbutamol**

532. An analytical chemist determines the quantitative content of caffeine by method of acidometry in nonaqueous media in compliance with the State Pharmacopoeia of Ukraine. What solution is used as a titrant?

a. Sodium nitrite

**b. Perchloric acid**

c. Potassium bromate

d. Sodium edetate

e. Sodium hydroxide

533. A pharmacy analyst identifies sodium hydrocarbonate. What indicator can confirm the presence of alkaline reaction in the sodium hydrocarbonate solution?

a. Starch

b. Ferroin

c. Naphtholbenzein

**d. Phenolphthalein**

e. Tropeolin OO

534. Substance of calcium pangamate is to be studied in an analytical laboratory. Calcium cation forms a white precipitate with the following reagent:

a. Potassium permanganate

b. Sodium chloride

c. Ammonium oxalate

d. Potassium bromide

e. Sodium cobaltinitrite

535. A chemist of an analytical laboratory studies procaine hydrochloride according to the requirements of the State Pharmacopoeia of Ukraine. What method is recommended by the State Pharmacopoeia of Ukraine for the quantitative analysis of this preparation?

a. Alkalimetry

b. Chelatometry

c. Bromatometry

d. Acidimetry

e. Nitritometry

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

a. Atropine

b. Galantamine

c. Benzohexonium

d. Dithylinum

e. Neostigmine

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

a. Permanganatometry

b. Alkalimetry

c. Nitritometry

d. Argentometry

e. Chelatometry

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

a. Physical dependence

b. Cumulation

c. Tolerance

d. Allergy

e. Potentiation

539. Pharmacy activities are commonly operated by different types of managers. The function of direct control over drug preparation by a pharmacist refers to the following type of management:

a. Technical

b. Managerial

c. Bureaucratic

d. Administrative

e. Institutional

540. A pharmacist has applied for a job of a stockkeeper at a wholesale pharmaceutical enterprise. What trial period doesn't require agreement with the trade-union committee?

a. Up to three months

b. Up to two months

c. Up to six months

d. Up to four months

e. Up to one month

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

a. Periodical advertising

b. Sales promotion

c. "Public relations"

d. TV advertising

**e. Personal sale**

542. During the treatment of chronic heart failure with digoxin in a patient having bradycardia, nausea, vomiting, blurred vision. Which drug is the antidote in this case?

a. Amyl nitrite

b. Atropine sulphate

c. Tetacium calcium

d. Dipiroximum

**e. Unithiol**

543. A biennial or perennial plant from the Apiaceae family has a blue-grey stem branching in its lower part. Its leaves are also blue-grey, finely dissected, with the ultimate filiform segments. The flowers are yellow, in compound umbels. Its fruit is used for production of "dill water". What plant is it?

a. Petroselinum crispum

b. Carum carvi

**c. Foeniculum vulgare**

d. Coriandrum sativum

e. Conium maculatum

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

a. State inspection of drugs quality control

b. Proprietor of an enterprise

c. The order of head of territorial inspection

**d. Managers order**

e. Head of regional structure

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

a. The difference between the sales price and the customs price

b. The difference between the sales price and markup

**c. The difference between the sale price and purchase price of goods**

d. The amount of goods sold

e. Rummage (goods remains) at the end of the month

546. Before the raw plant material is taken over from the supplier, it must be checked for compliance. Which document is the ground for recording raw plant material as received in the pharmacy in case of its approval?

a. Consignation note

b. Invoice

c. -

**d. Acceptance certificate**

e. Write-off certificate

547. The relationships between the demand, supply and price level is studied within the following field of complex market research:

a. Studies of market structure of companies

b. Analysis of sociopsychological features of buyers

c. Studies of market and product requirements

d. Analysis of market segmentation

**e. Studies of economic environment**

548. According to the Labour Code, compulsory deductions from the salaries of pharmacy employees include:

a. Amounts to be withheld under writs of execution

- b. Trade union contributions
- c. Alimony
- d. Excess payments

e. Pension contributions

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

- a. 50%, 40%
- b. 80%, 60%

c. 60%, 40%

- d. 40%, 20%
- e. 60%, 30%

550. A patient with chronic bronchitis wants to buy glaucine hydrochloride at a pharmacy. What typical side effect of the drug should the patient be warned against?

- a. Irregular heartbeat
- b. Excitation of the central nervous system

c. Drop of arterial pressure

- d. Rise of intraocular pressure
- e. Allergic skin rash

551. A 30-year-old patient with a sleep disorder and psychoemotional disbalance has been administered diazepam. What is the mechanism of its psychosedative action?

- a. Inhibition of the reticular formation
- b. Inhibition of the limbic system

c. Activation of GABAergic system

- d. Reduction of noradrenaline amount in the CNS
- e. Inhibition of opioid receptors

552. Benzylpenicillin sodium is not used per os, because this drug:

- a. Irritates gastric mucosa
- b. Poorly absorbed in the intestine

c. Destroys gastric HCl

- d. Reduces formation of gastric HCl
- e. Is destroyed by penicillinase

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

- a. Hydrochloric acid solution
- b. Sodium hydroxide solution
- c. Potassium iodide solution

d. Sodium hypophosphite

- e. Sodium sulfite solution

554. A pharmacy received a prescription for powders with a too high single dose of phenobarbital not justified by proper documentation. What actions should a pharmacist take?

- a. Supply the maximum single dose, multiplied by the number of powders
- b. Supply 1/3 of the maximum single dose

c. Put the stamp "invalid" and return the prescription to the patient

- d. Supply the highest single dose
- e. Supply 1/3 of the maximum single dose, multiplied by the number of powders

555. When heroin comes into an organism, it metabolizes chiefly to:

- a. 6-acetylmorphine
- b. 3-acetylmorphine and morphine
- c. Codeine
- d. Morphine

e. Morphine and 6-monoacetylmorphine

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

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

557. A female has prolonged labour. Select a drug that stimulates labour activity due to its physiological effect from the listed below:

- a. Estrone
- b. Oxytocin**
- c. Pachycarpine
- d. Neostigmine
- e. Progesterone

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

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

559. While filling hard gelatin capsules such glidants as 0,1% -0,3% aerosil or magnesium stearate along with 0,5% -1% talc are often added to the filling agent in order to improve the following properties:

- a. Flowability**
- b. Regulation of moisture content
- c. Ability to contact molding
- d. Homogeneity of mixing
- e. Homogeneity

560. Prescriptions for drugs being subject to the stocktaking and supplied on favourable terms or free of charge except for narcotic (psychotropic) drugs and tramadol are written out:

- a. On the form F-1
- b. On the forms F-3 and F-1
- c. On the pink form
- d. On the form F-3
- e. In 2 copies of form F-1**

561. What management style is characterized by manager's particular compliance, when manager initiates goals formation by his subordinate and is ready to accept it without reservations?

- a. Bureaucratic style
- b. Democratic management style
- c. Laissez-faire management style**
- d. Collective style
- e. Combined style

562. In case of loss of license a pharmacist should address an application for a duplicate to a licensing authority. The licensing authority is obliged to issue the duplicate to the applicant no later than:

- a. The duplicate isn't issued
- b. Three working days from the date of application receipt**
- c. Two months from the date of application receipt
- d. One month from the date of application receipt
- e. Three months from the date of application receipt



563. Which component of the marketing communication system focuses on creating a positive image of a company?

- a. Merchandising
- b. Public relations**
- c. Personal sales
- d. Advertising
- e. Retail logistics

564. Select a loop diuretic of strong, emergency and short-term action from the listed below:

- a. Spironolactone
- b. Triamterene
- c. Clopamide
- d. Acetazolamide
- e. Furosemide**

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

- a. *Solidago virgaurea*
- b. *Scutellaria baicalensis*
- c. *Viola tricolor*
- d. *Centaurea cyanus***
- e. *Polygonum persicaria*

566. Specify the type of the following liniment: Ol. Helianthi 7,4 Sol. Ammonii caustici 25 ml Ac. Oleinici 0,1 M.f. linimentum D.S. To be rubbed in.

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

567. A patient who has been undergoing combined drug therapy for peptic ulcer presents with black feces. Specify a drug that might have caused such a change:

- a. Actovegin
- b. Omeprazole
- c. Bismuth subcitrate**
- d. Metronidazole
- e. Ranitidine

568. 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. Rifampicin
- b. Vancomycin
- c. Tetracycline
- d. Biseptol
- e. Amoxicillin**

569. A 57-year-old female patient was diagnosed with rheumatoid arthritis; she has also a history of stomach ulcer. What drug from the group of nonsteroid anti-inflammatory drugs may be recommended this patient?

- a. Mefenamic acid
- b. Celecoxib**
- c. Aspirin
- d. Diclofenac
- e. Indometacin

570. An internship doctor prescribed his patient nifuroxazid from the group of nitrofurans for the

treatment of urinary tracts infection. The doctor made a mistake because:

- a. It has nephrotoxic effect
- b. It is excreted with urine in the inactive state
- c. It cannot be absorbed from the digestive tract**
- d. It has bacteriostatic effect
- e. It is excreted from the organism very slowly

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

- a. Cromolyn sodium**
- b. Drotaverine
- c. Ambroxol
- d. Diphenhydramine hydrochloride
- e. Salbutamol

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

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

573. Grinding equipment is classified by the way of grinding. What kind of machines does a roller crusher relate to?

- a. Cutting
- b. Impact
- c. Impact-centrifugal
- d. Crushing**
- e. Abrasive

574. Antacid gastritis can be treated with plantain juice. What is the way of its extraction?

- a. Maceration with aqueous ethanol solution
- b. Extraction with condensed gases
- c. High-pressure compression**
- d. Dissolution of concentrates
- e. Repercolation

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

- a. Carbon monoxide
- b. Heptachlor oxide
- c. Hexachlorocyclohexane
- d. Heptachlor epoxide**
- e. Carbon dioxide

576. A pharmacy has sulfonamide biseptol on sale. What chemical compounds are the main components of this drug?

- a. Sulfamethoxazole, trimethoprim**
- b. Sulgin, norsulfazol
- c. Urosulfan, sulfapiridazin
- d. Phthalazolum, sulfadimezin
- e. Sulfazin, salazodimethoxinum

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

- a. Glutamic

- b. Gluconic
- c. Glutakon**
- d. Glyoxylic
- e. Hexanic

578. A routine inventory revealed a cash shortage. Who must reimburse the sum of the identified shortage?

- a. Deputy head of Department
- b. Cashier**
- c. Deputy director of pharmacy
- d. Pharmacy director
- e. Department head

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

- a. Filtration
- b. Crystallization
- c. Sedimentation
- d. Adsorption
- e. Heating followed by quick cooling**

580. A patient suffering from stomach ulcer was prescribed an antiulcer drug that also reduces secretion of hydrochloric acid and inhibits *Helicobacter pylori*. What drug is it?

- a. Famotidine
- b. Almagel
- c. Gastrocepine
- d. Maalox
- e. Omeprazole**

581. Quantitative determination of nitrofural (furacilin) can be done by method of spectrophotometry. A pharmacy analyst can calculate quantity by measuring:

- a. Refractive index
- b. pH of solution
- c. Fusion temperature
- d. Optical density**
- e. Rotation angle

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

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

583. A consulting pharmacist informed a patient about possible side effect of metronidazole that is normally provoked by alcohol intake. What is the mechanism of this phenomenon?

- a. Enzyme glucose 6-phosphate dehydrogenase activation
- b. Enzyme alcohol dehydrogenase blocking**
- c. Enzyme acetylcholinesterase blocking
- d. Enzyme alcohol dehydrogenase activation
- e. Enzyme acetylcholinesterase activation

584. An anaesthesiologist has to perform an operation under neuroleptanalgesia. Which of the following drug combinations should be used in this case?

- a. Diazepam with aminazine
- b. Promedol with amitriptillin
- c. Droperidol with prednisolone

d. Fentanyl with diazepam

**e. Fentanyl with droperidol**

585. Common juniper is applied as a diuretic, anti-inflammatory and cholagogic agent. This plant gives the following medicinal raw material:

a. Seeds

**b. Fruits**

c. Leaves

d. Sprouts

e. Roots

586. Which of the following reagents should be added to the isoniazid to achieve blue colour and precipitation that turns light-green and emits gases when heated?

a. Iron (III) chloride solution

**b. Copper sulfate solution**

c. Alkaline solution

d. Silver nitrate solution

e. Hydrochloric acid solution

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

a. Liabilities

b. Profit and Loss Account

**c. Assets**

d. First section of the liabilities balance sheet

e. Fourth section of the liabilities balance sheet

588. A 40-year-old patient suffers from bronchial asthma and cardiac rhythm disturbance in form of bradyarrhythmia. Drugs of which pharmacological group should be administered for bronchospasm suppression?

a. Cholinesterase inhibitors

b. Muscle relaxant

c. Beta-blockers

d. M-cholinomimetics

**e. M-cholinergic antagonists**

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

a. Reduced protein concentration in plasma

b. Decelerated drug metabolism in liver

**c. Accelerated drug metabolism in liver**

d. Change of receptor sensibility

e. Increased drug dosage

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

a. Pharmacodynamic incompatibility

b. Functional drugs antagonism

**c. Pharmacokinetic incompatibility**

d. Drugs synergism

e. Pharmaceutical incompatibility

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

a. Public relations

b. Sales promotion

c. TV advertising

**d. Personal sale**

e. Periodical advertising

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

a. Allergy

**b. Tolerance**

c. Potentiation

d. Cumulation

e. Physical dependence

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

a. In the lily-of-the-valley tincture

**b. In the adoniside**

c. Potassium bromide should be added into the selling vial last of all

d. In the mixture of tinctures

e. In the valerian tincture

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

**a. Nimesulide**

b. Acetylsalicylic acid

c. Diclofenac

d. Piroxicam

e. Indomethacin

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

**a. Doxazosin**

b. Diltiazem

c. Losartan

d. Propranolol

e. ?n?!?pril

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

a. Rummage (goods remains) at the end of the month

**b. The difference between the sale price and purchase price of goods**

c. The amount of goods sold

d. The difference between the sales price and markup

e. The difference between the sales price and the customs price

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

a. Not less than 3 hours

b. -

c. 2,5 hours

d. Up to 1 hour

**e. Up to 2 hours**

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

a. Ampoule sterilization

**b. Ampoule annealing**

- c. Ampoule drying
- d. Ampoule washing
- e. Capillary opening

599. 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. Stimulating
- b. Remarketing
- c. Synchromarketing
- d. Conversion

**e. Counteractive**

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

- a. Test for the presence of a sulfur atom

**b. Biochemical assay**

- c. Test for methoxy or ethoxy groups
- d. Test for the phosphate ion
- e. Test for the presence of chlorine atom

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

- a. *Scutellaria baicalensis*
- b. *Polygonum persicaria*
- c. *Viola tricolor*
- d. *Solidago virgaurea*

**e. *Centaurea cyanus***

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

**a. Peroxides**

- b. Carboxylic acids
- c. Alcohols
- d. Non-volatile residue
- e. Reducing substances

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

- a. 10%, 30%, 50% of the averagewage
- b. 25%, 45%, 65% of the average wage
- c. 60%, 80%, 100% of the average wage**
- d. 20%, 40%, 50% of the average wage
- e. 40%, 50%, 90% of the average wage

604. A patient got an injection of 0,25% novocaine solution for the purpose of anaesthetization. Suddenly the patient has presented with red spots, intense sweating, tachycardia, bronchospasm, edema of nasal mucous membrane. What is the cause of this complication?

- a. Local irritation
- b. Tachyphylaxis
- c. Delayed allergy
- d. Immediate allergy**
- e. Abstinence syndrome

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

**a. Syphilis**

- b. Angina
- c. Furunculosis
- d. Intestinal infection
- e. Pneumonia

606. A patient with atopic dermatitis presented at the hospital. Which drug with anti-inflammatory and antiallergic effect should be administered to this patient?

- a. Aethamidum
- b. Retabolil
- c. Oxytocin

**d. Prednisolone**

- e. Insulin

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

- a. Blockade of M-cholinergic receptors
- b. Blockade of histamine H<sub>2</sub> receptors
- c. Stimulation of mucus production
- d. HCl neutralization

**e. Inhibition of H<sup>+</sup>K<sup>+</sup>-ATPase**

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

**a. Sulfuric**

- b. Citric
- c. Oxalic
- d. Formic
- e. Chromotropic

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

- a. Indometacinum
- b. Acetylsalicylic acid
- c. Ibuprofenum
- d. Diclofenac sodium

**e. Celecoxib**

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

- a. They are dissolved in purified water
- b. They are added to the finished emulsion
- c. They are added to the emulsifier

**d. They are dissolved in oil**

- e. They are incorporated in undissolved form

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

- a. Rezipin automatic machine
- b. Rotary machines

**c. Screw and piston dosing machines**

- d. Eccentric machines
- e. Disc machines

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

- a. Sodium sulfate

**b. Benzylpenicillin sodium salt**

- c. Pilocarpine hydrochloride
- d. Sodium chloride
- e. Thiamine chloride

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

- a. Posting of goods
- b. Write-off of cost of goods sold**

- c. Personal income tax
- d. Pharmacy proceeds
- e. Proceeds of a structural subdivision

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

- a. Acetylacetone
- b. Sulfomolybdenum**

- c. Cupric tartrate
- d. Thioacetamide
- e. Hypophosphite

615. 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. Decrease
- b. Maturity**
- c. Market penetration
- d. Development
- e. Growth

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

- a. Piracetam
- b. Ascorbic acid
- c. Fenofibrate**
- d. Dexamethasone
- e. Phenylbutazone

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

- a. 50%, 40%
- b. 60%, 40%**
- c. 40%, 20%
- d. 80%, 60%
- e. 60%, 30%

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

- a. Narcotic**
- b. Potent
- c. General sale list
- d. Toxic
- e. Psychotropic

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

- a. Blockade of  $K^{+-}$ ,  $Na^{+-}$ -ATPase
- b. Stimulation of  $\beta_1$ -adrenoceptors**
- c. Inhibition of phosphodiesterase



- d. Stimulation of M-cholinergic receptors
- e. Stimulation of  $\alpha_1$ -adrenoceptors

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

- a. Dithylinum
- b. Neostigmine
- c. Atropine**
- d. Benzo hexonium
- e. Galantamine

621. 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. Segment requiring further research
- b. Market door
- c. Unattractive segment
- d. Market share
- e. Market niche**

622. A patient after bees stings has angioedema (Quinckes edema). Which drug should be immediately injected to eliminate this condition?

- a. ?n??rilinum
- b. Atropine sulfate
- c. Epinephrine hydrochloride**
- d. Sodium chloride
- e. Platyphyllini hydrotartras

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

- a. Macrolides
- b. Natural penicillins
- c. Aminoglycosides**
- d. Semi-synthetic penicillins
- e. Cephalosporins

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

- a. Increased drug dosage
- b. Reduced protein concentration in plasma
- c. Decelerated drug metabolism in liver
- d. Accelerated drug metabolism in liver**
- e. Change of receptor sensibility

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

- a. Carbon dioxide
- b. Heptachlor oxide
- c. Heptachlor epoxide**
- d. Carbon monoxide
- e. Hexachlorocyclohexane

626. In order to verify identity of tropan derivatives, Vitalis reaction is applied. For that purpose the medications should be first decomposed with nitric acid and then treated with alcoholic solution of potassium hydroxide and acetone. What effect will be observed?

- a. Emission of gas bubbles

- b. The solution will turn green
- c. Setting of black precipitate
- d. The solution will turn purple**
- e. Setting of white precipitate

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

- a. Ascorbic acid
- b. Oxyferriscorbone
- c. Unitol
- d. Cyanocobalamine**
- e. Ferrum Lek

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

- a. Propanol acidified with oxalic acid
- b. Chloroform**
- c. Ethanol acidified with oxalic acid
- d. Water acidified with sulfuric acid
- e. Water alkalized with ammonia solution

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

- a. Fourth section of the liabilities balance sheet
- b. First section of the liabilities balance sheet
- c. Profit and Loss Account
- d. Assets**
- e. Liabilities

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

- a. Peloidinum, humisolum, torfotum, Fibs pro injectionibus
- b. Liquid aloe extract, aloe liniment, aloe juice, biossedum
- c. Peloidinum, humisolum, torfotum, plasmolum, solcoseryl
- d. Vitreous body, placental suspension for injections, plasmolum, solcoseryl**
- e. Liquid aloe extract, aloe liniment, plasmolum

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

- a. Calcium bromate
- b. Sodium thiosulfate**
- c. Sodium nitrite
- d. Silver nitrate
- e. Sodium edetate

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

- a. Formation of iron hydroxamates**
- b. Formation of 3-bromphenol
- c. Formation of azo dye
- d. -
- e. Formation of indophenol

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

- a. As a narcotic raw material
- b. According to the list A requirements

- c. In a light room
- d. According to the list B requirements
- e. Separately from all other kinds of raw material**

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

- a. Ascorbic acid
- b. Butylhydroxytoluene
- c. 0,1 M acid chloride solution
- d. 0,1 M sodium hydroxide solution**
- e. Trilon B

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

- a. Gentamicin
- b. Amoxicillin**
- c. Amikacin
- d. Chloramphenicol
- e. Norfloxacin

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

- a. Potassium bromate
- b. Silver nitrate
- c. Ammonium thiocyanate
- d. Ammonium cerium sulfate**
- e. Sodium edetate

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

- a. Own and borrowed funds
- b. Borrowed funds
- c. -
- d. Own capital
- e. Current and non-current assets**

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

- a. Metal objects
- b. Other similar plants
- c. Other organs of the same plant
- d. Droppings of birds and rodents
- e. Sand, earth, stones**

639. 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. Hydrolytically unstable
- b. Photosensitive
- c. Viscous
- d. Easily oxidable**
- e. Thermostable

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

- a. Isolation of crystallization water
- b. Mixture dampening**

- c. Eutectic
- d. Adsorption
- e. Immiscibility

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

a. Polyethylene oxide

- b. Hard fat
- c. Cocoa butter
- d. Butyrol
- e. Vitepsol

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

- a. Permanganatometry
- b. Chelatometry
- c. Acidimetry
- d. Alkalimetry

e. Iodometry

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

a. Writing-off of the cost of goods sold

b. Proceeds of a structural subdivision of a pharmacy

- c. Receipt of advance payment made by a customer
- d. Salary accounting
- e. Tax charge

644. 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. Six months prior to calculation

b. Three months prior to calculation

- c. 7 days prior to calculation
- d. 1 year prior to calculation
- e. 10 days prior to calculation

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

a. Neostigmine

- b. Aethimizolum
- c. Dithylinum
- d. ??nzohexonium
- e. Cytitonum

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

- a. Sodium benzoate
- b. Phenyl salicylate
- c. Acetylsalicylic acid

d. Vicasolum

e. Phenobarbital

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

a. Paracetamol

- b. Diclofenac sodium
- c. Piroxicam
- d. Acetylsalicylic acid
- e. Indomethacin

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

a. Explosive substances

b. Combustible substances

c. Volatile substances

d. Explosion hazardous substances

e. Highly inflammable substances

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

a. Atropine

b. Coniine

c. Strychnine

d. Quinine

e. Cocaine

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

a. Beta-lactam cycle

b. Thiazolidine cycle

c. Isoxazole cycle

d. Furan cycle

e. Thiadiazole cycle

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

a. Dissolving in potassium iodide solution

b. Dissolving in cold water

c. Grinding in a mortar with water

d. Dissolving in freshly distilled water

e. Dissolving in hot water

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

a. Streptocid

b. Methionine

c. Analgin

d. Cortisone acetate

e. Ascorbic acid

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

a. Fraxiparine

b. Pentoxifylline

c. Heparin

d. Alteplase

e. Acetylsalicylic acid

654. 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. Pyridine

b. Formaldehyde

c. Hydroxyquinoline

d. Resorcin

e. Benzaldehyde

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

following solution:

- a. Magnesium sulfate
- b. Sodium phosphate
- c. Sodium chloride
- d. Potassium bromide
- e. Ammonium sulfide**

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

- a. Solutions of easily oxidizable substances
- b. Solutions of substances requiring special purification
- c. Solutions are not subject to heat sterilization**
- d. Solutions of salts composed of weak bases and strong acids
- e. Solutions of salts composed of strong bases and weak acids

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

- a. Paracetamol
- b. Ascorbic acid
- c. Cortisone acetate
- d. Streptocide
- e. Methionine**

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

- a. Standard
- b. Pharmacopoeia entry
- c. Order
- d. Certificate of analysis**
- e. Request

659. A pharmacy received a prescription: Rp.: Dibazoli 0,05 Papaverini hydrochloridi 0,15 Sacchari 2,5M. fiat pulv. Divide in partes aequales ? 10 Specify the weight of a single powder dose:

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

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

- a. Diethyl ether
- b. Ethanol
- c. Acetone
- d. Phenol
- e. Fatty or mineral oil**

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

- a. Dipiroximum
- b. Neostigmine**
- c. Arminum
- d. Pylocarpine
- e. Aceclidine

662. 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. Vancomycin
- b. Rifampicin
- c. Tetracycline
- d. Amoxicillin**
- e. Biseptol

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

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

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

- a. Glyoxylic
- b. Hexanic
- c. Glutamic
- d. Glutaconic**
- e. Gluconic

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

- a. Loratadine
- b. Diclofenac sodium
- c. Glaucine
- d. Acetylcysteine**
- e. Drotaverine hydrochloride

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

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

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

- a. Lipoxygenase (LOX)
- b. Prostacyclin synthetase
- c. Thromboxane synthetase
- d. Cyclooxygenase-2 (COX-2)
- e. Cyclooxygenase-1 (COX-1)**

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

- a. Bureaucratic
- b. Functional
- c. Centralized
- d. Decentralized
- e. Divisional**

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

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

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

- a. Marketing
- b. Advertising
- c. Management
- d. Supply
- e. Demand

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

- a. Compounding and production department
- b. Department of finished dosage forms
- c. Department of curative cosmetics
- d. Inventory department
- e. Department of over-the-counter drugs

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

- a. Sodium p-aminosalicylate
- b. Procaine hydrochloride
- c. Anesthesin
- d. Paracetamol
- e. Dicaine

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

- a. Taste violation
- b. Withdrawal (abstinence) syndrome
- c. Orthostatic hypotension
- d. Diarrhea
- e. Central nervous system depression effect

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

- a. Slow excretion
- b. Wide range of action
- c. Poor absorption from the injection site
- d. Cumulative ability
- e. Presence of bactericidal action

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

- a. Ethyl benzoate
- b. Phenol
- c. Isoamyl alcohol
- d. Iodoform
- e. Ethyl ether

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



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

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

- a. 10 000 UAH**
- b. 2 500 UAH
- c. 4 000 UAH
- d. 7 500 UAH
- e. 12 000 UAH

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

- a. Staff categories
- b. Labour market state**
- c. Data on the staff turnover
- d. Average staffing number
- e. Average payroll strength

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

- a. Fruits**
- b. Shoots
- c. Rind
- d. Leaves
- e. Roots

680. Pharmaceutical market is in such a situation when there is only one company selling a certain product. Specify the competitive structure of the market:

- a. Oligopolistic market
- b. Pure monopoly market**
- c. Pure competition market
- d. Monopolistic competitive market
- e. Pure monopoly market and oligopolistic market

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

- a. Propane, butane, isobutane
- b. Freons
- c. Vinyl and methyl chloride
- d. Methylene chloride, ethylene chloride
- e. Nitrogen, nitrous oxide, carbon dioxide**

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

- a. Four working days after returning from a trip
- b. Ten working days after returning from a trip
- c. There is no deadline
- d. Three working days after returning from a trip**
- e. A week after returning from a trip

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

a. Slowly eliminated from the body

- b. Poorly absorbed from the injection site
- c. Has bactericidal effect
- d. Pluripotential
- e. Accumulates in the lungs

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

- a. Nettle
- b. Common plantain
- c. *Primula officinalis*
- d. Marshmallow (*Althaea officinalis*)

e. Cotton burdock (*Arctium tomentosum*)

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

a. Para-aminobenzoic

- b. Para-aminosalicylic
- c. Para-chlorobenzoic
- d. Para-aminobenzolsulfonic
- e. Para-aminophthalic

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

- a. Inhibition of adrenergic processes in the CNS
- b. Stimulation of cholinergic processes in the CNS
- c. Stimulation of adrenergic and dopaminergic processes in the CNS

d. Inhibition of dopaminergic processes in the CNS

- e. Inhibition of cholinergic processes in the CNS

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

a. Sulfuric

b. Sulfanilic

- c. Salicylic
- d. Phosphoric
- e. Hydrochloric

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

a. Atropine sulfate

b. Proserin

- c. Benzo hexonium
- d. Phosphacolum
- e. Dithylinum

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

a. Describing the current marketing situation

b. Defining the mission and goals of a pharmaceutical company

- c. Developing a program of activities
- d. Making the list of tasks and problems
- e. Budgeting

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

- a. 100,0 g of sodium chloride and 2400 ml of water for injections
- b. 30,0 g of sodium chloride and 2500 ml of water for injections
- c. 25,0 g of sodium chloride and 2500 ml of water for injections

d. 50,0 g of sodium chloride and 2450 ml of water for injections

**e. 22,5 g of sodium chloride and 2500 ml of water for injections**

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

a. Liniment-suspension

b. Liniment, emulsion w/o

c. Combined liniment

d. Liniment-solution

**e. Liniment, emulsion o/w**

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

a. -

**b. Bonus**

c. Dealer

d. Seasonal

e. Discounts for quantity of purchased goods

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

a. Hydrochloric acid solution

b. Sodium hydroxide solution

c. Sodium sulfite solution

d. Potassium iodide solution

**e. Sodium hypophosphite**

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

a. Muscarinic cholinomimetics

b. Adrenomimetics

**c. Muscarinic receptor blockers**

d. Muscarinic and nicotinic cholinomimetics

e. Adrenoceptor blocker

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

**a. Gravimetric**

b. Spectrophotometric

c. Chromatographic

d. Titrimetric

e. Photocolorimetric

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

**a. Tachyphylaxis**

b. Drug dependence

c. Cumulation

d. Idiosyncrasy

e. Allergy

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

a. Tetracaine hydrochloride

- b. Xycain
- c. Trimecaine hydrochloride
- d. Procainamide hydrochloride

**e. Procaine hydrochloride**

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

- a. Liquid and solid
- b. Liquid

**c. Liquid and gaseous**

- d. Gaseous
- e. Gaseous and solid

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

a. Clonidine

**b. Enalapril**

- c. Dichlothiazide
- d. Propranolol
- e. Dibazol

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

- a. Buckthorn
- b. Black chokeberry
- c. Hawthorn

**d. Bird cherry**

e. Blueberry

701. 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. Retor-shaped hairs

**b. T-shaped hairs along the leaf edge**

- c. Branched, simple and ciliated hairs
- d. Branched and capitate hairs
- e. Simple and capitate hairs

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

- a. Ranitidine
- b. Omeprazole
- c. Actovegin
- d. Metronidazole

**e. Bismuth subcitrate**

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

**a. Acetone**

- b. Phenol
- c. Methanol
- d. Isoamyl alcohol
- e. Formaldehyde

704. An advance holder (accountant) was given some money from the cash fund of an enterprise for

purchase of office accessories. After the cash advance the advance holder must submit the complete application of funds statement no later than:

a. Ten working days

**b. Third banking day**

c. Such term isn't established

d. One week

e. Five working days

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

a. Amide

**b. Aldehyde**

c. Etherific

d. Ketonic

e. Carboxyl

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

**a. Cefotaxime**

b. Tetracycline hydrochloride

c. Gentamicin sulfate

d. Ofloxacin

e. Biseptol

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

a. Glucose

**b. Ethacridine lactate**

c. Magnesium oxide

d. Diphenhydramine

e. Streptocide

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

a. Tannins

b. Alkaloids

c. Mucilages

d. Fatty oils

**e. Cardiac glycosides**

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

a. Analginum

**b. Codeine**

c. Amlonum

d. Butadionum

e. Corvalolum

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

a. Ethyl alcohol 40%

b. Glycerol

c. Purified water

**d. Ethyl alcohol 70%**

e. Sunflower oil

711. A pharmacist made 10 powders containing atropine sulfate at a rate of 0.00005 g per dose. What trituration did he use?

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

712. A laboratory received some herbal raw material for analysis. It is a composition of ovoid-pointed leaves up to 25 cm long and 20 cm wide; the leaf base is cuneate, the leaf edge is emarginate, The cutting is long and cylindric. The leaf venation is pinnatisect; the midrib and the first-order veins project significantly on the inferior surface of the leaf the superior leaf surface is dark green, the inferior surface is light green. The plant has a weak narcotic smell. The taste cannot be determined. The plant is poisonous! The described herbal raw material relates to the following plant:

- a. Datura stramonium**
- b. Passiflora incarnata
- c. Vinca minor
- d. -
- e. Chelidonium majus

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

- a. Viscosity
- b. Density
- c. Index of refraction**
- d. Intensity of absorption
- e. Angle of rotation

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

- a. 70-80°C
- b. 60-70°C
- c. 50-60°C
- d. 80-90°C
- e. 35-40°C**

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

- a. Naloxone
- b. Tetacium-calcium
- c. Desferal
- d. Unithiol**
- e. Dexamethasone

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

- a. Aminazine**
- b. Morphine
- c. Celecoxib
- d. Paracetamol
- e. Propranolol

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

- a. Acetylsalicylic acid
- b. Gamma-aminobutyric acid
- c. Citric acid
- d. Ursodeoxycholic acid**
- e. Mefenamic acid

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

- a. Neodicumarinum
- b. Calcium gluconate
- c. Thrombin
- d. Heparin**
- e. Vikasolum

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

- a. Seeds of flax**
- b. Fruits of black chokeberry
- c. Hawthorn berries
- d. Seeds of fennelflower
- e. Fruits of dill

720. 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 for the following concept:

- a. Labour loss
- b. Financial loss
- c. Loss of property
- d. Business risk**
- e. Loss of time

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

- a. National register of medicinal products
- b. Register of medicinal products accepted for sale**
- c. Information on state registration
- d. Quality certificates
- e. Opinion letter of the territorial inspectorate

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

- a. Arterial pressure drop**
- b. Increased intraocular pressure
- c. Excitation of the central nervous system
- d. Allergic skin rash
- e. Irregular heartbeat

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

- a. Diphenylcarbazine
- b. Sodium diethyldithiocarbamate
- c. Plumbum diethyldithiocarbamate**
- d. Diphenylamine
- e. Dithizone

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

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

725. A doctor prescribed his patient an emulsion of olive oil which includes anesthesin. To incorporate

anesthesin into the emulsion it must be dissolved:

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

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

- a. Reduction range, container quantity
- b. Fractional composition, containers filling method
- c. System homogeneity, dispersion velocity
- d. Percentage of phase, filling temperature
- e. Exit port diameter, propellant vapour pressure**

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

- a. Penicillamine
- b. Atropinum
- c. Deferoxamium**
- d. Protamine sulfate
- e. Bemegridum

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

- a. Atropine sulfate
- b. Castor oil
- c. Bisacodyl**
- d. Novocaine amide
- e. Sodium sulfate

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

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

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

- a. Membrane filter
- b. Nutsch filter
- c. Pressure filters**
- d. Paper filter
- e. Bag filter

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

- a. Vikasolum**
- b. Aminocaproic acid
- c. Fibrinogen
- d. Etamsylate
- e. Ascorbic acid

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

- a. Stahls reagent
- b. Bromine water



- c. Trim-Hill reagent
- d. Alkaline solution

**e. Dragendorff reagent**

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

- a. Essential and fatty oils
- b. Coumarins and phenol glycosides

**c. Anthracene derivatives and tannins**

- d. Iridoids and vitamins
- e. Flavonoids and essential oils

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

- a. Ambroxol
- b. Broncholytin
- c. Cholosasum
- d. Licorice syrup

**e. Pertussinum**

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

- a. Silver nitrate
- b. Sodium sulphide
- c. Ammonium oxalate

**d. Barium chloride**

- e. Potassium ferrocyanide

736. The ability of drugs to accumulate in the patients body is called:

- a. Antagonism
- b. Habituation
- c. Synergism

**d. Cumulation**

- e. Allergy

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

**a. Written, organoleptic, self control**

- b. Written and self control
- c. Written, interrogatory, self control
- d. Written, qualitative and quantitative analysis
- e. Written, physics and chemical

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

- a. Alkali metal salts
- b. Ammonia

**c. Mineral acids or large amounts of organic acids**

- d. Alkalies
- e. Weak organic acids and heavy metal salts

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

**a. Hypotensive and sedative**

- b. Antispasmodic and anti-inflammatory
- c. Diuretic and styptic
- d. Laxative and sedative

e. Tonic and antispasmodic

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

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

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

- a. Irregular working week
- b. 40 hours
- c. 36 hours**
- d. 30 hours
- e. 38 hours

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

- a. Goods delivery note
- b. Cash order
- c. Acquittance
- d. Receipts note**
- e. Requisition

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

- a. The combination of brand name with an individual drug brand
- b. Brands for individual drugs
- c. Multi-brand approach
- d. Group brands**
- e. Individual brands

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

- a. Rhizomes and roots of valerian
- b. Polemonium roots
- c. Elecampane roots
- d. Acorus calamus roots
- e. Ginseng roots**

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

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

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

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

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

- a. Diluents
- b. Disintegrants
- c. Dyes
- d. Lubricants**
- e. Adhesive substances

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

- a. 500 mg
- b. 100 mg**
- c. 50 mg
- d. 200 mg
- e. 1000 mg

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

- a. Rizoma et radix Sanquisorbae officinalis
- b. Radix Taraxaci officinalis
- c. Herba Achilleae millefolii
- d. Folium Uvae ursi**
- e. Rizoma Calami

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

- a. Insulin**
- b. Glurenorm
- c. Diabetone
- d. Metformin
- e. Glibenclamide

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

- a. Nitritometric determination
- b. Iodometry
- c. Bromatometry
- d. Mercurimetric determination
- e. Chelatometry**

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

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

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

- a. Phenylinum
- b. Streptokinase**
- c. Acetylsalicylic acid
- d. Heparin
- e. Ticlopidine

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

- a. 20 days

b. 1 year

c. 10 days

d. 3 months

e. 15 days

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

a. Managers order

b. Head of regional structure

c. State inspection of drugs quality control

d. The order of head of territorial inspection

e. Proprietor of an enterprise

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

a. Hygronium

b. Methacin

c. Dithylinum

d. Nicotine

e. Atropine sulfate

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

a. Medicaments

b. Curative cosmetics

c. Optics

d. Perfumes

e. Baby food

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

a. 15 minutes

b. 10 minutes

c. 20 minutes

d. 30 minutes

e. 12 minutes

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

a. Drotaverine

b. Pancreatinum

c. Acidin pepsinum

d. M-antagonist

e. D-antagonist

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

a. Extra-evaluation of laboratory-packaging works

b. Amortization charged to operation

c. Payroll payment

d. Herbal raw material purchases

e. Drug sales

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

a. Third level

b. Fourth level

c. Second level

d. First level

**e. Zero level**

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

a. Blueberry (*Vaccinium myrtillus*)

b. Blackcurrant

c. Elder (*Sambucus*)

**d. Buckthorn**

e. Alder buckthorn (*Frangula alnus*)

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

**a. Cocaine**

b. Phenol

c. Phenacetin

d. Heroin

e. Caffeine

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

a. Limited

b. Normative

c. Without preliminary licencing or registration

d. Free

**e. Licence-based**

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

a. Chelatometry

b. Permanganatometry

c. Nitritometry

d. Alkalimetry

**e. Argentometry**

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

**a. Effervescent powder**

b. Soluble powder

c. Powders for oral use

d. Nasal powders

e. Powders for external use

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

a. Unitary

b. Utility

c. Individual

**d. Corporate**

e. Public

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

a. Drotaverine

b. Ambroxol

c. Salbutamol

**d. Cromolyn sodium**

e. Diphenhydramine hydrochloride

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

- a. Potassium nitrate solution
- b. Iron (III) chloride solution
- c. Potassium iodide solution

d. Iodine solution

- e. Ammonia solution

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

- a. Ammonium solution of argentic nitrate
- b. Hydroxylamine solution
- c. Sodium hydrosulfite solution
- d. Aqueous solution of potassium iodide

e. Alkaline solution of potassium tetraiodomercurate

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

- a. Novocaine
- b. Paracetamol
- c. Acetylsalicylic acid

d. Dicaine

- e. Analgin

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

- a. Dichlothiazide
- b. Ethacrynic acid
- c. Furosemide

d. Triamterene

- e. Clopamide

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

- a. Gassing
- b. Precipitation

c. Hydrolysis (with no visible changes)

- d. Change in colour
- e. Change in odour

774. 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 3 months from the date of issue
- b. No longer than 5 calendar days from the date of issue
- c. No longer than 10 calendar days from the date of issue
- d. No longer than 1 year from the date of issue
- e. No longer than 1 calendar days from the date of issue

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

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

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

- a. Ascorbic acid
- b. Doxycyclin**
- c. Paracetamolum
- d. Codeine phosphate
- e. Acetylcysteinum

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

- a. Carboxyl groups
- b. Phenol groups**
- c. Amino groups
- d. Nitro groups
- e. Thiol groups

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

- a. Buckeye (Aesculus)
- b. Pot marigold (Calendula officinalis)
- c. Licorice (Glycyrrhiza)**
- d. Jacobs ladder blue (Polemonium caeruleum)
- e. Mountain angelica (Aralia mandshurica)

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

- a. Lyophilization
- b. Pressing
- c. Stamping
- d. Pumping-out
- e. Outpouring**

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

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

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

- a. The left-over goods in terms of settlement prices
- b. The rate of trade mark-up
- c. Wage fund**
- d. Turnover
- e. Sales volume

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

- a. Vaseline
- b. Emulsion**
- c. Base For ophthalmic ointments
- d. Polyethylene glycol
- e. Lanolin

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

- a. Filtration
- b. Crystallization
- c. Heating followed by quick cooling**
- d. Adsorption
- e. Sedimentation

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

- a. Alimony
- b. Charitable contributions**
- c. Contributions to the Social insurance fund for temporary disability
- d. Contributions to the Social insurance fund for unemployment
- e. Superannuation contributions

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

- a. Potassium iodide**
- b. Sodium thiosulfate
- c. Potassium chloride
- d. Potassium permanganate
- e. Sodium hydroxide

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

- a. Antagonism**
- b. Tachyphylaxis
- c. Sensibilization
- d. Habituation
- e. Potentiation

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

- a. Murexide
- b. Fluorescein
- c. Iodoform
- d. -
- e. Azo dye**

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

- a. Freons**
- b. Nitrous oxide
- c. Nitrogen
- d. Ethylene chloride
- e. Methylene chloride

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

- a. 100 thousand UAH
- b. 750 thousand UAH
- c. 5 million UAH
- d. 3 million UAH
- e. 1 million UAH**

790. A pharmacy received a prescription for ethyl alcohol. What amount of alcohol can be dispensed to the patient with diabetes free of charge?



- a. 150 g per month
- b. 50 g per month
- c. There is no standard
- d. 200 g per month
- e. 100 g per month**

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

- a. Clopamide
- b. Spironolactone
- c. Indapamide
- d. Furosemide**
- e. Chlorthalidone

792. A person got poisoned with salts of manganese. Analysis of the mineral residue revealed manganese ions. What reactions underlie the chemical processes of manganese detection?

- a. Oxidation-reduction**
- b. Neutralization
- c. Metathesis
- d. Hydrolysis
- e. Dissociation

793. Pharmacies as legal entities must have statutory capital in order to get registered with state authorities. Specify the amount which is identified as the statutory capital:

- a. Amount recorded in the constituent documents**
- b. Total sources of funds
- c. Outstanding amount
- d. Total assets
- e. Amount of noncurrent assets

794. Plantain leaves are used for production of Plantaglucidum which has antiulcerogenic action. The plant material analysis involves quantitative determination of the following class of compounds:

- a. Vitamins
- b. Amarines
- c. Carotenoids
- d. Polysaccharides**
- e. Terpenes

795. An analytical laboratory has the task to confirm the presence of ethylenediamine in the aminophylline. Which of the following reagents allows to detect ethylenediamine?

- a. Sodium hydroxide
- b. Copper (II) sulfate**
- c. Barium chloride
- d. Silver nitrate
- e. Concentrated sulfuric acid

796. Simultaneous use of gentamicin and acyclovir tablets increases the risk of:

- a. Cardiotoxicity
- b. Hepatotoxicity
- c. Likelihood of allergic reactions
- d. Neurotoxicity
- e. Nephrotoxicity**

797. A pharmacist prepared a lipophilic ointment of suspension type. What substance is used for preparing this kind of ointments?

- a. Xeroform**
- b. Tannin
- c. Protargolum
- d. Herbal extracts

e. Menthol

798. A pharmacist prepared a drug by the prescription:Rp.:StreptocidiDermatoli ana 1,0LanoliniVaselini ana 5,0M.D.S.: Apply to the affected skin.Specify the type of the disperse system:

a. Combined ointment

b. Suspension ointment

c. Extraction ointment

d. Solution ointment

e. Hydrophilic ointment

799. A person got poisoned with alcohols. What alcohol derivatives are used for the analysis by gas-liquid chromatography?

a. Alkyl sulfites

b. Alkyl sulfates

c. Alkyl nitrates

d. Alkyl acetates

e. Alkyl nitrites

800. A pharmaceutical analyst analyzes the substance of ascorbic acid in compliance with the requirements of the State Pharmacopoeia of Ukraine. To identify the oxalic acid impurities he uses the solution of:

a. Calcium chloride

b. Sodium thiosulfate

c. Sodium chloride

d. Sodium hydrocarbonate

e. Sodium sulfate

801. A pharmacy opens a bank account to store funds and conduct ongoing business transactions. What kind of account should be opened?

a. Current

b. Deposit

c. Letter of credit

d. Investment

e. Provisional

802. Schedule of sanitation actions in pharmacies is regulated by the relevant regulatory acts. Cleaning day at a pharmacy must be scheduled for at least 1 time:

a. In 10 days

b. In a month

c. In 3 days

d. In a week

e. In 5 days

803. In order to identify deoxycorticosterone acetate a pharmaceutical analyst performed a steroid cycle reaction, which resulted in formation of cherry-red colour and a green fluorescence. What reagent was added?

a. Iron (III) chloride solution

b. Potassium hydroxide solution

c. Chloroform

d. Concentrated sulfuric acid

e. Iodine solution

804. A pharmacy prepares ointments with extracts. What is the way to incorporate the dry and thick extracts into the ointments?

a. To disperse them with a liquid which is compatible with the base

b. To incorporate them directly into the molten ointment base

c. To disperse them with ethanol

d. To triturate them first with alcohol-water-glycerol [1:6:3] mixture

e. To dissolve them in water first

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

- a. Ten working days after returning from a trip
- b. There is no deadline
- c. A week after returning from a trip
- d. Three working days after returning from a trip**
- e. Four working days after returning from a trip

806. What solution is used for the detection of iron (II) ions under the SPhU requirements?

- a. Lanthanum nitrate
- b. Potassium ferricyanide**
- c. Sodium hydroxide
- d. Ammonia
- e. Silver nitrate

807. Salicylic acid and its derivatives may be the cause of acute intoxication. When salicylates are analyzed by TLC method, the chromatographic plate is sprayed with:

- a. Solution of mercury (II) sulfate and chloroform solution
- b. Dragendorff's reagent
- c. Solution of iron (III) chloride**
- d. Marquis reagent
- e. Forrester reagent

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

- a. №1, single copy
- b. №3, single copy
- c. №1 and №3
- d. №1 in duplicate**
- e. №3 in duplicate

809. A female patient has a sleep disorder after stress. Which of the following hypnotic drugs should be preferred for the treatment of insomnia?

- a. Nitrozem**
- b. Barbitol
- c. Phenobarbital
- d. Chloral hydrate
- e. Aminazine

810. Alkaloid glaucine has an antitussive effect that is stronger and longer if compared to that of codeine, and exhibits no narcotic side effects. What drug plant contains glaucine?

- a. Yellow hornpoppy**
- b. Datura
- c. Thermopsis lanceolata
- d. Henbane bell (Scopolia carniolica)
- e. Celandine

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

- a. Invoice
- b. Commercial report
- c. Inventory item description
- d. Checklist
- e. Act on the inventory results**

812. Help the doctor to select a drug from the group of non-steroidal anti-inflammatory drugs, which

is an inhibitor of COX-2 and does not damage the stomach:

- a. Paracetamol
- b. Diclofenac sodium
- c. Celecoxib**
- d. Acetylsalicylic acid
- e. Indomethacin

813. Analysis of the drug sales performance revealed market expansion, the absolute increase of the drug in manufacturers stocks, slowdown in the growth rate of sales, intense competition. What stage of the product life cycle is the drug in?

- a. Introduction
- b. Saturation and decline
- c. Maturity**
- d. Development
- e. Growth

814. The quality of tablets is assessed by various factors. What instrument is used for the tablet disintegration test?

- a. Basket apparatus**
- b. Paddle
- c. -
- d. Friabilator
- e. Flow-through device

815. A pharmacist prepared eye drops containing silver nitrate. What substance must be taken to ensure isotonicity?

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

816. A patient suffering from epilepsy has taken phenobarbital for a long time and developed drug tolerance. What is the mechanism of this phenomenon development?

- a. Acceleration of biotransformation**
- b. Receptors sensitivity enhancement
- c. Absorption process reduction
- d. Accumulation of substances in the body
- e. Inhibition of biotransformation

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

- a. BP 5,0
- b. BP 10,0
- c. BP 20,0
- d. BP 1,0**
- e. BP 2,0

818. 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 drug is this side effect typical for?

- a. Nitrosorbid**
- b. Trimetazidine
- c. Nifedipine
- d. Amlodipine
- e. Metoprolol

819. A 40-year-old patient has a history of bronchial asthma and heart rhythm disorders in form of

bradyarrhythmias. Bronchospasm can be eliminated by the drugs of the following pharmacological group:

- a. Cholinesterase inhibitors
- b. Muscle relaxants
- c. M-cholinomimetics
- d. beta-blockers
- e. M-cholinergic antagonists**

820. A 65-year-old female patient with a fracture of mandible has been prescribed a drug from the group of narcotic analgesics. Specify this drug:

- a. Furosemide
- b. Promedol**
- c. Heparin
- d. Piracetam
- e. Cinnarizine

821. A pharmacist prepares trituration of atropine sulfate. What adjuvant should be used for this purpose?

- a. Starch
- b. Glucose
- c. Saccharose
- d. Lactose**
- e. Talc

822. A patient with acute intoxication has been administered a loop diuretic in order to cause the forced diuresis. What drug is it?

- a. Mannitol
- b. Furosemide**
- c. Triamterene
- d. Hydrochlorothiazide
- e. Spironolactone

823. Hydrocyanic acid and its salts are extremely toxic substances. In humans, they are partly neutralized by enzymatic conversion into:

- a. Thiocyanate**
- b. Acetic acid
- c. Ethanol
- d. Carbon (IV) oxide
- e. Nitrogen (II) oxide

824. Leaves of greater plantain are harvested in summer by mowing or cutting them with a knife or a sickle. There is always one developed plant left per 1 m<sup>2</sup>. The plant is harvested in the following vegetation period:

- a. Ripeness
- b. Budding
- c. Blooming**
- d. Rosetting
- e. Beginning of fruiting

825. Precipitation reactions are used to establish the identity of drugs. Cation of sodium in sodium citrate can be identified by the formation of a white precipitate with:

- a. Potassium permanganate**
- b. Potassium ferrocyanide
- c. Silver nitrate
- d. Barium chloride
- e. Iron (III) chloride

826. Diazepam is used for the treatment of neuroses due to the following pharmacological effect:

a. Antidepressant

**b. Anxiolytic**

c. Diuretic

d. Analgesic

e. Antipyretic

827. In order to detect the presence of thiosulfate ions a pharmaceutical analyst added the excess reagent. The resulting reaction produced a white precipitate, which slowly turned yellow, then brown, and black. What solution was added?

a. Lead (II) acetate

b. Barium chloride

c. Ammonium oxalate

d. Diphenylamine

**e. Silver nitrate**

828. 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. Sodium benzoate

b. Potassium chloride

c. Hexamethylenetetramine

d. Calcium chloride

**e. Novocaine**

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

a. Revaluation for the packing and laboratory work

b. Reclassifying other supplies as goods

c. Bringing the oversupply on charge

d. Bringing the glassware on charge

**e. Disposal of products for economic needs**

830. Vacation leaves for employees of pharmacies include paid annual, additional, sabbatical, social leaves, as well as unpaid leaves. What is the total duration of the paid basic and additional vacation leave?

a. 65 calendar days

b. 60 calendar days

c. 90 calendar days

**d. 59 calendar days**

e. 70 calendar days

831. Ampules are produced of glass with appropriate heat resistance. An ampule would meet the requirements of technical standards if the ampule glass has the following characteristic:

a. Quality ampule sealing

b. Withstanding the stresses during production and transportation

**c. Thermal shock resistance**

d. Protection of light-sensitive materials

e. Easy cutting of capillaries

832. A 65-year-old patient complains of nausea, vomiting, lethargy, seeing yellow spots in front of his eyes. The patient daily takes 0,25 mg of digoxin, 100 mg of aspecardum, 50 mg of metoprolol. What pathological condition is this syndrome typical for?

**a. Glycoside intoxication**

b. Withdrawal syndrome

c. Food poisoning

d. Tachyphylaxis

e. Hypersensitivity reaction

833. Sterilization methods used for the preparation of drugs under aseptic conditions can be

differentiated into physical, mechanical, and chemical ones. Specify the chemical method of sterilization:

- a. Radiation sterilization
- b. Dry heat sterilization
- c. UV light sterilization
- d. Pressure steam sterilization
- e. Addition of preservatives**

834. Specific impurity of thiosulfates in Natrii iodidum and Kalii iodidum is identified by adding starch and iodine solutions. The absence of impurities is proved by:

- a. Discolouration of the solution
- b. Disappearance of the blue colour
- c. Yellow colour
- d. White precipitate
- e. Blue colour**

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

- a. Garden sage
- b. Elecampane
- c. Three-lobed beggarticks
- d. Purple passionflower**
- e. Lesser periwinkle

836. A patient with acute heart failure and cardiac glycoside intolerance was given an injection of dobutamine. What is the mechanism of its action?

- a. Stimulation of beta<sub>1</sub>-adrenoceptors**
- b. Inhibition of phosphodiesterase
- c. Stimulation of M-cholinergic receptors
- d. Blockade of K<sup>+</sup>-, Na<sup>+</sup>-ATPase
- e. Stimulation of alpha<sub>1</sub>-adrenoceptors

837. Which of the following antibiotics can be identified by means of the maltol test?

- a. Kanamycin monosulfate
- b. Amoxicillin
- c. Lincomycin hydrochloride
- d. Doxycycline hydrochloride
- e. Streptomycin sulfate**

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

- a. Dealer
- b. Commission agent
- c. Broker
- d. Consignee
- e. Wholesale agent**

839. A pharmacist prepared 100,0 g of oil emulsion using 5% solution of methyl cellulose as an emulsifier. Specify the required amount of oil and emulsifier for the drug preparation:

- a. 10,0 g, 10,0 g
- b. 20,0 g, 30,0 g
- c. 10,0 g, 30,0 g
- d. 20,0 g, 10,0 g
- e. 10,0 g, 20,0 g**

840. Field horsetail grass is recommended as a diuretic. What herbal material can be used as a substitute?

a. Herba Aervae lanatae

b. Herba Adonidis

c. Herba Leonuri

d. Herba Menthae piperitae

e. Herba Convallariae

841. A hypertensive patient has been administered lisinopril. What side effect is typical for this drug?

a. Vomiting

b. Insomnia

c. Dry cough

d. Increased appetite

e. Constipation

842. A patient has a history of cholelithiasis. What drug should be administered to prevent biliary colic?

a. Bisacodyl

b. Contrycal

c. Magnesium sulfate

d. Pancreatin

e. Almagel

843. A patient with the symptoms of cardiac glycoside intoxication has been administered unitiol. What is the mechanism of therapeutic action of this drug?

a. Increased penetration of K<sup>+</sup> into the cardiac myocytes

b. Binding of the ionized Ca<sup>2+</sup>

c. Induction of cardiac glycosides metabolism

d. Increase in Na<sup>+</sup> level in the myocardium

e. Reactivation of the membrane K<sup>+</sup>, Na<sup>+</sup>-ATPase

844. Pharmaceutical market of Ukraine comprises pharmacies of various forms of ownership. Specify the form of ownership for a community pharmacy:

a. -

b. Private person

c. Territorial community

d. Group of shareholders

e. Workforce of an enterprise

845. Enrolled in private pharmacies to implement a drug whose active ingredient is the chemical name of 2-chloro-10-(3-dimethylaminopropyl)-phenothiazine hydrochloride. Specify this drug:

a. Diphenhydramine hydrochloride

b. Trifluoperazine hydrochloride

c. Chlorpromazine hydrochloride

d. Clonidine hydrochloride

e. Promethazine hydrochloride

846. It is required to prove the presence of bismuth ions in the mineral residue. What preliminary reaction is used for this purpose?

a. With sodium rhodizonate

b. With 8-hydroxyquinoline

c. With copper acetate

d. With potassium chromate

e. With dithizone

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

a. Gelatin

b. Methyl cellulose

c. Pepsin



- d. Trypsin
- e. Pancreatin

848. A pharmaceutical analyst identifies the substance of potassium acetate. What reagent confirms the presence of potassium cation in the substance?

- a. Iron (III) chloride
- b. Zinc oxide
- c. Sodium hydroxide
- d. Potassium permanganate
- e. Tartaric acid**

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

- a. Oscillating mixers
- b. Drum mixers
- c. Gate mixers
- d. Anchor mixers
- e. Rotor-pulsation apparatus, colloid mixers**

850. Simultaneous use of paracetamol and acetylcysteine causes:

- a. Reduction of anti-inflammatory action of paracetamol
- b. Increase of mucolytic action of acetylcysteine
- c. Increase of paracetamol nephrotoxicity
- d. Inhibition of paracetamol absorption
- e. Reduction of paracetamol hepatotoxicity**

851. A patient who has been treated for hypertension complains of cough. Objective examination reveals no changes in the lungs. Which of the following drugs might have caused cough?

- a. Nebivolol
- b. Captopril**
- c. Hypothiazide
- d. Clonidine
- e. Amlodipine

852. Under the SPh of Ukraine, one of the reactions for the detection of calcium cation presence in drugs is the reaction with:

- a. Hydroxyquinoline
- b. Hydroxylamine
- c. Alizarin
- d. Sulfuric acid
- e. Glyoxal-hydroxyanil**

853. A marketing manager of a pharmaceutical company carries out market research on vitamin preparation market. He takes into account various parameters including the therapeutical effectiveness, supply and demand. What method should be applied?

- a. Delphi method**
- b. Mathematical statistics method
- c. Method of extraction from the original medical records
- d. -
- e. Graph method

854. Representatives of the family Solanaceae are widely used in medical practice as alkaloid-containing plants. Which representative is the source for production of semi-synthetic steroid hormones?

- a. Solanum tuberosum
- b. Datura Stramonium
- c. Atropa belladonna
- d. Solanum laciniatum**

e. Hyoscyamus niger

855. A pharmacy received a prescription for an oil liniment including streptocidum. What is the type of disperse system of this preparation?

- a. Combined
- b. Solution
- c. Emulsion

**d. Suspension**

e. Alloy

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

- a. Glucose solution
- b. Solution of caffeine sodium benzoate
- c. Sodium thiosulfate solution

**d. Sodium bicarbonate solution**

e. Novocaine solution

857. Stimulation of beta-cells of the pancreas causes the hypoglycemic effect of the following drug:

a. Adrenaline hydrochloride

**b. Glibenclamide**

- c. Prednisolone
- d. Retabolilum
- e. Heparin

858. Quarterly evaluation of business and financial performance of a pharmacy involves calculating its profitability. For this purpose the following data is used: turnover - 100 thousands UAH, gross profit - 25 thousands UAH, expenditures - 1 thousand UAH. Calculate the profitability of the pharmacy:

**a. 15%**

- b. 10%
- c. 25%
- d. 20%
- e. 22%

859. A 12 weeks pregnant patient has been hospitalized with symptoms of acute cystitis. What antibiotic can be recommend in this case?

- a. Tetracycline
- b. Ciprofloxacin
- c. Metronidazole
- d. Gentamicin

**e. Amoxicillin**

860. Collective labour agreement is concluded by a trade union committee with the 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. 41
- b. 40
- c. 36

**d. 17**

e. 38

861. A hypertensive patient has been prescribed a drug from the group of non-selective beta-blockers. Specify this drug:

- a. Prazosin
- b. Adrenaline hydrochloride

**c. Anaprilin**

- d. Neostigmine methylsulfate
- e. Labetalol

862. A pharmacist has to prepare 10% alcohol solution of iodine. What is the required

concentration of ethanol for this purpose?

- a. 60%
- b. 70%
- c. 96%
- d. 95%**
- e. 40%

863. 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 (Fehlings reagent). What colour precipitate is produced?

- a. White
- b. Blue
- c. Purple
- d. Red**
- e. Black

864. While preparing marshmallow root extract, a pharmacist mistakenly used the water of improper temperature for this extract, and the end product came up turbid. What is the required water temperature for the extraction of this herbal material?

- a. 60°C
- b. 80°C
- c. Room temperature**
- d. 40°C
- e. 100°C

865. A pharmacy plans to expand the production of medicines. For this purpose it purchased the production equipment at a cost of 7000 UAH. The cost of the equipment will be recorded to the balance of the pharmacy as:

- a. Amortization cost
- b. Residual
- c. Revalued amount
- d. Initial cost**
- e. Fair value

866. A factory workshop producing suspensions and emulsions is going to develop the manufacture of new drugs. What mechanisms can be used for the ultrasound processing of drugs?

- a. Liquid whistle, magnetostrictive source**
- b. Centrifugal mixer with rotating housing
- c. Dismembrator, electrical impulse plasmolyzer
- d. Rotor-pulsation apparatus, dismembrator
- e. Disintegrator, liquid whistle

867. A 38-year-old male patient with mercuric chloride intoxication has been delivered to the admission ward in grave condition. What antidote must be immediately administered the patient?

- a. Izonitrozinum
- b. Unithiol**
- c. Dipyroxime
- d. Atropine
- e. Nalorphine

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

- a. It dissolves in the purified water after the trituration
- b. It dissolves in a minimal amount of ethyl alcohol
- c. It dissolves in the cold purified water
- d. It dissolves in the boiling water purified in the presence of sodium chloride**
- e. It dissolves in the filtered purified water

869. Help the doctor to select a drug for the replacement therapy after the thyroid gland removal:

- a. Parathyroidin
- b. Insulin
- c. L-thyroxine**
- d. Prednisolone
- e. Mercazolilum

870. 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 five calendar days from the date of issue
- b. No longer than 10 calendar days from the date of issue**
- c. No longer than one year from the date of issue
- d. No longer than one calendar days from the date of issue
- e. No longer than three months from the date of issue

871. After harvesting the calamus rhizomes the received material should be dried. What temperature range is required for obtaining good-quality raw material?

- a. 80-90°C
- b. 70-80°C
- c. 40-60°C
- d. 60-70°C
- e. 35-40°C**

872. A drug raw material from the family Polygonaceae had been sent to a laboratory for analysis. On macroscopic examination the material was identified as a herbaceous plant with lanceolate leaves with a red spot, and filmy ocreae covered with appressed hairs. The plant had the apical inflorescence in dense spicate panicles. What plant is it?

- a. Common knotweed
- b. Biting knotweed
- c. Redshank (persicaria)**
- d. Snakeweed
- e. Common buckwheat

873. A 67-year-old patient with chronic heart failure takes digoxin. In order to reduce its side effects the patients doctor recommended to combine it with the followig drug:

- a. Panangin**
- b. Calcium chloride
- c. Hydrochlorthiazide
- d. Euphyllinum
- e. Calcium gluconate

874. A person got poisoned with an unknown substance. Chemico-toxicological test for the isolated toxin with Dragendorffs, Sonnenscheins, Scheiblers reagents caused setting of sediments. The specific study should be focused on the following group of toxic substances:

- a. Alkaloids and nitrogen-containing compounds**
- b. Methyl alcohol
- c. Hydrocyanic acid
- d. Metal toxins
- e. Ammonia and its salts

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

- a. Camphor, menthol**
- b. Sodium bicarbonate, sodium sulfate
- c. Boric acid, calcium carbonate
- d. White clay, bentonite
- e. Zinc oxide, talc

876. A pharmacist worked on a holiday, and the time worked was within the normal working hours of 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 penalty rates
- e. Single piecework rate

877. A 43-year-old patient with a severe form of rheumatoid arthritis has been administered a certain drug for background therapy. Specify this drug:

- a. Methylprednisolone
- b. Prednisolone

**c. Methotrexate**

- d. Nimesulide
- e. Diclofenac sodium

878. Anthracene derivatives of emodin have purgative effect. Large quantities of anthracene-derived groups of emodin are contained in the fruits of the following plant:

- a. Alder buckthorn (*Frangula alnus*)
- b. Blackcurrant
- c. Blueberry (*Vaccinium myrtillus*)

**d. Buckthorn**

- e. Elder (*Sambucus*)

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

- a. Phosphacolum
- b. Atropine sulfate

**c. Proserin**

- d. Benzohexonium
- e. Dithylinum

880. Issuing prescriptions and orders for drugs and medical products is regulated by the Order № 360 dated 19.07.2005 (as amended). Specify the prescription form for phenobarbital as a part of a combined dosage form:

- a. Prescription forms F-1 and F-3 in duplicate

**b. F-1**

- c. No prescription
- d. F-2
- e. F-3 in duplicate

881. Drug plant *Dioscorea nipponica* is the source for production of Polysponinum drug which is used in the complex treatment of atherosclerosis. Specify the active compounds of dioscorea material:

**a. Steroidal saponins**

- b. Triterpene saponins
- c. Cardiac glycosides
- d. Alkaloids
- e. Essential oil

882. Theory of management currently points out four the most important approaches to the management. Select the approach that is NOT applied in the theory of management:

**a. Structured**

- b. Process approach
- c. Situational
- d. Systemic
- e. Different schools dedication approach

883. What herbal drug produced from alkaloid-containing raw materials can be recommended for

neurasthenia, insomnia, menopausal disorders?

- a. Securinine nitrate
- b. Ergotamine
- c. Glaucine hydrochloride
- d. Novopassit**
- e. Vinblastine

884. During transportation, the markings on the packages of theobromine and theophylline were damaged. What solution allows to identify theobromine and theophylline?

- a. Potassium permanganate
- b. Copper nitrate
- c. Potassium dichromate
- d. Cobalt chloride**
- e. Sodium chloride

885. Specify the base for the preparation of antibiotic ointments:

- a. 7 parts of vaseline + 3 part of lanolin
- b. 8 parts of vaseline + 2 part of lanolin
- c. 5 parts of vaseline + 1 part of lanolin
- d. 6 parts of vaseline + 4 part of lanolin**
- e. 5 parts of vaseline + 5 part of lanolin

886. Under the SPbU requirements mercury salts are identified by means of interaction with sodium hydroxide solution. Specify the colour of the precipitate that is produced as a result of this reaction:

- a. White
- b. Yellow**
- c. Yellow-green
- d. Blue
- e. Red

887. A regional medical representative of a foreign company uses the data derived from periodicals and reference and statistical materials in order to characterize the territorial pharmaceutical market. What kind of market research is based upon these sources?

- a. This method does not apply to research
- b. All answers are correct
- c. -
- d. Field studies
- e. Desk studies**

888. White precipitate produced by the reaction of morphine hydrochloride with ammonia solution dissolves in sodium hydroxide solution due to the presence of the following group in the structure of morphine hydrochloride:

- a. Phenolic hydroxyl**
- b. Aldehyde group
- c. Alcoholic hydroxyl
- d. Carboxyl group
- e. Keto group

889. Paracetamol substance has been sent for analysis. Reaction with the solution of iron (III) chloride gave the blue-purple colour. This indicates the presence of:

- a. Ester group
- b. Aldehyde group
- c. Phenolic hydroxyl**
- d. Alcoholic hydroxyl
- e. Keto group

890. A retail pharmacy has been purchasing goods within an accounting period. What changes to the balance will result from this business transaction?

- a. Changes will be caused to the liabilities only
- b. Decrease in assets and liabilities
- c. -
- d. Increase in assets and liabilities**
- e. Changes will be caused to the assets only

891. A 17-year-old patient complains of persistent thirst, dry mouth, frequent urination, increased appetite. Blood glucose is at the rate of 11 mmol/l. The patient has been diagnosed with diabetes mellitus type I. What drug is indicated for treatment?

- a. Asparcamum
- b. Maninil
- c. Insulin**
- d. Acarbose
- e. Glibenclamide

892. During the working day a pharmacist prepared five dosage forms. Which of them requires a complete chemical control?

- a. Antipruritic ointment
- b. Ear drops with levomycitin
- c. Mixtura Pavlovi
- d. Eye drops 10 ml of 2% ethylmorphine hydrochloride solution**
- e. 5% aethonium solution

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

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

894. Activity of a company leader involves managerial decision-making aimed at the achievement of corporate goals. Which of the following decisions are NOT classified by the method of justification?

- a. Intuitive
- b. Standard**
- c. -
- d. Decisions based upon judgements
- e. Rational

895. The pharmaceutical market is characterized by the seasonal fluctuations in demand for anti-cold medicines. What kind of marketing is used in case of such demand?

- a. Remarketing
- b. Counteractive
- c. Conversive
- d. Developing marketing
- e. Synchromarketing**

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

- a. Volatilization of essential oils
- b. Enzymatic hydrolysis of cardiac glycosides**
- c. Oxidation of terpenoids
- d. Oxidation of phenolic compounds
- e. Oxidation of resins

897. Business transactions of pharmacies are reported in the accounts. Specify the account that reports the settlements with debtors and creditors:

a. Negative

**b. Nominal**

c. Positive

d. Business

e. Trial balance

898. Pharmaceutical plants produce ointments on various bases. Specify the ointment base having the most pronounced osmotic properties:

a. Silicon

b. Vaseline, lanolin

**c. Polyethylene oxide**

d. Methyl cellulose

e. Hydrogenated fat

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

a. Folia Salviae

b. Folia Uvae ursi

c. Folia Absinthii

**d. Folia Menthae piperitae**

e. Folia Eucalypti

900. The thyme grass is used for the production of herbal medical products for the treatment of respiratory tract infections. Under the SPhU, the herbal raw 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. Quercetin and rutin

**b. Thymol and carvacrol**

c. Arbutin and methyl arbutin

d. Atropine and hyoscyamine

e. Apigenin and luteolin

901. Phenobarbital drug has a sedative, hypnotic and anti-epileptic effect. What is its international nonproprietary name?

a. Nitrofurazone

**b. Luminal**

c. Chloramphenicol

d. Salol

e. Diazepam

902. A 35-year-old patient with tachycardia has been administered propranolol. Which of the following reactions may be caused by the use of beta-blockers?

a. Cumulation

b. Constipations

**c. Bronchospasm**

d. Blood pressure rise

e. Drug dependence

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

**a. Zero level**

b. Second level

c. Fourth level

d. Third level

e. First level

904. At the end of the reporting period a pharmacy makes an analysis of its commercial and financial activities. What economic index describing the commercial and financial performance is defined as the ratio of the pharmacy profit to the turnover?



- a. Distribution costs
- b. Wholesale turnover

**c. Profitability**

- d. Retail turnover
- e. Bill of material

905. A patient has been found to have pesticide intoxication. Biochemical (cholinesterase) test was positive. What pesticide is likely to have caused the intoxication?

- a. Hexachlorocyclohexane
- b. Heptachlor

**c. Dichlorvos**

- d. DDT
- e. Ethyl mercury chloride

906. Which of the following antihypertensive drugs has potassium-sparing action?

**a. Triamterene**

- b. Furosemide
- c. Prazosin
- d. Metoprolol
- e. Diltiazem

907. A pharmacist prepared the massage cream of the following composition: Beeswax 12,0 Almond oil 68,5 Spermaceti 12,0 Anhydrous lanolin 7,5 Essential oil of lavender 3 drops. Specify the cream type:

a. Emulsion

**b. Oily**

- c. Suspension
- d. Combined
- e. Non-oily

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

a. Drug dependence

**b. Tachyphylaxis**

- c. Cumulation
- d. Idiosyncrasy
- e. Allergy

909. What non-narcotic antitussive drug of central action can be used for dry cough?

**a. Glaucine**

- b. Codeine
- c. Ambroxol
- d. Mucaltin
- e. Acetylcysteine

910. A laboratory for drug quality control checks the quality of the drug substance nitrofuril (furacilin). The chemical denomination of this drug is:

**a. 5-Nitro-2-furaldehyde semicarbazone**

- b. 7-Nitro-5-phenyl-1,3-dihydro-2H-1,4-benzodiazepin-2-one
- c. 1-(5-Nitrofurfurilidenamino)imidazolidine-2,4-dione
- d. N(-(2-Furandil)-5-fluorouracil
- e. 1,2-Diphenyl-4-butylpyrazolidine-dione-3,5

911. In order to analyze marketing opportunities and make a forecast of the market position a pharmaceutical company can use a matrix allowing the company to find new markets (geographical) or identify new areas of using traditional medicines. What matrix is used by a pharmaceutical

company to identify its market position?

- a. Ansoff matrix
- b. Competitive force models
- c. Matrix of competitive advantages
- d. Porters matrix
- e. Boston Consulting Group matrix

912. Who is responsible for the acceptance of goods and medical products with accompanying incoming quality control?

- a. Head of pharmacy
- b. Pharmaceutist
- c. Authorized representative
- d. Analyst
- e. Supplier pharmacist

913. Under the SPuH (appendix 2), leaves of ginkgo are standardized by the content of:

- a. Chromones
- b. Saponins
- c. Alkaloids
- d. Flavonoids
- e. Coumarins

914. A pharmaceutical factory produces tablets of sodium chloride. What is the method of their production?

- a. Direct compression without additional substances
- b. Dry granulation prior to compression
- c. Moulding
- d. Direct compression with the addition of excipients
- e. Wet granulation prior to compression

915. Which drug including the beta-lactam cycle in its structure gives a positive reaction with a solution of hydroxylamine hydrochloride in the presence of sodium hydroxide followed by adding the solution of iron (III) chloride?

- a. Streptocid
- b. Antipyrine
- c. Papaverine hydrochloride
- d. Phenoxymethylpenicillin
- e. Dibazolium

916. Bronchodilatory effect of short-acting  $\beta_2$ -adrenoceptor agonist salbutamol develops after:

- a. 5-10 minutes
- b. 4-6 hours
- c. 20-30 minutes
- d. 45-60 minutes
- e. 2-3 hours

917. When atropine sulfate is tested for purity, the alkaloids and degradation products are detected by TLC. For this purpose the chromatographic plate is sprayed with a solution of:

- a. Potassium iodobismuthate
- b. Ninhydrin
- c. Ammonia
- d. Acetic-hydrochloric dinitrophenylhydrazine
- e. Tetrabutylammonium hydroxide

918. A patient with Parkinsons disease has been prescribed a drug with a predominant effect on the dopaminergic system. What drug is it?

- a. Droperidol
- b. Lorazepam

- c. Aminazine
- d. Zopiclone
- e. Levodopa**

919. Select a drug for the treatment of bronchial asthma from the group of  $\beta_2$ -agonists:

- a. Atrovent
- b. Ketotifen
- c. Beclomethasone
- d. Salbutamol**
- e. Aminophylline

920. Ampule workshop of a pharmaceutical factory produces the procaine hydrochloride solution. This solution is stabilized by adding:

- a. 20,0 of sodium hydrogen carbonate
- b. 0,1 mol/l of sodium hydroxide solution
- c. 0,1 mol/l of sodium hydrogen carbonate solution
- d. 1,5 g of amino-propylene glycol
- e. 0,1 mol/l of hydrochloric acid solution**

921. The simple sugar syrup consists of:

- a. 45 parts of sugar and 55 parts of water
- b. 65 parts of sugar, 33 parts of water, 2 parts of 90% alcohol
- c. 73 parts of sugar, 22 parts of water, 5 parts of 90% alcohol
- d. 64 parts of sugar and 36 parts of water**
- e. 50 parts of sugar and 50 parts of water

922. Some alkaline solution was added to the alcohol solution of ftivazide, causing the solution to change colour from the light yellow to the orange-yellow. Subsequent addition of hydrochloric acid made the solution become again light yellow, and then orange-yellow. What properties of ftivazide are proved by this reaction?

- a. Reducing
- b. Acid
- c. Amphoteric**
- d. Base
- e. Oxidative

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

- a. Dithylinum
- b. Galantamine
- c. Atropine**
- d. Neostigmine
- e. Benzohexonium

924. The medicine "Bismuthi subnitras" can be identified after dissolving it in the acid with the following reagent:

- a. Potassium chlorate
- b. Potassium nitrate
- c. Sodium chloride
- d. Sodium sulfate
- e. Potassium iodide**

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

- a. 1:10 and 1:100**
- b. 1:1000
- c. 1:500
- d. 1:10 only

e. 1:100 only

926. A pharmaceutical analyst analyzes xeroform. Which of the following reagents can he use to identify bismuth in xeroform?

- a. Ammonium hydroxide
- b. Sodium sulfide**
- c. Copper sulphate
- d. Potassium sodium tartrate
- e. Barium chloride

927. A pharmacist prepared the 2% aqueous solution by dissolving the drug substance triturated in a mortar. What substance is this technology typical for?

- a. Potassium bromide
- b. Calcium gluconate
- c. Boric acid
- d. Osarsolum
- e. Potassium permanganate**

928. A woman who has been treated for infiltrative focal tuberculosis for a long time complains of acute hearing impairment. Which of the following preparations might be the cause of this side effect?

- a. Ethionamidum
- b. Isoniazid
- c. Rifampicin
- d. Ethambutol
- e. Streptomycin**

929. A patient with atopic dermatitis presented to the hospital. Which drug with anti-inflammatory and antiallergic effect should be administered to this patient?

- a. Insulin
- b. Oxytocin
- c. Prednisolone**
- d. Retabolilum
- e. Aethamidum

930. Production, labour and socio-economic relations between the head of a pharmaceutical company and the workforce are regulated by:

- a. Corporate code
- b. Labour contract
- c. Statute
- d. Collective agreement**
- e. Contract

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

- a. Urine acid diathesis
- b. Hyperglycemia
- c. Hypokalemia
- d. Pregnancy**
- e. Hyperlipidemia

932. One of the recent industrial medical forms that is used in pediatric practice and intended for young children unable of swallowing tablets is:

- a. Gelatin microcapsules
- b. Spansules
- c. Granules
- d. Tubatines**
- e. Dragee

933. A 25-year-old patient with frequent migraine attacks has been prescribed sumatriptan. Specify the mechanism of its action:

- a. Selective alpha-blocker
- b. Selective agonist of 5-HT<sub>1</sub>-serotonin receptors**
- c. Stimulator of beta-adrenergic receptors
- d. Nonselective alpha-blocker
- e. Selective antagonist of 5-HT<sub>1</sub>-serotonin receptors

934. A manufacturing enterprise plans to sell a new drug through the corporate chain of pharmacies. What strategy of drug distribution would be used?

- a. Multi-echelon
- b. Direct**
- c. Horizontal integration
- d. Flexible
- e. Vertical integration

935. Exacerbation of urolithiasis has caused a renal colic in the patient. What drug must be administered to arrest the colic?

- a. Neostigmine methylsulfate
- b. Aethimizolum
- c. Almagel
- d. Siliborum
- e. Drotaverine hydrochloride**

936. Simultaneous use of doxycycline hydrochloride and oral contraceptive causes:

- a. Increase of oral contraceptives effectiveness
- b. Increase of the antibacterial effect of doxycycline
- c. Reduction of oral contraceptives effectiveness**
- d. Reduction of the antibacterial effect of doxycycline
- e. -

937. What drug acts as a specific antidote in case of iron drug intoxication?

- a. Bemegride
- b. Protamine sulfate
- c. Penicillamine
- d. Atropine
- e. Deferoxamine**

938. A pharmaceutical plant produces spissum extract with 0,25% ammonia solution used as an extractant. This is a spissum extract of:

- a. Valerian
- b. Male fern
- c. Sagebrush
- d. Motherwort
- e. Licorice**

939. Flower buds of clove contain the essential oil used for production of herbal antiseptics. Under the State Pharmacopoeia of Ukraine, the raw materials are identified by the method of thin layer chromatography. What zones can be identified on the chromatographic plate after their treatment with reagent?

- a. Hyoscyamine and scopolamine
- b. Apigenin and luteolin
- c. Eugenol and caryophyllene**
- d. Scopoletin and umbelliferon
- e. Quercetin and rutin

940. An accountant of a pharmacy issued a cash receipt voucher for the sales proceeds. What document is used to register cash receipt and cash payment vouchers before the cash arrives to the cashiers?

- a. Cash book

- b. Cash report
- c. Pay list
- d. Ledger of cash dispensed and received by the senior teller
- e. Register of receipt and payment cash documents**

941. 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. Centralization
- e. Integration

942. 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. MoH of Ukraine
- b. Highest management bodies of pharmaceutical service at the regional level
- c. Trade union committee
- d. Labour disputes commission (LDC)**
- e. Commercial court

943. A patient after acute myocardial infarction has been recommended to take acetylsalicylic acid for 3-4 months. What effect of acetylsalicylic acid would be most relevant for this patient?

- a. Spasmolytic
- b. Analgesic
- c. Antipyretic
- d. Antiinflammatory
- e. Antiplatelet**

944. Economic analysis of pharmacy activity involves a number of absolute indices. What index is determined by the formula: "income from sales - prime cost of goods":

- a. Net profit
- b. Total balance
- c. Level of costs
- d. Amount of costs
- e. Gross profit**

945. A pharmacist prepares an ointment on a hydrophobic base. What substance does he use in order to reduce the melting point of the base?

- a. Glycerol
- b. PEG-40
- c. Vaseline oil**
- d. Dimexide
- e. Ethanol

946. Phytochemical workshop of a factory manufactures pancreatin. What is the source material for obtaining pancreatin?

- a. Gastric mucosa of pigs
- b. Egg white
- c. Pancreas of pigs or cattle**
- d. Heart of cattle
- e. Lungs of cattle

947. An accountable person (accountant) has been given some cash from the cash account of the company for the purchase of stationery goods. What is the deadline for submitting a full statement of the accountable person on the cash use after receiving the cash?

- a. One week**

- b. There is no fixed term
- c. Five working days
- d. Third banking day**
- e. Ten working days

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

- a. Higher neurotoxicity
- b. Potentiation of metronidazole effect
- c. Reduction of anticoagulants effect
- d. Reduction of metronidazole effect
- e. Potentiation of anticoagulants effect and the risk of bleeding**

949. An analytical laboratory received a sample of alpha-aminobutyric acid for analysis. What reagent should be used by the analyst in order to identify this substance?

- a. Benzene
- b. Sodium nitrate
- c. Ninhydrin**
- d. Aniline
- e. Calcium bromide

950. A pharmacy sells medicines. Which of the following medicines is on the list of the controlled substances?

- a. Postinor
- b. Gentamicin sulfate
- c. Streptocid
- d. Tramadol**
- e. Hydrocortisone acetate

951. During steam distillation of volatile poisons the first portion of the distillate is collected in a receiver with 2% solution of sodium hydroxide. It is used to detect:

- a. Acetates
- b. Formaldehyde
- c. Cyanides**
- d. Ethanol
- e. Phenol

952. According to SPhU, formaldehyde can be identified when a sample is reacted with chromotropic acid solution in the presence of concentrated sulfuric acid. What colour is formed by this reaction?

- a. Brown
- b. Yellow
- c. Blue
- d. Violet**
- e. Green

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

- a. Apyrogenicity
- b. Isoviscosity
- c. Isohydricity
- d. Osmolality**
- e. Isotonicity

954. Treatment of a patient who has developed an attack of bronchial asthma for the first time should be started with:

- a. H<sub>2</sub>-histamine blockers
- b. Agonists parenterally
- c. Inhalation of beta<sub>2</sub>-agonists**

- d. Inhalation of glucocorticosteroid
- e. M-anticholinergic drugs

955. Pharmaceutical depot received a batch of herbal material of cinnamon rose. What substance determines the quality of the raw material?

- a. Ascorbic acid
- b. Coumarins
- c. Tannins
- d. Anthracene derivatives
- e. Essential oil

956. Biochemical blood test revealed low level of serum iron. What disease are these changes typical for?

- a. Bronchial asthma
- b. Iron-deficiency anemia
- c. Pneumonia
- d. Bronchiectasis
- e. Acute bronchitis

957. Advise an internship doctor on why iron preparations should not be administered along with antacids:

- a. This causes increased binding to blood proteins
- b. This accelerates elimination of iron preparations
- c. This impairs deposition of iron in the body
- d. This increases intoxication with iron preparations
- e. This causes malabsorption of iron

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

- a. Microscope
- b. Friabilators
- c. Various vibrosieves
- d. Laboratory IDs
- e. Standard set of sieves

959. A pharmacist prepares an infusion at a ratio of 1:30. What plant material would be used?

- a. Marshmallow root
- b. Oak bark
- c. Lily of the valley grass
- d. Sage leaves
- e. Shoots of Marsh Labrador tea

960. What is the function of anhydrous lanolin in the suppository mass used for suppositories prepared by hand rolling?

- a. Preservative
- b. Plasticizer
- c. Solubilizer
- d. Emollient
- e. Solvent

961. It is required to perform the extraction of medical poisons isolated from the biological material by the method of V.P. Kramarenko. At the same time, what substance will be extracted from the acidic medium?

- a. Papaverine
- b. Codeine
- c. Ephedrine
- d. Aminazine
- e. Benzonal



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

- a. Disorder of protein binding
- b. Changed volume of distribution
- c. Decreased absorption in the gastrointestinal tract
- d. Inhibition of the prothrombin synthesis**
- e. Increased absorption in the gastrointestinal tract

963. A pharmacy has no quinquelobate motherwort in stock. It can be substituted by the following herbal material:

- a. Rhizomes and roots of valerian**
- b. Raspberry fruits
- c. Hypericum grass
- d. Beggarticks grass
- e. Linden flowers

964. A female 49-year-old patient complains of compressing headache in the occipital region, dizziness, increased AP. The patient has a history of diabetes mellitus type II. What diuretic DOES NOT affect the blood glucose level?

- a. Urea
- b. Furosemide
- c. Hypothiazide
- d. Ethacrynic acid
- e. Indapamide**

965. A pharmacist working at an analytical laboratory is engaged into sulfite-ion identification of a drug in compliance with the requirements of SPhU. What reagent becomes colourless in this study?

- a. Ammonia solution
- b. Iodine solution**
- c. Potassium iodide solution
- d. Potassium nitrate solution
- e. Iron (III) chloride solution

966. Which of the following sublingual drugs quickly relieves an attack of stenocardia?

- a. Corglycon
- b. Nitroglycerine**
- c. Amiodarone
- d. Lisinopril
- e. Digoxin

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

- a. Liquoris Ammonii anisatis
- b. Mint water**
- c. Sugar syrup
- d. Sodium benzoate
- e. Sodium hydrogen carbonate

968. Chloride of lime is identified by calcium cations after boiling with acetic acid in order to eliminate active chlorine. What reagent is used?

- a. Ammonium molybdate
- b. Magnesium sulfate
- c. Ammonium oxalate**
- d. Potassium chloride
- e. Sodium nitrite

969. What drug can be recommended for symptomatic treatment of muscle pain in a 5-year-old child?

a. Paracetamol

b. Celecoxib

c. Diclofenac sodium

d. Indomethacin

e. Acetylsalicylic acid

970. Senior nurse of the surgical department of the city hospital applied to the interhospital pharmacy. Specify the supporting document for the dispensation of dressing material from this pharmacy:

a. Requisition

b. Passport

c. Certificate

d. Tax invoice

e. Invoice

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

a. Limited to the contributions to the statutory fund and their property

b. Limited to the value of their shares

c. Limited to the double amount of deposits

d. Unlimited and solidary

e. Limited to the amount of deposits

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

a. Water alkalized with ammonia solution

b. Chloroform

c. Ethanol acidified with oxalic acid

d. Water acidified with sulfuric acid

e. Propanol acidified with oxalic acid

973. A person got poisoned with the lead compounds. What is the most sensitive method of the quantitative analysis of lead ions?

a. Atomic absorption spectrometry

b. Chelatometry

c. Photometry

d. Gravimetry

e. Dichromate iodimetry

974. A pharmaceutical analyst working at the laboratory of the State Inspectorate for Quality Control of Medicines identifies "Thiamine hydrobromide" with the solution of potassium ferricyanide in the alkaline medium. When doing this, he observes a light-blue fluorescence of the alcohol layer in UV light. What product is thus formed?

a. Quinoneimine

b. Murexide

c. Thiochrome

d. Ninhydrin

e. Thalleioquin

975. Ampule quality control involves testing for chemical resistance. What methods are used to test this indicator?

a. Photoelastic method

b. Visual, gravimetric methods

c. Exposing the glass samples to the action of sodium carbonate and sodium hydrocarbonate solutions

d. Various acid-base indicators, pH meter, gravimetric methods

e. Autoclaving followed by titration with a solution of hydrochloric acid

976. A pharmacist has to prepare an aqueous extract of medicinal plants. What can be used as a substitute of plant material in the drug preparation?

- a. Aromatic water
- b. Standardized extract concentrate**
- c. Liquid extract
- d. Thick extract
- e. Tincture

977. A pharmacist has prepared a suspension with a hydrophobic substance. What stabilizer is required for its preparation?

- a. Glucose
- b. Sodium chloride
- c. 5% solution of methyl cellulose**
- d. Polyethylene oxide
- e. Sodium thiosulfate

978. Rose essential oil is used as an anti-inflammatory and antispasmodic agent. It is localized in the following excretory structures:

- a. Essential oil glandules
- b. Glandular spots**
- c. Glandular hairs
- d. Secretory cells
- e. Essential oil conceptacles

979. A certain plant is used for production of tinctures and extracts which are the part of complex drugs Bellataminal, Becarbon, Besalol, etc. Specify the grass that is used for this purpose:

- a. Celandine
- b. Belladonna**
- c. Beggarticks
- d. Astragalus
- e. Lily of the valley

980. Methyl alcohol which is widely used in industry causes severe health disorders when enters the human body even in small amounts. This effect is induced by the action of the following major metabolites of methanol:

- a. Formaldehyde and formate acid**
- b. Acetic acid and acetaldehyde
- c. Ethyl alcohol and ethyl acetate
- d. Ethanol and acetaldehyde
- e. Methyl acetate and ethyl acetate

981. A patient with hypertensive crisis has been given an intravenous injection of clonidine. What mechanism underlies the antihypertensive effect of clonidine?

- a. Blockade of beta-adrenergic receptors
- b. Blockade of N-cholinergic receptors
- c. Direct myotropic effect on blood vessels
- d. Blockade of peripheral alpha1-adrenergic receptors
- e. Stimulation of the central presynaptic alpha2-adrenergic receptors**

982. A pharmacy serves the polyclinics of a city district. Specify the bill of materials that shows the number of drugs dispensed on prescriptions of the doctors who work in the polyclinics:

- a. Inpatient
- b. Polyclinic
- c. Outpatient**
- d. -
- e. Medical

983. Commercial and financial activity of a pharmacy involves using returnable tare. Which of the

following containers are returned to the supplier?

- a. Glassware
- b. Packaging materials
- c. Metal cylinders**
- d. Paper boxes
- e. Glass-stoppered bottles

984. A pharmaceutical manufacturer develops a system of product. The focus is laid on the maximum involvement of agent network. What type of marketing is applied?

- a. Combined
- b. Exclusive
- c. -
- d. Intense**
- e. Selective

985. Business transactions of a pharmacy are recorded in the control accounts as listed in the chart of accounts. The balance on the ledger and sub-ledger accounts is used to fill out the following document:

- a. Profit and loss account
- b. Liabilities
- c. Fourth section of the liabilities side
- d. First section of the liabilities side
- e. Assets**

986. 6 months after treatment a patient with coronary heart disease developed tolerance to the prolonged-action nitrates. What drug with nitrate-similar effect should be recommended in this case?

- a. Nifedipine
- b. Molsidomine**
- c. Prazosin
- d. Metoprolol
- e. Verapamil

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

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

988. Galenic preparations are produced by using various extractants. What extractants require pressure as a prior condition for the extraction process?

- a. Vegetable oils
- b. Dichloroethane, chloroform
- c. Ethanol
- d. Methyl alcohol, acetone
- e. Liquefied gases**

989. A sample of biological material contains mercury. Specify the method of mercury isolation:

- a. Isolation by organic solvents
- b. Isolation by acidified alcohol
- c. Mineralization
- d. Steam distillation
- e. Destruction**

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

- a. Dissolution in water intended for diluting the primary emulsion

b. Dispersion with the addition of ready emulsion

**c. Dissolution in oil**

d. Dissolution in the ready emulsion by heating

e. Incorporation into the ready primary emulsion

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

a. 1:30

b. 1:20

**c. 1:10**

d. 1:5

e. 1:400

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

a. Stabilizer of Weibel

b. Sodium bicarbonate solution

**c. Hydrochloric acid solution**

d. Sodium sulfite solution

e. Sodium thiosulfate solution

993. A disabled veteran of the WW2 has been prescribed codeine powder. What is the maximum permissible amount of codeine that can be dispensed by the prescription?

a. 1,2

b. 0,1

c. 1,0

d. 0,6

**e. 0,2**

994. Certain groups of drugs are subject to strict record keeping and storage in pharmacies. Specify a drug that relates to the group of narcotics:

a. Clonidine

**b. Ethylmorphine hydrochloride**

c. Analgene

d. Dicaïne

e. Dephadrinum

995. Under the analytical normative documents, atropine sulfate should be titrated with hydrochloric acid solution in the anhydrous acetic acid medium in the presence of the following indicator:

a. Methylene blue

**b. Crystal violet**

c. Phenolphthalein

d. Thymol blue

e. Methyl orange

996. Losartan as a part of treatment of arterial hypertension is contraindicated in case of:

a. Hyperglycemia

b. Hyperlipidemia

c. Hypokalemia

**d. Pregnancy**

e. Urine acid diathesis

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

a. Ticlopidine

b. Acetylsalicylic acid

c. Heparin

d. Phenylinum

**e. Streptokinase**

998. At the end of the drug action drug addicts develop severe mental, neurological and somatic

disorders. This complex of symptoms is called:

- a. Cumulation
- b. Tolerance
- c. Tachyphylaxis
- d. Sensibilization

**e. Withdrawal syndrome**

999. Patients with heart failure caused by persisting cardiac and coronary vessel dysfunction can be 2 recommended preparations produced from the following herbal raw material:

**a. Hawthorn fruits**

- b. Ginseng roots
- c. Barberry roots
- d. Aralia roots
- e. Calendula flowers

1000. Rutin exhibits P-vitamin activity. What medicinal plant is used as starting materials for the industrial production of rutin?

- a. Herba Bidentis tripartitae
- b. Herba Polygoni avicularis
- c. Fructus Hippophaes rhamnoides
- d. Flores Helichrysi arenarii

**e. Fructus Sophorae japonicae**

1001. A patient came to a pharmacy to purchase cowberry leaves. Which of the available herbal raw materials can be offered as a substitute?

- a. Rizoma Calami
- b. Herba Achilleae millefolii
- c. Radix Taraxaci officinalis

**d. Folium Uvae ursi**

- e. Rizoma et radix Sanquisorbae officinalis

1002. Pharmaceutical warehouse received a batch of herbal raw material of cinnamon rose. Under the State Pharmacopoeia, it is required to test this raw material for the following active substances:

a. Essential oil

**b. Ascorbic acid**

- c. Tannins
- d. Flavonoids
- e. Anthracene derivatives

1003. Under the analytical normative documents, prior to direct bromatometric determination of arsenous acid anhydride the following substance should be added to the analyzed solution:

- a. Potassium nitrate
- b. Sodium thiosulfate
- c. Sodium hydroxide

**d. Potassium bromide**

- e. Sodium chloride

1004. A pharmaceutical analyst of an analytical laboratory performs quantitative determination of silver nitrate by thiocyanatometry. What indicator is used in this case?

- a. Phenolphthalein
- b. Starch
- c. Sodium eosinate
- d. Potassium chromate

**e. Iron (III) ammonium sulphate**

1005. A pharmaceutical company produces concentrated extracts. Specify the concentration of ethanol in the extractant required for the production:

- a. 70-75%

b. 90-96%

c. 20-40%

d. 50-60%

e. 70-90%

1006. A factory workshop producing suspensions and emulsions is going to start manufacturing new drugs. What equipment can be used for the ultrasound processing of drugs?

a. Dismembrator, electrical impulse plasmolyzer

b. Rotor-pulsation apparatus, dismembrator

c. Centrifugal mixer with rotating housing

d. Liquid whistle, magnetostrictive source

e. Disintegrator, liquid whistle

1007. The ointment workshop of a pharmaceutical plant launches production of a new ointment. Specify the manufacturing operation that ensures equal distribution of the drug substance in the base:

a. Packaging

b. Homogenization

c. Standardization

d. Preparation of the base

e. Pre-packing

1008. The aerosol workshop of a pharmaceutical plant uses various groups of propellants in the production. What propellants relate to the group of volatile organic solvents?

a. Vinyl and methyl chloride

b. Carbon dioxide

c. Freon (CFCs)

d. Propane, butane, isobutane

e. Methylene chloride, ethylene chloride

1009. The phytochemical workshop of a pharmaceutical plant manufactures liquid extracts. How many volume parts of the liquid extract can be produced from one weight part of herbal rawmaterial in compliance with the State Pharmacopoeia?

a. 10 parts

b. 0,5 part

c. 1 part

d. 5 parts

e. 3 parts

1010. An analytical laboratory received calcium gluconate for analysis. What method is used for its quantification?

a. Bromatometry

b. Mercurimetric determination

c. Nitritometric determination

d. Chelatometry

e. Iodometry

1011. A chemist of the production unit for ampouled medicinal preparations analyzes injectable solution of calcium chloride. According to the requirements, the analyzed solution should be colorless. To meet this requirement, the analyte should be compared to:

a. Alcohol

b. Hydrochloric acid

c. Chloroform

d. Water

e. Acetone

1012. What drug is used as the specific antidote in case of intoxication with iron preparations?

a. Protamine sulfate

- b. Atropine
- c. Penicillamine
- d. Deferoxamine**
- e. Bemegride

1013. Specify the type of capsules which are used for dispensing camphor powders:

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

1014. A pharmacy received a formulation for an extemporaneously compounded medication. Specify the document that is used to set the price for such medication:

- a. Certificate of analysis
- b. Retail price list for drugs**
- c. Certificate of quality
- d. Inventory report
- e. Cash receipt voucher

1015. A pharmacist has prepared a suspension ointment. Specify the substance used for this type of ointments:

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

1016. Ergot (*Secale cornutum*) is used as an uterotonic agent in obstetric practice and for the treatment of cardiovascular diseases. The authenticity of the raw materials is proved by the content of:

- a. Reserpine
- b. Ajmaline
- c. Atropine
- d. Hyoscyamine
- e. Ergotoxine**

1017. Among the given principles of 4 market segmentation select a principle that is used in the study of drug market most often:

- a. Socio-economic
- b. Demographic**
- c. Psychological
- d. Behavioral
- e. Psychographic

1018. Personnel records refer to the following type of documents:

- a. Managerial**
- b. Scientific
- c. Reference information
- d. Directive
- e. Pharmaceutical

1019. A pharmacy received a formulation for eye drops containing 1% solution of pilocarpine hydrochloride. What substance should be used to ensure that the resultant solution is isotonic?

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



1020. A pharmacist prepared 10 powders containing atropine sulfate in an amount of 0,00005 per dose. What trituration had been used?

a. 1:100

b. 1:1000

c. 1:20

d. 1:50

e. 1:10

1021. Which of the following antihypertensive drugs has potassiumsparing effect?

a. Triamterene

b. Prazosin

c. Diltiazem

d. Metoprolol

e. Furosemide

1022. Immunochemical test for detection of opiates in urine is carried out on polystyrene plates with the use of horseradish peroxidase as a label. This method is classified as:

a. Heterogeneous immunofluorescence

b. Heterogeneous radioimmunoassay

c. Homogeneous immunoassay

d. Homogeneous immunofluorescence

e. Heterogeneous immunoassay

1023. When developing the system of marketing communications, a company should consider the characteristics of each tool used for market promotion of a drug. Which of the following characteristics is typical for advertising?

a. Two-way communication

b. Non-mass communication

c. Depersonalization (non-personal communication)

d. All answers are correct

e. There is no correct answer

1024. Quantitative determination of pyridine derivatives is performed by acidimetry in nonaqueous medium. What titrant is used for this purpose?

a. Sodium hydroxide

b. Sodium thiosulfate

c. Sulfuric acid

d. Nitric acid

e. Perchlorate acid

1025. What antiprotozoal agent can be recommended to a female patient with trichomoniasis?

a. Chloridinum

b. Primaquine

c. Metronidazole

d. Solusurminum

e. Chiniofonum

1026. A patient has a history of chronic bronchitis. Recommend him an expectorant which can be purchased at a pharmacy to facilitate the expectoration of thick and viscous mucus:

a. Glauvent

b. Falimint

c. Ambroxol

d. Libexin

e. Salbutamol 5

1027. What drug from the group of cardiac glycosides can be used as an alternative for strophanthine if it is not available at a pharmacy?

a. Celanidum

b. Corglycon

c. Digitoxin

d. Isolanidum

e. Adonisidum

1028. A pharmacy received the following formulation: Rp.: Xeroformii Picis Liquidae Betulae ana 3,0 Olei Ricini 100,0 M.D.S. For wound anointing. Specify the dosage form:

a. Combined ointment

b. Solution

c. Hydrophilic ointment

d. Paste

e. Liniment

1029. What is the most common symptom of atropine intoxication?

a. Hyperhidrosis

b. Myotic pupils with no light response

c. Mydriatic pupils with no light response

d. Bradycardia

e. Reduction of intraocular pressure

1030. In order to detect the presence of thiosulfate ions a pharmaceutical analyst added the excess reagent. The resulting reaction produced a white precipitate which was slowly turning yellow, then brown, and black. What solution was added?

a. Silver nitrate

b. Ammonium oxalate

c. Diphenylamine

d. Lead (II) acetate

e. Barium chloride

1031. Quantitative analysis of boric acid can be performed by alkalimetric titration in the presence of:

a. Mannitol

b. Ammonia buffer

c. Nitric acid

d. Mercury (II) acetate

e. Ethyl alcohol

1032. A customer came to a pharmacy and presented the prescription for Tramadol tablets. For how long such a prescription must be kept at a pharmacy?

a. 1 year, exclusive of the current year

b. 10 years, exclusive of the current year

c. 1 month, exclusive of the current year

d. 5 years, exclusive of the current year

e. 6 months, exclusive of the current year

1033. A 6-year-old child with pneumonia had been administered an antibiotic. After treatment the child lost the hearing. What group of antibiotics might have caused this complication?

a. Macrolides

b. Cephalosporins

c. Aminoglycosides

d. Natural penicillins

e. Semi-synthetic penicillins

1034. Suppositories are prepared by various methods such as rolling, pouring, pressing. What base is used in the pouring method?

a. Cocoa butter

b. Paraffin

c. Butyrolum

d. Vaseline

e. Coriander oil

1035. Select the optimal antibacterial drug for the treatment of mycoplasma pneumonia:

a. Rovamycin

b. Penicillin

c. Amoxiclav

d. Ampicillin

e. Gentamicin

1036. Quantitative determination of pesticides in organic extracts after the isolation from the biological material can be done by various methods. What method of quantitative analysis of chlorophos is based on measuring the peak height parameter?

a. Gas-liquid chromatography

b. Photometry

c. Biochemical method

d. Argentometry

e. Thin-layer chromatography

1037. An analytical chemist of the quality control department of a pharmaceutical plant has to determine the average weight of glibenclamide tablets. How many tablets should be tested for this purpose?

a. 20

b. 5

c. 30

d. 50

e. 10

1038. A pharmacy received 10 kg of hawthorn tincture which was packaged in 80 ml bottles. This operation should be recorded in the following document:

a. Formulation journal

b. Journal of laboratory and prepacking operations

c. Consolidated register

d. Receipt for the ordered medication

e. Cashbook

1039. Employees of a pharmacy receive hourly rate wage and bonuses based on individual performance. What document is issued when calculating the payroll advance?

a. Inventory report

b. Cash receipt voucher

c. Cash payment voucher

d. Payroll record

e. Invoice

1040. Help a medical student to select an adrenergic drug for the treatment of anaphylactic shock:

a. Clonidine

b. Fenoterolum

c. Isadrinum

d. Epinephrine hydrochloride

e. Galazolin

1041. A 5-year-old child had accidentally drunk a bottle of eye drops. After 30 minutes the child developed shortness of breath, difficult swallowing, voice hoarseness, dilated pupils, hyperthermia. Which of the drugs might have induced the described manifestations?

a. Novocaine

b. Atropine

c. Mesatonum

d. Adrenaline

e. Pilocarpine

1042. A patient purchased peppermint leaves at a pharmacy. What recommendations on infusing this herbal raw material must be given by the pharmacist?

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

1043. It is required to prepare 50 g of zinc ointment for a patient. What amount of zinc and vaseline must be weighed out by a pharmacist?

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

1044. Sterilization methods applied for the preparation of drugs under aseptic conditions can be differentiated into physical, mechanical, and chemical ones. Specify the chemical method of sterilization:

- a. Radiation sterilization
- b. Dry heat sterilization
- c. Addition of preservatives**
- d. Pressure steam sterilization
- e. UV light sterilization

1045. A patient had been given an injection of 0,25% novocaine solution for the purpose of anaesthetization. Suddenly the patient developed red 7 spots, intense sweating, tachycardia, bronchospasm, edema of nasal mucosa. What is the cause of this complication?

- a. Local irritation
- b. Delayed allergy
- c. Immediate allergy**
- d. Tachyphylaxis
- e. Withdrawal syndrome

1046. What is the mechanism of action of diclofenac sodium?

- a. It activates adenylate cyclase
- b. It inhibits phosphodiesterase
- c. It activates the synthesis of phosphodiesterase
- d. It inhibits cholinesterase
- e. It blocks cyclooxygenase**

1047. In order to identify deoxycorticosterone acetate a pharmaceutical analyst performed a steroid cycle reaction which produced cherry-red color and green fluorescence. What reagent was added?

- a. Potassium hydroxide solution
- b. Concentrated sulfuric acid**
- c. Iron (III) chloride solution
- d. Iodine solution
- e. Chloroform

1048. When investigating the case of drug intoxication, the expert commission should find out, whether intoxication had been caused by opium or omnopon. For this purpose it is required to conduct an additional test for:

- a. Morphine
- b. Thebaine
- c. Codeine
- d. Meconic acid and meconin**
- e. Papaverine

1049. Within an accounting period a pharmacy has been providing the population with the finished medications. What business transaction will have an effect on increasing inventory of the pharmacy?

a. Arrivals from the pharmaceutical warehouse

- b. Write-off of goods
- c. Salary accounting
- d. Write-off of low-value inventory
- e. Markdown according to the prepacking journal

1050. Which of the following nonsteroid anti-inflammatory agents has the least harmful effect on the mucosa of the gastrointestinal tract?

- a. Piroxicam
- b. Acetylsalicylic acid
- c. Diclofenac
- d. Indomethacin

e. Nimesulide

1051. A manufacturing enterprise plans to retail a new drug through the corporate network of pharmacies. What strategy of drug distribution will be used?

- a. Horizontal integration
- b. Vertical integration
- c. Multi-echelon
- d. Flexible

e. Direct

1052. When preparing an ointment with castor oil and vaseline a pharmacist failed to obtain a homogeneous system. What is the most likely cause of incompatibility between these components?

a. Immiscibility of the ingredients

- b. Release of water of crystallization
- c. Adsorption
- d. Coagulation
- e. Limited solubility

1053. In order to identify the toxic substance which was extracted from the acidic aqueous extract by an organic solvent, a toxicologist performed a murexide test which resulted in development of pink coloration. This indicates presence of the following substance in the sample:

- a. Morphine
- b. Cocaine
- c. Atropine

d. Barbamyl

e. Strychnine

1054. Woolly foxglove is used as raw material for the production of the following drug:

- a. Digitoxin
- b. Corglycon

c. Lantosidum

- d. Adonizid
- e. Erysimosidum

1055. A 60-year-old female patient has a history of essential hypertension (stage II), ischemic heart disease, bronchial asthma. After the correction of pharmacotherapy, a patient experienced an attack of bronchospasm, and an escalation of dyspnea. What drug had caused the complication?

- a. Aminophylline
- b. Nifedipine

c. Propranolol

- d. Mucaltinum
- e. Salbutamol

1056. A pharmaceutical analyst with a 6-year length of service is on a sick leave due to temporary

disability. He is entitled to the sickness allowance in the amount of:

- a. 70% of average wage
- b. 30% of average wage
- c. 50% of average wage
- d. 100% of average wage
- e. 80% of average wage**

1057. Sage leaves procured for the production of essential oil should be dried at a temperature of:

- a. 25-30°C**
- b. 100°C
- c. 70-80°C
- d. 60-70°C
- e. 50-60°C

1058. Which of the following antibiotics can be identified by means of the maltol formation test?

- a. Lincomycin hydrochloride
- b. Kanamycin monosulfate
- c. Doxycycline hydrochloride
- d. Amoxicillin
- e. Streptomycin sulfate**

1059. What is the main mechanism of action that underlies the bactericidal effect of penicillin on the coccal flora?

- a. Phagocytic activity of leukocytes
- b. Disruption of synthesis of the microbial cell wall**
- c. Damage to the cytoplasmic membrane permeability
- d. Inhibition of protein synthesis
- e. Activation of the immune system of the macroorganism

1060. What is the drug of choice for the treatment of acute pyelonephritis in a pregnant woman in the I trimester?

- a. Gentamicin
- b. Chloramphenicol
- c. Norfloxacin
- d. Biseptolum
- e. Amoxicillin**

1061. What is the most suitable drug that can be recommended for the treatment of rhinitis accompanying an ARVI in a 7-month-old child?

- a. Naphthyzin
- b. Pinosol
- c. Boromentol ointment
- d. 0,9% warm water solution of NaCl**
- e. Galazolin

1062. What drug may cause the development of constipation in patients undergoing combined therapy for arterial hypertension?

- a. Pananginum
- b. Acetylsalicylic acid in small doses
- c. Furosemide
- d. Trimetazidine
- e. Verapamil**

1063. In a pharmaceutical company both American and Japanese management styles are used. Select a characteristic feature of the Japanese management style:

- a. Fast evaluation and career advancement
- b. Individual decision-making process
- c. Collective responsibility**

- d. Clearly formalized management structure
- e. Short-term employment

1064. 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. Personal sales
- b. Informational
- c. Aggressive**
- d. Sales promotion
- e. Public relations

1065. A person got poisoned with alcohols. What alcohol derivatives are used for the analysis by the method of gas-liquid chromatography?

- a. Alkyl sulfites
- b. Alkyl nitrates
- c. Alkyl nitrites**
- d. Alkyl sulfates
- e. Alkyl acetates

1066. A pharmaceutical analyst identifies the substance of potassium acetate. What reagent confirms the presence of potassium cation in the analyte?

- a. Sodium hydroxide
- b. Iron (III) chloride
- c. Zinc oxide
- d. Tartaric acid**
- e. Potassium permanganate

1067. A pharmaceutical analyst tests potassium bromide for magnesium and alkaline earth metals impurity. What solution is used for this purpose?

- a. Sodium edetate**
- b. Hydrochloric acid
- c. Sodium nitrite
- d. Silver nitrate
- e. Potassium permanganate

1068. A patient with a history of essential hypertension has been administered lisinopril. What is the mechanism of action of this drug?

- a. It inhibits beta-adrenergic receptors
- b. It inhibits alpha-adrenergic receptors
- c. It inhibits ACE**
- d. It stimulates beta-adrenergic receptors
- e. It inhibits M-cholinergic receptors

1069. A male patient has been administered an antiulcerant that blocks histamine receptors of the gastric mucosa. What drug is it?

- a. Almagelum
- b. Omeprazole
- c. Famotidine**
- d. Atropine sulfate
- e. Pirenzepine

1070. Stimulation of beta-cells of the pancreas causes the hypoglycemic effect of the following drug:

- a. Prednisolone
- b. Retabolilum
- c. Heparin
- d. Glibenclamide**
- e. Adrenaline hydrochloride

1071. A pharmacist prepared an ointment by the following formulation: Rp.: Tannini 0,2 Lanolini

3,0 Vaseline 10,0 M. ut f. ung. D.S. To anoint the affected skin areas. What method of tannin incorporation was used?

- a. Trituration with an alcohol in a mortar, blending with the base
- b. Dissolution in liquid petrolate
- c. Trituration with liquid petrolate in a mortar by Deryagin rule
- d. Dissolution in molten vaseline
- e. Water dissolution, emulsification with anhydrous lanolin**

1072. Business transactions are displayed in the accounts. The entry in the account ledger that is made to record the incoming of economic resources is called: 10

- a. Debit**
- b. Credit
- c. Liabilities
- d. Assets
- e. Equity

1073. Within the matrix of Boston Consulting Group, a certain drug refers to a group of products called "milking cash cows" . Specify the stage of the lifecycle of this drug:

- a. Withdrawal
- b. Maturity**
- c. Decline
- d. Introduction
- e. Growth

1074. An analytical laboratory has been commissioned to prove the presence of ethylenediamine in aminophylline. Which of the following reagents makes it possible to detect ethylenediamine?

- a. Barium chloride
- b. Copper (II) sulfate**
- c. Concentrated sulfuric acid
- d. Sodium hydroxide
- e. Silver nitrate

1075. A patient has glaucoma. Recommend him a drug of the M-cholinomimetic group:

- a. Sulfacyl sodium
- b. Ephedrine hydrochloride
- c. Pylocarpine hydrochloride**
- d. Atropine sulfate
- e. Laevomycetin

1076. Advise an internship doctor on why iron preparations should not be administered together with antacids:

- a. This accelerates elimination of iron preparations
- b. This causes malabsorption of iron**
- c. This prevents deposition of iron in the body
- d. This causes increased binding to blood proteins
- e. This increases intoxication with iron preparations

1077. A female patient with pneumonia has been administered doxycycline hydrochloride. This drug relates to the following group of antibiotics:

- a. Macrolides
- b. Aminoglycosides
- c. Tetracyclines**
- d. Cephalosporins
- e. Penicillins

1078. A pharmacy received the goods according to the accompanying documentation. Who is responsible for keeping the record of medicines received by a business entity?

- a. Trustee**



- b. Chief accountant
- c. Pharmacist of the pharmacy
- d. Materially responsible person

**e. Authorized representative**

1079. Under the SPH of Ukraine, one of the reactions for the detection of calciumcation presence in drugs is the reaction with:

- a. Hydroxyquinoline
- b. Alizarin
- c. Sulfuric acid

**d. Glyoxal-hydroxyanil**

e. Hydroxylamine

1080. A patient with cholelithiasis should be administered the following drug for the dissolution of cholesterol gallstones:

- a. Citric acid
- b. Mefenamic acid
- c. Gamma-aminobutyric acid
- d. Acetylsalicylic acid

**e. Ursodeoxycholic acid**

1081. A patient with acute heart failure and cardiac glycoside intolerance was given an injection of dobutamine. What is the mechanism of its action?

- a. Stimulation of  $\beta_1$ -adrenoceptors
- b. Inhibition of phosphodiesterase
- c. Stimulation of M-cholinergic receptors

**d. Stimulation of  $\beta_1$ -adrenoceptors**

e. Block of  $K^{+-}$ ,  $Na^{+-}$ -ATPase

1082. Which of the methods to fill ampoules with injectable solutions 11 makes it possible to protect capillaries from contamination with thick and viscous solutions?

a. Squeezing-through

**b. Syringe**

c. Turbo vacuum

d. Vacuum

e. Vapor condensation

1083. When setting up a joint-stock company the founders discussed the issues of financial liability. What is the liability of the board members in a joint-stock company?

**a. Limited to the value of their shares**

b. Limited to the contributions to the statutory fund and their property

c. Unlimited and solidary

d. Limited to the amount of deposits

e. Limited to the double amount of deposits

1084. In order to verify the purity of the essential oil, some ethanol was added into the test tube with peppermint oil. The mixture became turbid. This means that the peppermint oil contains the following impurity:

- a. Phenol
- b. Ethyl acetate
- c. Diethyl ether

**d. Fatty oil**

e. Acetone

1085. 5% solution of methylcellulose is used as a stabilizer for preparing a suspension of the following drug substance:

a. Zinc oxide

**b. Terpene hydrate**

- c. Starch
- d. Magnesium oxide
- e. Bismuth nitrate basic

1086. An analytical chemist of the quality control department of a pharmaceutical plant can prove the presence of the cation in the test substance with a solution of potassium:

- a. Ferrocyanide (III)
- b. Chloride
- c. Pyroantimonate**
- d. Hydroxide
- e. Nitrate

1087. Magnesium peroxide identification is performed by the reaction of perchromic acid formation. What color is produced as a result of this reaction?

- a. Blue**
- b. Green
- c. Yellow
- d. Black
- e. Red

1088. A forensic medicine laboratory received some biological material. It was to be tested for the presence of trichlorfon and dichlorvos. For their isolation a toxicologist infuses them with:

- a. Ethanol acidified with oxalic acid
- b. Water acidified with sulfuric acid
- c. Water alkalized with ammonia solution
- d. Propanol acidified with oxalic acid

**e. Chloroform**

1089. Pharmacies prepare injectable solutions. Which solution is prepared without any stabilizer?

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

1090. Ammifurinum contains furocumarines. These biologically active substances are derived from:

- a. Fruits of large ammi**
- b. Fruits of common parsnip
- c. Rhizomes and roots of angelica
- d. Fruits of toothpick ammi
- e. Fruits of psoralea

1091. Quality of ampouled injection solutions is tested as to various parameters. How many ampullae are to be checked for assessing the quality 12 of sealing (hermeticity)?

- a. 100%**
- b. 80%
- c. 50%
- d. 75%
- e. 97%

1092. A pharmacy compounds suspensions. What substance can be used for preparing a suspension without adding the stabilizer?

- a. Sulfur
- b. Camphor
- c. Magnesium oxide**
- d. Menthol
- e. Phenyl salicylate

1093. All employees are entitled to annual leave. What is the duration of the additional leave for

pharmacy employees with non-standard working hours?

- a. Twenty calendar days
- b. Thirty calendar days
- c. The additional leave is not granted
- d. Ten calendar days

**e. Seven calendar days**

1094. One of the packagings stored at the warehouse of finished products has a damaged label. It is known that the drug substance in this packaging relates to alkaloids. In course of group qualitative tests for alkaloids the drug substance reacted positively with murexide. Further identification of the drug substance should be limited to the following group of derivatives:

**a. Purine**

- b. Tropane
- c. Indole
- d. Isoquinoline
- e. Quinoline

1095. Industrial, labor and socioeconomic relations between the head of a pharmaceutical company and the employees are regulated by:

a. Statute

**b. Collective agreement**

- c. Corporate code
- d. Employment agreement
- e. Contract

1096. A pharmacy received the following formulation: Rp.: Dibazoli 0,05 Papaverini hydrochloridi 0,15 Sacchari 2,5 M. fiat pulv. Divide in partes aequales №10. Specify the weight of a single powder dose:

a. 0,30

**b. 0,27**

- c. 0,25
- d. 2,7
- e. 0,26

1097. Xenobiotics are metabolized in the body. The main metabolite of the acetic acid is:

- a. Formic acid
- b. Valeric acid
- c. Methyl alcohol
- d. Isopentyl alcohol

**e. Acetaldehyde**

1098. Under the SPhU, the pharmacopeial preparation "Aether anaestheticus" is not allowed to have peroxide impurity. What reagent should be used to detect peroxides?

- a. Solution of starch and potassium bromide
- b. Solution of starch and potassium tetraiodomercurate

**c. Solution of starch and potassium iodide**

- d. Grade reagent
- e. Lugol's reagent

1099. Arrangement of drugs in the retail space of a pharmacy can be characterized as either strong or weak. What arrangement of drugs is regarded as weak?

a. Zones with a good frontal look

**b. On the lower shelves**

- c. The shelves on the right side as the buyers pass along
- d. At the intersection of the ranks of shelves
- e. Cashier desk zone

1100. When calculating the personal income tax, the tax social privilege is taken into account. Its rate depends on a certain statutory amount. Specify this amount:

a. Cost of living for children aged 6 to 18 years

**b. Minimum statutory wage**

c. Cost of living for incapacitated persons

d. Cost of living for one person

e. Maximum payroll fund

1101. Fatty oils containing unsaturated fatty acids are used for the prophylaxis of atherosclerosis. Specify the starting materials of herbal origin that contain fatty oil:

a. Parsnip fruits

b. Psoralea fruits

c. Ispaghula seed

d. Chestnut seed

**e. Pumpkin seed**

1102. The phytochemical workshop of a pharmaceutical plant produces biogenic stimulators from different starting materials. Specify the biogenic stimulators of animal origin:

a. Peloidinum, humisolum, torfotum, Fibs Rro injectionibus

b. Liquid aloe extract, aloe liniment, aloe juice, biossedum

**c. Vitreous body, placental suspension for injections, plasmolum, solcoseryl**

d. Liquid aloe extract, aloe liniment, plasmolum

e. Peloidinum, humisolum, torfotum, plasmolum, solcoseryl

1103. A pharmacy network received a batch of raw material without analysis protocol. It was identified as marshmallow root by the external characteristics. The reaction with 5% alkali liquor was positive. This indicates the presence of:

a. Pectins

b. Cellulose

c. Gums

d. Starch

**e. Slimes**

1104. A pharmaceutical analyst tests anhydrous glucose for purity according to the requirements of the SPbU. Inadmissible barium impurity can be detected by using the following acid:

a. Hydrochloric

b. Nitric

c. Perchloric

**d. Sulphuric**

e. Acetic

1105. The chemical name 1-benzoyl-5-ethyl-5-phenyl-barbituric acid stands for the following substance relating to barbiturates:

a. Barbital

b. Hexenal

c. Benzobamil

**d. Benzonal**

e. Phenobarbital

1106. What herbal drug produced from alkaloid-containing raw materials can be recommended for neurasthenia, insomnia, menopausal disorders?

a. Glauine hydrochloride

b. Ergotamine

**c. Novopassit**

d. Securinine nitrate

e. Vinblastine

1107. A pharmacist prepares 3000 mL of valerian root infusion for a hospital department. The given amount of extract should be infused in a water bath for:

a. 10 minutes

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

1108. A pharmacist has prepared a solution of menthol oil. Specify the dissolution temperature of the active substance:

- a. 20-30°C
- b. 40-50°C**
- c. 30-40°C
- d. 60-70°C
- e. 70-80°C

1109. Forensic toxicological analysis of a mineralizate revealed copper. For the initial detection of copper ions the following substance is used:

- a. Diphenylcarbazine
- b. Diphenylamine
- c. Sodium diethyldithiocarbamate
- d. Dithizone
- e. Plumbum diethyldithiocarbamate**

1110. A patient has been found to have pesticide intoxication. Biochemical (cholinesterase) test was positive. What pesticide is likely to have caused the intoxication?

- a. Hexachlorocyclohexane
- b. DDT
- c. Dichlorvos**
- d. Heptachlor
- e. Ethyl mercury chloride

1111. As a result of condensation of substituted malonic esters and urea the derivatives of the following substance are obtained:

- a. Pyrazole
- b. Pyridazine
- c. Pyrimidine**
- d. Pyridine
- e. Pyrazine

1112. Which of the following ophthalmic dosage forms is produced only industrially?

- a. Eye rinses
- b. Ophthalmic inserts**
- c. Eye drops
- d. Ophthalmic ointments
- e. Eye washes

1113. What medication should be used as an antidote to eliminate the respiratory depression caused by an overdose of a narcotic analgesic?

- a. Naloxone**
- b. Aethimizolum
- c. Ammonia
- d. Camphor
- e. Cordiamine

1114. Fenofibrate relates to the following pharmacological group:

- a. Antihypertensives
- b. Indirect anticoagulants
- c. Fibrinolysis inhibitors
- d. Hypnotics
- e. Hypolipidemics**

1115. Which of the following vaginal dosage forms relate to the officinal formula, that is, are prepared in a pharmacy?

- a. Vaginal tablets for preparing solutions and suspensions
- b. Pessaries**
- c. Vaginal capsules
- d. Vaginal tablets
- e. Vaginal foams

1116. The glidants aerosil or magnesium stearate together with talc are added to the excipients in hard gelatin capsules in order to facilitate the following property:

- a. Homogeneous mixing
- b. Compactibility
- c. Homogeneity
- d. Moisture regulation
- e. Powder flowability**

1117. A student has been prescribed a tonic. This may be the tincture of the following medicinal plant:

- a. Black locust
- b. *Rhodiola rosea***
- c. Java tea (*orthosiphon aristatus*)
- d. Common yarrow
- e. Purple foxglove

1118. A 25-year-old female patient had been taking antibiotics for 7 days, the disease was complicated by the development of intestinal dysbiosis. This complication should be treated by the drugs of the following group:

- a. Adaptogens
- b. Probiotics**
- c. Cholagogues
- d. Antispasmodics
- e. Antacids

1119. Which group of adjuvants includes polyvinyl alcohol used under the SPhU?

- a. Isotonizing agents
- b. Prolongators**
- c. pH adjusters
- d. Preservatives
- e. Antioxidants

1120. Which of the following drugs should be used for prevention of bronchial asthma attacks?

- a. Drotaverine
- b. Salbutamol
- c. Cromolyn sodium**
- d. Diphenhydramine hydrochloride
- e. Ambroxol

1121. A pharmacist has to prepare a medication by the following formulation: Rp.: Natrii hydrocarbonatis 2,0 Natrii benzoatis 1,5 Liquoris Ammonii anisatis 4 ml Aquae Mentae 100ml M.D.S. 1 tablespoon 3 times a day. Specify the component that is added in the first place:

- a. Mint water**
- b. Liquoris Ammonii anisatis
- c. Sodium benzoate
- d. Sodium hydrogen carbonate
- e. Sugar syrup

1122. A pharmacist prepares an ointment under aseptic conditions on the sterile ointment base, namely the composition of vaseline and lanoline at a ratio 6:4. The drug substance is incorporated by

suspension type. Such technique of ointment preparation is typical for the following substance:

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

1123. Under the chemico-toxicological classification, toxic compounds are grouped according to the method of their isolation from the biological material. What compound can be isolated by steam distillation?

- a. Analgene
- b. Diazepam
- c. Atropine
- d. Arsenicum
- e. Chloral hydrate

1124. Toxic medicines are isolated from biological material at a certain pH level of the medium. What substance is extracted from acidic aqueous extracts?

- a. Atropine
- b. Chlorpromazine
- c. Caffeine
- d. Morphine
- e. Cocaine

1125. What drug is indicated in case of taking an overdose of depolarizing muscle relaxants?

- a. Unithiol
- b. Neostigmine methylsulfate
- c. Naloxone
- d. Metoprolol
- e. Magnesium sulfate

1126. A 20-year-old female patient has been administered bicillin for rheumatic fever prophylaxis. Specify the frequency of bicillin-5 administration:

- a. Once per month
- b. Once a day
- c. Once per week
- d. Once in 3 days
- e. Once every 3 weeks

1127. A 65-year-old male patient complains of nausea, vomiting, lethargy, seeing yellow spots in front of his eyes. The patient takes daily 0,25 mg of digoxin, 100 mg of aspecardum, 50 mg of metoprolol. What pathological condition is this syndrome typical for?

- a. Tachyphylaxis
- b. Hypersensitivity reaction
- c. Food poisoning
- d. Withdrawal syndrome
- e. Glycoside intoxication

1128. Vincamine alkaloid reduces blood pressure, has a pronounced sedation effect, as well as hemostatic and anti-inflammatory effect. What herb is the source of this alkaloid?

- a. Thick-fruited pagoda tree
- b. Northern wolfsbane
- c. Yellow water-lily
- d. Common periwinkle
- e. Bluish larkspur

1129. The galenical preparations workshop produces belladonna tincture. Specify the required ratio for this dosage form:

a. 1:10

b. 1:20

c. 1:1

d. 1:2

e. 1:5

1130. Pharmaceutical plants produce ointments on various bases. Specify the ointment base having the most pronounced osmotic properties:

a. Polyethylene oxide

b. Vaseline, lanolin

c. Hydrogenated fat

d. Methyl cellulose

e. Silicon

1131. A patient with acute heart failure has been administered an adrenomimetic agent. What drug is it?

a. Dobutamine

b. Corglycon

c. Salbutamol

d. Metoprolol

e. Digoxin

1132. Oil liniments are produced with fatty oils used as a base. What kind of oil should be used by a pharmacist if it was not specified in the formulation?

a. Petrolatum

b. Sesame oil

c. Eucalyptus oil

d. Sunflower oil

e. Cod-liver oil

1133. A pharmacy received a formula 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. 96%

b. 40%

c. 90%

d. 70%

e. 60%

1134. Production unit for ampouled medicinal preparations produces procaine hydrochloride solution. This solution is stabilized by adding:

a. 0,1 mol/l of sodium hydroxide solution

b. 20,0 of sodium hydrogen carbonate

c. 1,5 g of amino-propylene glycol

d. 0,1 mol/l of hydrochloric acid solution

e. 0,1 mol/l of sodium hydrogen carbonate solution

1135. Recommend a drug for the treatment of tachyarrhythmia episodes:

a. Adrenaline

b. Caffeine sodium benzoate

c. Dobutamine

d. Propranolol

e. Atropine

1136. A 35-year-old female customer came to a pharmacy to purchase a medicine for the prevention of influenza. Which of the following drugs can be recommended?

a. Rimantadine

b. Ribavirin



- c. Lamivudine
- d. Ganciclovir
- e. Acyclovir

1137. Employees of a company can be instructed to go on a business trip by the orders of the company's head. Specify the deadline for submission of an expense report after the employee's return from the trip:

- a. 5 days
- b. 4 days
- c. 3 days**
- d. 6 days
- e. 2 days

1138. A pharmaceutical analyst analyzes a dosage form containing zinc sulfate. What reagent enables him to confirm the presence of the zinc cation in the analyte?

- a. Potassium ferrocyanide
- b. Ammonium chloride
- c. Sodium sulfide**
- d. Silver nitrate
- e. Sodium tetraphenylborate

1139. Lily of the valley is widely regarded as a cardiac stimulant and sedative. During the raw material procurement, the following plant may occur in the harvested crop:

- a. Treacle-mustard (*Erysimum cheiranthoides*)
- b. Spring adonis
- c. Round-leaved pyrola**
- d. *Viola tricolor*
- e. *Viola arvensis*

1140. A pharmacist prepares an infusion at a ratio of 1:30. What herbal raw material will be used?

- a. Marshmallow root
- b. Oak bark
- c. Shoots of Marsh Labrador tea
- d. Lily of the valley grass**
- e. Sage leaves

1141. A pharmacist has prepared vaginal suppositories. Specify the form of these suppositories:

- a. Sticks
- b. Marbles**
- c. Cylinder
- d. Torpedo
- e. Cone

1142. Under the SPbU (appendix 2), leaves of ginkgo are standardized by the content of:

- a. Coumarins
- b. Chromones
- c. Saponins
- d. Alkaloids
- e. Flavonoids**

1143. A clinical pharmacist invited to a medical conference made a report on the antiviral drug acyclovir. What is its mechanism of action?

- a. It antagonizes with PABA
- b. It inhibits the synthesis of proteins
- c. It blocks the synthesis of the cell wall
- d. It increases the permeability of the cell membrane
- e. It inhibits the synthesis of nucleic acids**

1144. What kind of marketing is provided in case of negative demand for goods and services, that is,

in a situation when the demand is absent in a substantial part of the potential market?

- a. Conversion
- b. Remarketing
- c. Demarketing
- d. Synchro marketing
- e. Stimulating

1145. Prescriptions for the controlled drugs dispensed under the reimbursement program (except for the narcotic and psychotropic preparations in substance) are issued on the following prescription form:

- a. №3, single copy
- b. №1 in duplicate
- c. №1 and №3
- d. №1, single copy
- e. №3 in duplicate

1146. In case of the planned closure of a pharmacy for repair works, technical re-equipment or other works, a business entity is obliged to give a written notice to the Territorial State Inspectorate for Quality Control of Medicines in advance, but not later than:

- a. 12 days in advance
- b. 5 days in advance
- c. 7 days in advance
- d. 10 days in advance
- e. 3 days in advance

1147. Pharmacy №7 is engaged in both sales and production. What operations are not registered in the journal of laboratory and prepacking works?

- a. Extemporaneous compounding of dosage forms
- b. Preparation of concentrated solutions
- c. Packaging of finished products in certain amounts
- d. Preparation of commercially available medications
- e. Preparation of semi-finished products

1148. Specify a drug having an analeptic and psychostimulant effect:

- a. Diazepam
- b. Neostigmine methylsulfate
- c. Caffeine sodium benzoate
- d. Corglycon
- e. Diclofenac sodium

1149. What medicines are used to eliminate bronchospasm?

- a. beta-blockers
- b. Cholinesterase inhibitors
- c. M-cholinomimetics
- d. beta-adrenergic agonists
- e. alpha-adrenergic agonists

1150. Alkaloid glaucine has an antitussive effect that is stronger and longer if compared to that of codeine, and exhibits no narcotic side effects. What medicinal plant contains glaucine?

- a. Henbane bell (*Scopolia carniolica*)
- b. Yellow hornpoppy
- c. *Thermopsis lanceolata*
- d. Celandine
- e. *Datura*

1151. Drug plant *Dioscorea nipponica* is the starting materials for the production of Polysponinum drug which is used in the complex treatment of atherosclerosis. Specify the active compounds of *dioscorea*:

**a. Steroid saponins**

- b. Essential oil
- c. Triterpene saponins
- d. Cardiac glycosides
- e. Alkaloids

1152. A hypertensive patient had been administered a diuretic as a part of the combined therapy. The administered drug caused hypokalemia. Specify this drug:

- a. Allopurinol
- b. Triamterene
- c. Amiloride
- d. Spironolactone

**e. Hydrochlorothiazide**

1153. A pharmaceutical factory produces herbal juice from fresh raw material. What operation should be performed at the stage of juice purification?

- a. Adsorption
- b. Sedimentation

**c. Heating followed by rapid cooling**

- d. Filtration
- e. Crystallization

1154. Cash receipts and payments at a pharmacy are recorded in the cashbook. Which of the following cash transactions IS NOT REGARDED as a receipt transaction?

**a. Issuing funds to be accounted for**

- b. Recognizing cash receipts from sales at pharmacy outlets and kiosks
- c. Recognizing accrued salaries and advance payable
- d. Return of unused disbursement funds
- e. Recognizing cash receipts from sales at a pharmacy

1155. What system includes a set of legal rules that regulate the amounts, forms, methods and time limits for collecting taxes and tax-like charges that enable the state to perform its 19 functions?

- a. Remuneration of labor

**b. Tax**

- c. Statistic
- d. Accounting
- e. Reporting

1156. Phytochemical workshop of a factory manufactures pancreatin. What is the starting material for obtaining pancreatin?

- a. Heart of cattle
- b. Egg white
- c. Gastric mucosa of pigs
- d. Lungs of cattle

**e. Pancreas of pigs or cattle**

1157. In case of simultaneous use of metronidazole and oral anticoagulants derived from coumarin patients must be warned about:

- a. Reduction of metronidazole effect
- b. Higher neurotoxicity
- c. Reduction of anticoagulants effect
- d. Potentiation of metronidazole effect

**e. Potentiation of anticoagulants effect and the risk of bleeding**

1158. Specify the principle of the pharmacy accounting which complies with the following definition: "This principle provides for continuous following the adopted accounting policy. Any changes to the accounting policy must be well-grounded and fixed in the financial statements" :

- a. Periodicity

- b. Full disclosure
- c. Going concern

**d. Consistency**

- e. Expenses against revenues matching

1159. At a maternity hospital a pregnant woman with weak uterine contractions has been administered oxytocin. This drug relates to the following pharmaceutical group:

- a. Thyroid hormone preparations
- b. Mineral corticoids
- c. Glucocorticoids

**d. Pituitary hormone preparations**

- e. Anabolic steroids

1160. What factor underlies the mechanism of the analgesic effect of morphine hydrochloride?

- a. Inhibition of cholinesterase
- b. Stimulation of opiate receptors**
- c. Inhibition of phosphodiesterase
- d. Inhibition of histamine receptors
- e. Stimulation of adenylate cyclase

1161. Analytical and control laboratory determines quality of fatty oils by using certain chemical indices. Specify the chemical index that is demonstrative of the fatty oil drying:

- a. Acid number
- b. Ester number
- c. Peroxide number

**d. Iodine absorption number**

- e. Saponification number

1162. The head of a pharmaceutical company "Azalea" applies different types of control. The control which starts with logging in to the system of organization before commencement of work and is exercised through rules, procedures, etc. refers to:

- a. Final control
- b. Current control
- c. Preliminary control**
- d. Decentralized control
- e. Centralized control

1163. A 30-year-old male patient diagnosed with acute osteomyelitis has been administered an antibiotic that is highly effective in penetrating the bone tissue. What drug has been chosen?

- a. Penicillin
- b. Bicillin 3
- c. Lincomycin**
- d. Polymyxin-M
- e. Ampicillin

1164. A pharmacist dispensed doxycycline to a patient and recommended to abandon dairy products. What is the reason for such recommendation?

- a. Increase in the antibiotic toxicity
- b. Disruption of digestion process
- c. Dairy products are not digested
- d. Deceleration of the antibiotic absorption**
- e. Increased risk of dysbiosis

1165. Commercial and financial activity of a pharmacy involves using returnable tare. Which of the following containers are returned to the supplier?

- a. Metal cylinders**
- b. Paper boxes
- c. Glassware

- d. Glass-stoppered bottles
- e. Packaging materials

1166. A pharmacy has a set of documents which confirm the ownership of computer programs. Specify the balance sheet item that shows the pharmacy's property:

- a. Intangible assets**
- b. Low-value equipment
- c. Stock
- d. Monetary assets
- e. Goods

1167. In order to expand its range of activities, pharmacy №12 purchased some manufacturing equipment. What group of economic resources does the manufacturing equipment relate to?

- a. Tara
- b. Goods
- c. Fixed assets**
- d. Tangible assets
- e. Incomplete capital investments

1168. A pharmaceutical analyst added solutions of zirconyl nitrate and alizarin to a drug substance. The reaction produced red color turning into yellow. Specify the analyte:

- a. Sodium iodide
- b. Sodium thiosulfate
- c. Sodium chloride
- d. Sodium bromide
- e. Sodium fluoride**

1169. A pharmaceutical company studies the market situation in terms of a relationship between supply and demand, price level, stock of goods, etc. What is the company's actual object of study?

- a. Market infrastructure
- b. Market behaviour**
- c. Market scope
- d. Conditions for the market existence
- e. Market structure

1170. During a medical briefing a pharmacy intern was asked about the mechanism of antiatherosclerotic effect of clofibrate (fenofibrate). What is the correct answer?

- a. It has an antioxidant effect
- b. It inhibits the release of free fatty acids from adipose tissue
- c. It inhibits the cholesterol absorption
- d. It binds bile acids in the small intestine
- e. It lowers triglycerides**

1171. What style of behavior in conflict situations involves partial satisfaction of the interests of both parties by mutual concessions with due consideration of all pros and cons?

- a. Competition
- b. Evasion
- c. Cooperation
- d. Dominance
- e. Compromise**

1172. A pharmacy received a formulation for an extemporaneously compounded dosage form. The formula includes phenobarbital compounded with other drugs. Specify the required prescription form:  
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- a. Form №2 in duplicate
- b. Form № 1
- c. Form № 1 in duplicate**
- d. Form № 3

e. Form № 2

1173. A pharmacy has purchased a refrigerator and computer. These fixed assets are placed on the pharmacy's balance sheet at the following value:

- a. Residual
- b. Amortized
- c. Historic**
- d. Market
- e. Liquidating

1174. Galenic preparations are produced with the use of various extractants. What extractants require pressure as a prior condition for the extraction process?

- a. Liquefied gases**
- b. Methyl alcohol, acetone
- c. Dichloroethane, chloroform
- d. Vegetable oils
- e. Ethanol

1175. In the production of dry extracts the drying of purified extracts may not involve condensation of the the liquid extractions. What equipment should be used in this case?

- a. Thermostat
- b. Rotary one-flow drier
- c. Shelf drier
- d. Vacuum oven
- e. Spray drier**

1176. Buckthorn bark is used as a laxative. Specify the period for procurement of raw material of alder buckthorn bark:

- a. Winter
- b. The period of full ripeness
- c. Spring, during the circulation of sap**
- d. Frondescence
- e. Autumn

1177. A pharmacy received a prescription for phenobarbital tablets written out by a physician of the city clinic to an epileptic patient. Prescriptions for this drug must be written out on the following prescription form:

- a. Form № 2
- b. Form №3 and № 1 in a single copy**
- c. Form № 3 in duplicate
- d. Form №1 in duplicate
- e. Form№ 1 in a single copy

1178. A pharmaceutical analyst has to test the substance of iron sulfate heptahydrate for purity. What reagent should be used to detect zinc cation in the substance?

- a. Sodium tetraphenylborate
- b. Potassium ferrocyanide**
- c. Barium chloride
- d. Silver nitrate
- e. Ammonium oxalate

1179. A pharmaceutical analyst performs the identification of phthalylsulphathiazole (phthalazol). In compliance with the SPhU requirements, the substance is to be heated with resorcinol in the presence of sulfuric acid. The subsequent addition of sodium hydroxide and water results in:

- a. Intensive green fluorescence**
- b. Red-violet color
- c. Intensive blue color
- d. Extensive yellow precipitate

e. Abundant white precipitate

1180. Under the SPhU, presence of ammonium salts in sodium tetraborate can be detected by method A by using a solution of the following substance:

- a. Silver nitrate
- b. Alkaline potassium tetraiodomercurate**
- c. Barium chloride
- d. Sodium tetraphenylborate
- e. Potassium ferrocyanide

1181. A pharmaceutical analyst performs the identification test of lidocaine hydrochloride under the SPhU. The identity is determined by the melting point of precipitate which is produced as a result of reaction with a solution of the following acid:

- a. Citric
- b. Phosphoric
- c. Acetic
- d. Thioglycolic
- e. Picric**

1182. A pharmacist with 10 years of service length is on a sick leave due to temporary disability. What allowance is he entitled to?

- a. 60% of the average wage
- b. 100% of the average wage**
- c. 40% of the average wage
- d. 80% of the average wage
- e. 70% of the average wage

1183. Pharmacy cashier is responsible for recording all credit and debit transactions. To enter into the books the cash received, a cashier should issue:

- a. Cash payment voucher
- b. Goods delivery note
- c. Receipt note
- d. Cash receipt voucher**
- e. Goods receipt note

1184. Organizational form of business in which a company does not produce goods or services itself but owns other companies' controlling stake and thereby supervises their activity is called:

- a. Holding**
- b. Syndicate
- c. Trust
- d. Cartel
- e. Conglomerate

1185. The head of a wholesale pharmaceutical company applies modern theories in order to effectively motivate sales staff and determine the amount of remuneration. Specify one of the groups of motivation theories:

- a. Primary
- b. Structural
- c. Process**
- d. Secondary
- e. System

1186. Which of these drugs kept in the pharmacy stock relates to the group of laxatives?

- a. Atropine
- b. Morphine
- c. Heparin
- d. Vicasol
- e. Bisacodyl**

1187. A pharmacy received a batch of chemotherapeutic agents. Select an antiviral drug:

- a. Benzylpenicillin sodium salt
- b. Isoniazid
- c. Doxycycline
- d. Acyclovir**
- e. Rifampicin

1188. A 40-year-old patient has a history of bronchial asthma and heart rhythm disorders in form of bradyarrhythmia. Bronchospasm can be eliminated by the drugs of the following pharmacological group:

- a. Cholinesterase inhibitors
- b. Muscle relaxants
- c.  $\beta$ -blockers
- d. M-cholinomimetics
- e. M-cholinergic antagonists**

1189. 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. 1,5 g
- c. 0,015 g
- d. 0,03 g
- e. 0,15 g

1190. A pharmacy prepared a solution of macromolecular substance with limited swelling capacity. What solution was labelled "warm up before use"?

- a. Pepsin
- b. Trypsin
- c. Gelatin**
- d. Methyl cellulose
- e. Pancreatin

1191. A dispensing chemist can recommend a drug made from seeds of Aesculus hippocastanum to be taken as a veinotonic and antithrombotic agent to treat venous congestion and veins dilatation of lower extremities. This drug is:

- a. Flamin
- b. Phytolysin
- c. Aescusan**
- d. Marelin
- e. Ajmaline

1192. Specify the normal spoilage ratio for toxic drugs, which should be taken into account by an inventory committee during stock-taking.

- a. 1,9%
- b. 0,95%**
- c. 7,6%
- d. 3,0%
- e. No norm defined

1193. 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 3 days
- b. In a week
- c. In a month**
- d. In 10 days
- e. In 5 days

1194. Specify which of the alkaloids given below will react positively to xanthines (murexide test):



- a. Quinine sulfate
- b. Ephedrine hydrochloride
- c. Atropine sulfate
- d. Papaverine hydrochloride
- e. Caffeine**

1195. Point out the type of labour division structure of management personnel:

- a. Upper
- b. Horizontal**
- c. Technical
- d. Institutional
- e. Administrative

1196. Losartan is contraindicated for treatment of arterial hypertension in case of:

- a. Hyperglycemia
- b. Hyperlipidemia
- c. Hypokalemia
- d. Pregnancy**
- e. Urine acid diathesis

1197. Which of the drugs listed below is used for thrombolytic therapy of myocardial infarction?

- a. Heparinum
- b. Ticlopidine
- c. Acetylsalicylic acid
- d. Streptokinase**
- e. Phenylinum

1198. An organisation has been founded to carry out several interconnected purposes. What type of organisation is it?

- a. Complex**
- b. Legal
- c. Small
- d. Budget
- e. Private

1199. 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. Managed groups
- b. Staff
- c. Informal groups**
- d. Formal groups
- e. Role groups

1200. 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. Codeine
- b. Morphine
- c. Hyoscyamine**
- d. Reserpine
- e. Caffeine

1201. 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. Rutin
- c. Digitoxin
- d. Reserpine

e. Beta-carotene

1202. 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. Papaverine

**b. Scopolamine**

c. Morphine

d. Codeine

e. Platyphyllin

1203. Coumarins are natural compounds with their structure based on an benzo-alpha-pyrone skeleton. What reaction allows to detect this group of compounds?

a. Cyanide test

b. Wilson's reaction

c. Trim-Hill reagent

**d. Lactone test**

e. Iron (III) chloride reaction

1204. 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 Helichrysi arenarii

b. Flores Millefolii

c. Flores Arnicae

d. Flores Calendulae

**e. Flores Chamomillae**

1205. 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. Oxidation of resins

b. Oxidation of terpenoids

c. Oxidation of phenolic compounds

d. Volatilization of essential oils

**e. Enzymatic hydrolysis of cardiac glycosides**

1206. 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. Ginseng roots

b. Calendula flowers

**c. Hawthorn berries**

d. Aralia roots

e. Berberis roots

1207. 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 et radix Sanquisorbae officinalis

c. Radix Taraxaci officinalis

d. Herba Achilleae millefolii

e. Rizoma Calami

1208. Specify the pricing strategy of international market, which foresees establishing relatively low prices to work up the developed countries market.

a. Price leveling strategy

**b. Penetration strategy**

c. Differential pricing strategy

d. Premium pricing strategy

e. Price skimming strategy

1209. Point out the type of group poll that foresees a single survey of several experts to discuss a certain problem.

a. Focus group

b. Delphi

c. Interview

d. Panel

e. Omnibus

1210. Name the stage of drug life cycle that is characterized by maximal sales and profit, and reminder advertising.

a. Decline

b. Growth

c. Maturity and saturation

d. Introduction

e. Market exit

1211. 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. Aronia melanocarpa

b. Ammi majus

c. Hippophae rhamnoides

d. Vaccinium myrtillus

e. Coriandrum sativum

1212. Cumulating drugs - Digitoxin and Cordigitum - are used to treat chronic cardiac insufficiency. What plant is used as a raw material to produce them?

a. Erysimum canescens

b. Digitalis purpurea

c. Adonis vernalis

d. Strophanthus kombe

e. Convallaria majalis

1213. Business trip can be assigned to employees only with their consent, if these employees are:

a. Women with children less than 1 year old

b. Women with children from 1 to 3 years of age

c. Women with children from 3 to 14 years of age

d. Any employee

e. Women with two children

1214. 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. Isoxazole cycle

c. Thiadiazole cycle

d. Furan cycle

e. Thiazolidine cycle

1215. 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. Disintegrator, liquid whistle

c. Centrifugal mixer with rotating housing

d. Rotor-pulsation apparatus, dismembrator

e. Dismembrator, electrical impulse plasmolyzer

1216. A pharmaceutical factory workshop producing ointments can use the following equipment at the packing stage:

- a. Disc machines
- b. Screw and piston dosing machines**
- c. Rotary machines
- d. Rezipin automatic machine
- e. Eccentric machines

1217. What preparation is the specific antidote in case of intoxication with iron preparations?

- a. Atropinum
- b. Penicillamine
- c. Protamine sulfate
- d. Bemegridum
- e. Deferoxamium**

1218. 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. Trade union committee
- b. MoH of Ukraine
- c. Commercial court
- d. Labour disputes commission (LDC)**
- e. Highest management bodies of pharmaceutical service at the regional level

1219. A pharmacist has prepared solution of ethacrydine lactate. Name the peculiarity of this substance dissolution.

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

1220. A pharmacy received a prescription for an extemporaneous compounded drug. Specify the document that is used to set the price for such drug:

- a. Cash receipt voucher
- b. Certificate of analysis
- c. Inventory report
- d. Certificate of quality
- e. Retail price list for drugs**

1221. Medications Passit and Novopassit are used as tranquilizing, sedative and mild soporific agents. These medications are produced from the following grass:

- a. Garden sage
- b. Three-lobed beggarticks
- c. Purple passionflower**
- d. Elecampane
- e. Lesser periwinkle

1222. 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. During peak of sap movement
- c. Beginning of vegetation
- d. During fruiting
- e. In autumn after above-ground part of a plant dies-off

1223. 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 Urticae
- b. Folia Betulae
- c. Folia Menthae piperitae**
- d. Folia Agavae
- e. Folia Absinthii

1224. 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. Non-mass communication
- b. All answers are correct
- c. There is no correct answer
- d. Depersonalization (non-personal communication)**
- e. Two-way communication

1225. A pharmaceutical factory produces suspensions and emulsions. Specify the equipment that is used for dispersion and mixing in liquid medium:

- a. Gate mixers
- b. Rotor-pulsation apparatus, colloid mixers**
- c. Oscillating mixers
- d. Drum mixers
- e. Anchor mixers

1226. What reagent is used to detect calcium admixture in medicinal substances?

- a. Potassium carbonate
- b. Barium chloride
- c. Ammonium oxalate**
- d. Silver nitrate
- e. Sodium sulfate

1227. 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. 1:1
- b. 8:2
- c. 7:3
- d. 9:1**
- e. 5:1

1228. 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. 1:10
- b. 1:100
- c. 1:400
- d. 1:20**
- e. 1:30

1229. 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. 41
- b. 17**
- c. 38
- d. 36
- e. 40

1230. 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. Dealer

b. Discounts for quantity of purchased goods

c. -

**d. Bonus**

e. Seasonal

1231. 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 drying

b. Ampoule sterilization

c. Capillary opening

d. Ampoule washing

**e. Ampoule annealing**

1232. 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. Sodium benzoate

**b. Novocaine**

c. Potassium chloride

d. Calcium chloride

e. Hexamethylenetetramine

1233. 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. Keto group

b. Aldehyde group

**c. Phenolic hydroxyl**

d. Ester group

e. Alcoholic hydroxyl

1234. Production of tablets requires stage-to-stage quality control. What devices are used to determine the particle size distribution (fraction) of granules?

a. Various vibrosieves

b. Laboratory identifiers

c. Microscope

**d. Standard set of sieves**

e. Friabilators

1235. 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. Formaldehyde

b. Benzaldehyde

c. Resorcin

d. Pyridine

**e. Hydroxyquinoline**

1236. 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. Flavonoids and essential oils

b. Coumarins and phenol glycosides

c. Iridoids and vitamins

**d. Anthracene derivatives and tannins**

e. Essential and fatty oils

1237. 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. Systemic

c. Different schools dedication approach

- d. Situational
- e. Process approach

1238. 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 + double daily rate
- b. There would be no extra pay
- c. Single piecework rate
- d. Fixed salary + one daily rate**
- e. According to the standard procedure as for a normal working day

1239. 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 3 months from the date of issue
- b. No longer than 1 year from the date of issue
- c. No longer than 5 calendar days from the date of issue
- d. No longer than 10 calendar days from the date of issue**
- e. No longer than 1 calendar days from the date of issue

1240. Which of the pharmacy departments is responsible for checking the quantity and quality of received goods, their storage and dispensing to other departments?

- a. Compounding and production department
- b. Department of over-the-counter drugs
- c. Department of curative cosmetics
- d. Inventory department**
- e. Department of finished dosage forms

1241. Chloride of lime is identified by calcium cations after boiling with acetic acid in order to eliminate active chlorine. What reagent is used?

- a. Magnesium sulfate
- b. Sodium nitrite
- c. Ammonium molybdate
- d. Ammonium oxalate**
- e. Potassium chloride

1242. A set of values, traditions, behavioral norms and views inherent to an organisation characterize its following feature:

- a. Success
- b. Sapitalization level
- c. Self-development capability
- d. Culture**
- e. Profitability

1243. Products differentiation (advantages) pursued by a pharmaceutical company with the aim to surpass its competitors in satisfying customers's demands is called:

- a. Penetration strategy
- b. Concentration strategy
- c. Benchmarking
- d. Porter's generic strategies model
- e. Product leadership**

1244. 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 at room temperature
- c. The extract is to be artificially cooled 15 minutes after infusing
- d. The extract is to be immediately filtered after infusing
- e. The infusion is to be prepared on open fire

1245. 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. Sunflower oil
- c. Ethyl alcohol 40%
- d. Glycerol
- e. Purified water

1246. 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. Omeprazole
- b. Acidin pepsinum
- c. Drotaverine
- d. De-Nol
- e. Pancreatinum

1247. 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. Remarketing
- c. Stimulating
- d. Synchromarketing
- e. Conversion

1248. An ampoule workshop produces injection solutions. What filters are used for sterile filtering of injection solutions?

- a. Filter designed at the Kharkiv Chemico-Pharmaceutical Research Institute
- b. Pressure leaf filter
- c. Druck (pressure) filter
- d. Nutsche (vacuum) filter
- e. Membrane and depth filters

1249. Injection solutions of weak acids and strong bases must be stabilized. What stabilizers are used for such solutions?

- a. Sodium edetate (Disodium EDTA, Trilon B)
- b. 0,1 M hydrochloric acid solution
- c. 0,1 M sodium hydroxide solution
- d. Ascorbic acid
- e. Butyloxytoluene

1250. A pharmacy makes infusion solutions. Specify the solution that restores water-salt metabolism.

- a. Hydrolisine
- b. Dextran
- c. Polyglucinum
- d. Neohaemodesum
- e. Ringer-Locke's solution

1251. 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. Redox substances
- b. Chlorides
- c. Moisture
- d. Pyrogenic substances
- e. Sulfates

1252. Yellow gentian contains bitter glycosides. Raw material of this plant is recommended for production of drugs with the following effect:

- a. Hepatoprotective



- b. Venotonic
- c. Tonic
- d. Diuretic

**e. Stimulates appetite**

1253. A pharmacy received a prescription for tincture. What raw herbal material can be used to make this dosage form?

**a. Valerian rootstock**

- b. Oak bark
- c. Buckthorn bark
- d. Arrow-wood bark
- e. Rhubarb roots

1254. A retail pharmacy has been purchasing goods within an accounting period. What changes to the balance will result from these business transactions?

- a. Changes will be caused to the assets only
- b. Decrease in assets and liabilities

**c. Increase in assets and liabilities**

- d. Changes will be caused to the liabilities only
- e. -

1255. Which of the following nonsteroid anti-inflammatory agents has the least harmful effect on mucosa of gastrointestinal tract?

a. Acetylsalicylic acid

**b. Nimesulide**

- c. Indomethacin
- d. Diclofenac
- e. Piroxicam

1256. 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. 1 year prior to calculation
- c. 7 days prior to calculation
- d. 10 days prior to calculation
- e. Six months prior to calculation

1257. 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. Gassing
- c. Change in odour
- d. Change in colour
- e. Precipitation

1258. 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. Iron (III) chloride
- c. Potassium sulfate
- d. Acetic acid
- e. Phenolphthalein

1259. 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. Hydrophilic ointment
- c. Extraction ointment
- d. Combined ointment
- e. Solution ointment

1260. 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. System homogeneity, dispersion velocity
- b. Reduction range, container quantity
- c. Exit port diameter, propellant vapour pressure**
- d. Percentage of phase, filling temperature
- e. Fractional composition, containers filling method

1261. A pharmacist makes powders with papaverine hydrochloride. What hand scales should be used for weighing out 0,05 g of substance?

- a. BP 20,0 (balance beam scale, capacity 20,0)
- b. BP 5,0 (balance beam scale, capacity 5,0)
- c. BP 1,0 (balance beam scale, capacity 1,0)**
- d. BP 10,0 (balance beam scale, capacity 10,0)
- e. BP 2,0 (balance beam scale, capacity 2,0)

1262. 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. Plantago psyllium seeds
- c. Peanut seeds
- d. Strophanthus seeds
- e. Pumpkin seeds

1263. Activated carbon is used in production of injection solutions for:

- a. Buffer system creation
- b. Chemical resistance of ampoule's glass increasing
- c. Ampoules residual stress relaxation
- d. Purification**
- e. Antioxidant properties increasing

1264. 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. Valerian rootstock
- b. Walnut leaves
- c. Celandine grass**
- d. Buckthorn bark
- e. Blueberries

1265. Which of the listed antibacterial drugs should NOT be administered to a patient with diabetes mellitus type II being treated with glibenclamid?

- a. Midecamycin
- b. Benzylpenicillinum
- c. Doxycycline
- d. Co-trimoxazolum**
- e. Gentamycinum

1266. Plantagluglide 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 media
- b. Plantago psyllium

c. *Plantago major*

d. *Plantago stepposa*

e. *Plantago lanceolata*

1267. 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. Informational

b. Sales promotion

c. Public relations

d. Aggressive

e. Personal sales

1268. Which of the penicillins given below can be identified by reaction with ninhydrin?

a. Benzylpenicillin (penicillin G)

b. Oxacillin

c. Carbenicillin

d. Ampicillin

e. Phenoxymethylpenicillin (penicillin V)

1269. 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 taste

b. No specific odor

c. Specific odor

d. Specific color of raw materials

e. Stems remains

1270. An analytical chemist determines the admixture of sulphates in boric acid. What is the main reagent to be added?

a. Silver nitrate

b. Ammonium oxalate

c. Sodium sulphide

d. Potassium ferrocyanide

e. Barium chloride

1271. 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 segment requiring further research

b. A market door

c. An unattractive segment

d. A market share

e. A market niche

1272. Calcium cations present in drugs can be detected with the following solution:

a. Sodium nitrite

b. Sodium chloride

c. Silver nitrate

d. Potassium permanganate

e. Ammonium oxalate

1273. What stage is the last in making injection solutions?

a. Quantitative control

b. Labeling

c. Filtering

d. Sterilization

e. Qualitative control

1274. 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. Sulpho group
- b. Secondary aromatic amino group
- c. Primary aromatic amino group**
- d. Carboxyl group
- e. Aldehyde group

1275. 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. Blue
- b. Purple
- c. White
- d. Red**
- e. Black

1276. Specify the indicator which measures total contribution of various solutes to osmotic pressure of a solution:

- a. Isohydricity
- b. Isoviscosity
- c. Apyrogenicity
- d. Osmolality**
- e. Isotonicity

1277. 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 double amount of deposits
- b. Limited to the amount of deposits
- c. Unlimited and solidary
- d. Limited to the value of their shares**
- e. Limited to the contributions to the statutory fund and their property

1278. A pharmacy opens a bank account to store funds and conduct ongoing business transactions. What kind of account should be opened?

- a. Provisional
- b. Letter of credit
- c. Investment
- d. Current**
- e. Deposit

1279. Specify the reaction to identify ester-type drugs, which is required by the regulations of the State Pharmacopoeia of Ukraine:

- a. Formation of indophenol
- b. Formation of azo dye
- c. Formation of iron hydroxamates**
- d. Formation of 3-bromophenol
- e. Formation of taylorhin

1280. Streptocide, sulfacyl sodium, norsulfazole or sulfadimezinum can be identified by the reaction forming the following substance:

- a. Murexide
- b. Fluorescein
- c. Iodoform
- d. Azo dye**
- e. Tayleohin

1281. 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. Commission agent
- b. Consignee
- c. Wholesale agent**
- d. Broker
- e. Dealer

1282. 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. Integration
- b. Centralization
- c. Segmentation
- d. Conglomeration
- e. Diversification**

1283. To identify a drug an analytical chemist of the State Inspectorate for Quality Control performs a lignin test. Specify this drug:

- a. Ascorbic acid
- b. Methionine
- c. Analgin
- d. Streptocid**
- e. Cortisone acetate

1284. The main active components of hawthorn berries are flavonoids. What is their pharmacological effect?

- a. Hypotensive and sedative**
- b. Tonic and antispasmodic
- c. Antispasmodic and antiinflammatory
- d. Diuretic and styptic
- e. Laxative and sedative

1285. 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. Iodometry
- b. Acidimetry in aqueous medium
- c. Acidimetry in non-aqueous medium**
- d. Nitritometry
- e. Bromatometry

1286. 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. 75%
- b. 95%
- c. 25%
- d. 20%
- e. 5%**

1287. What is the function of anhydrous lanolin in the suppository mass used for suppositories made by hand rolling?

- a. Preservative
- b. Solvent
- c. Plasticizer**
- d. Solubilizer
- e. Emollient

1288. The basic structure of steroid hormones is hydrocarbon skeleton - cyclopentane

perhydrophenanthrene. What natural compound is used for testosterone propionate production?

- a. Cholesterol
- b. Naphthalene
- c. Anthracene
- d. Phenanthrene
- e. Indole

1289. 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. 2,0-3,0
- b. Over 4,0
- c. 0,5-1,0
- d. 1,0-2,0
- e. 0,1—0,3

1290. 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. Natriuretic peptide
- b. Bradykinin
- c. Renin
- d. Angiotensin I
- e. Aldosterone

1291. Preparations containing cardiosteroids are produced out of the following raw herbal material:

- a. Folia Sennae
- b. Herba Convallariae
- c. Radix Taraxaci
- d. Cortex Quercus
- e. Folia Ficus Caricae

1292. A pharmacist has prepared a solution of menthol oil. Specify the dissolution temperature of the active substance:

- a. 70-80°C
- b. 20-30°C
- c. 60-70°C
- d. 30-40°C
- e. 40-50°C

1293. 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. Financial loss
- b. Business risk
- c. Labour loss
- d. Loss of property
- e. Loss of time

1294. Admixtures can be accidentally included in raw herbal material in the process of harvesting, drying and primary processing. Mineral admixtures include:

- a. Other similar plants
- b. Metal objects
- c. Sand, earth, stones
- d. Droppings of birds and rodents
- e. Other organs of the same plant

1295. A pharmaceutical enterprise produces neogalenic preparations. What preparation is produced

by the Soxhlet circulation apparatus?

- a. Lantosidum
- b. Celanidum
- c. Digoxin
- d. Corglyconum
- e. Adonisidum**

1296. The common method for quantitative determination of drugs from the group of alkali metal halogenides is:

- a. Alkalimetry
- b. Nitritometry
- c. Permanganatometry
- d. Chelatometry
- e. Argentometry**

1297. 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. Nonverbal barriers
- c. Stereotype mentation
- d. Failure to understand the importance of information
- e. Neglect of facts

1298. A pharmacist should make 200 ml of 3% sodium bicarbonate solution for injections. What are the specifics of making this solution?

- a. Use water free of redox substances
- b. Vial should be filled to 2/3 of its volume; sterilization at 120 °C for 12 minutes**
- c. Dissolve by heating; sterilization at 120 °C for 12 minutes
- d. No sterilization
- e. Use stabilizing agent

1299. What technology should be chosen by a pharmacist to make a liquid dosage form, if it contains calcium gluconate?

- a. First grind it to powder when it is dry or with small amount of solvent added
- b. Add equal amount of sodium chloride
- c. Dissolve in alkaline medium
- d. Dissolve it in hot solvent or heat it up to full dissolution**
- e. Dissolve in water free of redox substances

1300. Concentrated solutions CANNOT be used in mixture making if:

- a. Mixture contains syrups
- b. Mixture contains tinctures
- c. Purified water is solvent
- d. Mixture contains a potent agent
- e. Aromatic water is solvent**

1301. Tyndallization is used at a pharmaceutical factory as one of sterilization methods for thermolabile substances. What is the essence of this method?

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

1302. 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. Checklist
- c. Invoice
- d. Commercial report
- e. Inventory item description

1303. Select the reductant required for determination of arsenic impurity in drugs (method 2):

- a. Sodium sulfite solution
- b. Hydrochloric acid solution
- c. Sodium hypophosphite**
- d. Sodium hydroxide solution
- e. Potassium iodide solution

1304. Choose the substance that is a tropane-derived alkaloid:

- a. Platyphyllin
- b. Cocaine**
- c. Strychnine
- d. Caffeine
- e. Pilocarpine

1305. 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. Platyphyllini hydrotartras
- b. Glucose**
- c. Papaverine hydrochloride
- d. Atropine sulfate
- e. Scopolamine hydrobromide

1306. 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. Water for injections
- b. Purified water
- c. Ethyl alcohol**
- d. Dimethyl sulfoxide
- e. Isopropyl alcohol

1307. 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. 1,0
- b. 10,0
- c. 20,0**
- d. 5,0
- e. 4,0

1308. Which of the liquids given below should be measured by volume in making liquid dosage forms?

- a. Diethyl ether
- b. Vaseline oil
- c. 20% solution of sodium bromide**
- d. Eucalyptus oil
- e. Glycerine

1309. A pharmacy received prescriptions for compound powders containing colouring agent. Which of powder components given below is a colouring agent?

- a. Bismuth nitrate
- b. Silver proteinate (Protargol)
- c. Camphor
- d. Sulfanilamide



**e. Ethacridine lactate (Rivanol)**

1310. 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. Branched, simple and ciliated hairs
- b. Simple and capitate hairs

**c. T-shaped hairs along the leaf edge**

- d. Retort-shaped hairs
- e. Branched and capitate hairs

1311. 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. *Viola tricolor*

**b. *Centaurea cyanus***

- c. *Polygonum persicaria*
- d. *Solidago virgaurea*
- e. *Scutellaria baicalensis*

1312. Quantitative content of theophylline can be determined by alkalimetric titration of nitric acid that is quantitatively exuded as the result of the following theophylline salt production:

- a. Sodium
- b. Potassium

**c. Silver**

- d. Ammonium
- e. Lithium

1313. Complexometric titration (chelation) allows to determine quantitative content of:

- a. Potassium chloride

**b. Calcium lactate**

- c. Potassium iodide
- d. Sodium citrate
- e. Sodium thiosulfate

1314. 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. Ranitidine

**b. Bismuth subcitrate**

- c. Actovegin
- d. Omeprazole
- e. Metronidazole

1315. A patient suffering from bronchial asthma was diagnosed with essential hypertension. What antihypertensive drug is contraindicated for this patient?

- a. Amlodipine
- b. Captopril

**c. Propranolol**

- d. Hydrochlorothiazide
- e. Verapamil

1316. 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. Bisepol
- c. Vancomycin
- d. Rifampicin
- e. Tetracycline

1317. 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. Aspirin
- c. Mefenamic acid
- d. Indometacin
- e. Diclofenac

1318. 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 poorly absorbed from the injection site

**b. Is slowly eliminated from the body**

- c. Is pluripotential
- d. Has bactericidal effect
- e. Accumulates in the lungs

1319. 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. Acidimetry

b. Complexonometry

**c. Iodometry**

- d. Alkalimetry
- e. Nitritometry

1320. 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. 70%

b. 90%

**c. 60%**

- d. 96%
- e. 40%

1321. Ampoule workshop of a pharmaceutical factory produces procaine hydrochloride solution. This solution is stabilized by adding:

a. 1,5 g of amino-propylene glycol

**b. 0,1 mol/l of hydrochloric acid solution**

- c. 0,1 mol/l of sodium hydrogen carbonate solution
- d. 0,1 mol/l of sodium hydroxide solution
- e. 20,0 of sodium hydrogen carbonate

1322. What stage of drug life cycle is characterized by quick increase of its sales amount and customers' recognition?

**a. Growth**

- b. Maturity
- c. Saturation
- d. Decline
- e. Introduction

1323. 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 and №3
- c. №3, single copy
- d. №3 in duplicate
- e. №1, single copy

1324. Log books of stock-taking records are kept in a pharmacy for:

a. 3 years

- b. 2 years
- c. 7 years
- d. 5 years
- e. 10 years**

1325. What principle of goods and expenses accounting requires presenting results of business transactions within the same reporting period when the transaction occurs?

- a. Periodicity
- b. Matching
- c. Accrual**
- d. Autonomy
- e. Continuity

1326. 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. Bromatometry
- b. Cerimetry
- c. Polarimetry
- d. Argentometry**
- e. Iodometry

1327. Who is responsible for reception of goods and medical products with simultaneous incoming quality control?

- a. Pharmacist
- b. Supplier pharmacist
- c. Authorized representative**
- d. Head of pharmacy
- e. Analyst

1328. A pharmaceutical factory produces herbal juice out of fresh raw herbal material. What operation should be performed at the stage of juice purification?

- a. Crystallization
- b. Heating followed by quick cooling**
- c. Adsorption
- d. Sedimentation
- e. Filtration

1329. Cash transactions at a pharmacy are recorded in the cashbook. Which of the following cash transactions IS NOT a receipt transaction?

- a. Return of unused disbursement funds
- b. Recognizing accrued salaries and advance payable
- c. Recognizing cash receipts from sales at a pharmacy
- d. Recognizing cash receipts from sales at pharmacy outlets and kiosks
- e. Issuing cash to be accounted for**

1330. Which of the following diuretics SHOULD NOT be administered to patients with impaired hearing?

- a. Spironolactone
- b. Indapamide
- c. Chlorthalidone
- d. Furosemide**
- e. Clopamide

1331. 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. Decreased absorption in gastrointestinal tract
- c. Changed volume of distribution

- d. Disorder of protein binding
- e. Increased absorption in gastrointestinal tract

1332. Simultaneous use of paracetamol and acetylcysteine causes:

- a. Increase of paracetamol nephrotoxicity
- b. Reduction of paracetamol hepatotoxicity**
- c. Inhibition of paracetamol absorption
- d. Reduction of anti-inflammatory action of paracetamol
- e. Increase of mucolytic action of acetylcysteine

1333. Simultaneous use of gentamicin and acyclovir tablets increases the risk of:

- a. Neurotoxicity
- b. Allergic reactions
- c. Hepatotoxicity
- d. Cardiotoxicity
- e. Nephrotoxicity**

1334. Simultaneous use of doxycycline hydrochloride and oral contraceptive causes:

- a. -
- b. Reduction of oral contraceptives effectiveness**
- c. Increase of antibacterial effect of doxycycline
- d. Increase of oral contraceptives effectiveness
- e. Reduction of antibacterial effect of doxycycline

1335. In case of simultaneous use of metronidazole and oral anticoagulants derived from coumarin patients must be warned about:

- a. Reduction of metronidazole effect
- b. Higher neurotoxicity
- c. Reduction of anticoagulants effect
- d. Potentiation of metronidazole effect
- e. Potentiation of anticoagulants effect and risk of bleeding**

1336. 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. Reclassifying other supplies as goods
- b. Revaluation for packing and laboratory work
- c. Posting glassware
- d. Disposal of products for business needs**
- e. Posting oversupply

1337. Phenobarbital drug has a sedative, soporific and anti-epileptic effect. What is its international nonproprietary name?

- a. Luminal**
- b. Chloramphenicol
- c. Salol
- d. Diazepam
- e. Nitrofurazone

1338. 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. Amlodipine
- b. Trimetazidine
- c. Metoprolol
- d. Nitroglycerin**
- e. Nifedipine

1339. Commercial and financial activity of a pharmacy involves using returnable packaging. Which of the following containers are returned to a supplier?

- a. Packaging materials
- b. Glass-stoppered bottles
- c. Glassware
- d. Metal cylinders**
- e. Paper boxes

1340. To make a liquid №2 by Demyanovych prescription hydrochloric acid should be taken in the following concentration:

- a. 24,8 – 25,2%**
- b. 98%
- c. 10%
- d. 30%
- e. 0,83%

1341. Menthol has anesthetic and antiseptic effect. What plant is the source of menthol?

- a. Folia Menthae piperitae**
- b. Folia Eucalypti
- c. Folia Absinthii
- d. Folia Salviae
- e. Folia Uvae ursi

1342. 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. Promethazine hydrochloride
- b. Clonidine hydrochloride
- c. Diphenhydramine hydrochloride
- d. Chlorpromazine hydrochloride**
- e. Trifluoperazine hydrochloride

1343. A pharmacy performs both cash and non-cash transactions. Financial intermediary in the latter is a:

- a. City administration department for pharmacy management
- b. Regional control-analytical laboratory
- c. Central regional pharmacy
- d. City administration
- e. Bank**

1344. The main method of quantitative determination of corticosteroids is:

- a. Spectrophotometry**
- b. Cerimetry
- c. Acidimetry
- d. Argentometry
- e. Potentiometry

1345. 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. Apigenin and luteolin
- b. Arbutin and methyl arbutin
- c. Atropine and hyoscyamine
- d. Quercetin and rutin
- e. Thymol and carvacrol**

1346. Specify the base for antibiotic ointments:

- a. 5 parts of vaseline + 1 part of lanolin
- b. 6 parts of vaseline + 4 part of lanolin**
- c. 5 parts of vaseline + 5 part of lanolin

d. 8 parts of vaseline + 2 part of lanolin

e. 7 parts of vaseline + 3 part of lanolin

1347. A pharmaceutical company plans to produce hexamethylenetetramine tablets. What production method is optimal for such tablets?

a. Direct compression without adjuvants

b. Forming

c. Direct compression with adjuvants

d. Compression preceded by wet granulation

e. Compression preceded by dry granulation

1348. Granulation is used to increase:

a. Volume density

b. Porosity

c. Breakup

d. Dissolution

e. Flowability

1349. A 46-year-old patient is diagnosed with cardiac infarction. What drug should be prescribed for thrombolytic therapy?

a. Drotaverine hydrochloride

b. Trimeperidine (Promedol)

c. Nitroglycerine

d. Spironolactone (Verospiron)

e. Streptokinase

1350. A patient suffering from thrombophlebitis of his lower extremities has developed symptoms of heparin overdosage. What drug can be used as an antidote?

a. Dipyridamol

b. Phenindione (Phenilin)

c. Protamine sulfate

d. Pentoxifylline

e. Theophylline

1351. 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. Atropine

c. Morphine

d. Adrenaline

e. Prednisolone

1352. 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. Enalapril

b. Panangin (Potassium aspartate and magnesium aspartate)

c. Acetylsalicylic acid

d. Thiotriazolinum

e. Trimetazidine

1353. A 32-year-old woman that had been undergoing antibiotic therapy for her pneumonia has developed intestine disbiosis. What drugs should she be prescribed?

a. Immune-response modulating agents

b. Antacids

c. Antispasmodics

d. Probiotics

e. Cholagogues

1354. A 53-year-old woman suffers from ischemic heart disease and angina pectoris. What drug can

be used to stop angina pectoris attacks?

- a. Dipyridamol
- b. Acetylsalicylic acid
- c. Drotaverine hydrochloride
- d. Propranolol

**e. Nitroglycerine**

1355. 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. Haemodes
- b. Prednisolone**
- c. Fresh frozen plasma
- d. Penicillin
- e. Rheopolyglukin (Dextran)

1356. A patient with osteoarthritis (gonarthrosis) and peptic gastric ulcer in anamnesis must be prescribed a NSAID (nonsteroidal antiinflammatory drug). What drug would be the most safe for this patient?

- a. Ibuprofen
- b. Acetylsalicylic acid
- c. Meloxicam**
- d. Indometacin
- e. Metamizole sodium

1357. A 20-year-old man suffers from chronic hyperacid type B gastritis. Choose the antisecretory agent.

- a. Clarithromycin
- b. Drotaverine hydrochlorid
- c. Omeprazole**
- d. Levofloxacin
- e. Metoclopramide

1358. In the course of clinical instrumental examination a 45-yearold patient was diagnosed with chronic helicobacter-associated type B gastritis. What group of drugs should be prescribed first of all?

- a. Anti-Muscarinic agents
- b. Anti-Helicobacter pylori agents**
- c. Antacids
- d. Prokinetic agents
- e. Reparative drugs

1359. What equipment is necessary to make trituration tablets?

- a. Dragee pan
- b. Rotary tableting machine
- c. Film coater
- d. Special tableting machine for forming tablets**
- e. Double sided tableting press machine

1360. 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. Per diem costs
- b. Merchandise return payments
- c. Sales proceeds
- d. Encashment
- e. Cash remaining in cash register at the beginning of workday**

1361. When servicing customers it is necessary to maintain cash desk discipline. A cashier should make records in the cash book:

- a. Quarterly
- b. Monthly
- c. Immediately after the cash transaction occurred**
- d. Weekly
- e. At the end of workday

1362. Appropriate labor hours per week are being set for pharmacy staff. How many hours compose a working week for administrative staff?

- a. 40**
- b. 35
- c. 63
- d. 45
- e. 30

1363. According to the law pharmacies have the right to paid leave. Total duration of main and additional leaves cannot exceed the following number of calendar days:

- a. 24
- b. 30
- c. 59**
- d. 45
- e. 63

1364. According to the regulations of the State Pharmacopoeia of Ukraine the following solution is used to detect potassium admixture in medicinal substances:

- a. Silver nitrate
- b. Tartaric acid
- c. Potassium Tetraiodomercurate Solution Alkaline
- d. Hydroxyquinoline
- e. Sodium tetraphenylborate**

1365. What method is used for quantitative determination of antituberculous drug isoniazid according to the regulations of the State Pharmacopoeia of Ukraine?

- a. Bromatometry, back titration
- b. Iodometry, direct titration
- c. Acidimetry, direct titration
- d. Bromatometry, direct titration**
- e. Iodometry, back titration

1366. Nitrofural 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. Paper partition
- b. Thin-layer**
- c. Anion-exchange
- d. Cation-exchange
- e. Gas-liquid

1367. 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. Sulfates
- b. Nitrates**
- c. Heavy metals
- d. Chlorides
- e. Ammonium salts

1368. To increase hydrophobic suspension stability a stabilizer is added. Name this stabilizer.

- a. Vaseline oil
- b. Polysorbate 80 (Tween 80)**
- c. Dimethyl sulfoxide



- d. Sodium chloride
- e. Glucose

1369. A pharmacy performs stocktaking to check its inventory holdings. What is the minimal interval between inventory checks of fixed assets?

- a. Twice a year
- b. Once a quarter
- c. Once a year**
- d. Once a month
- e. Once in 3 years

1370. A pharmacy performs regular stock-taking. What is the minimal interval between inventory checks of monetary funds and documents?

- a. Twice a year
- b. Once in 3 years
- c. Once a quarter**
- d. Once a month
- e. Once a year

1371. 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. Medicinal herbs
- c. Alcoholature
- d. Bandaging material
- e. Medical products

1372. Specify the norms of normal spoilage for medicinal leeches, which should be taken into account by a stock-taking committee.

- a. 7,6%**
- b. 0,85%
- c. 1,9%
- d. No norm defined
- e. 0,65%

1373. A new pharmaceutical enterprise is being founded. Which document of those given below is considered to be founding?

- a. Standard act
- b. Order
- c. Charter**
- d. Directive
- e. -

1374. A pharmaceutical firm uses a set of marketing concepts to manage its interactions with consumers. Point out one of such concepts.

- a. Management improvement
- b. Staff improvement
- c. Manufacture improvement**
- d. Creative marketing
- e. Interactive marketing

1375. What ratio is used in making hawthorn tincture?

- a. 1:2
- b. 1:20
- c. 1:1000
- d. 1:10**
- e. 1:5

1376. Name the way of injectabulettae application.

- a. Peroral
- b. Vaginal
- c. Sublingual

**d. For injection solutions of drugs**

- e. For implantations

**1377. What factors affect tablet disintegration?**

- a. High specific gravity of powders
- b. Poor flowability

**c. Amount and nature of disintegrating agents**

- d. Tablet powder contains lamellar crystals
- e. Heterogeneity of granulated material

**1378. Hexamethylenetetramine solution sterility is achieved by:**

**a. Filtering through bacterial filters**

- b. Gas diffusion sterilization
- c. Pressure steam sterilization
- d. Tyndallization method of sterilization
- e. Preserving agents

**1379. During qualitative chemical analysis of nicotinic acid substance the reaction was conducted, which resulted in blue colouring. What reagent was used?**

- a. Sodium hydroxide solution
- b. Thiocyanogen bromide reagent
- c. Nessler's reagent

**d. Copper (II) sulfate solution**

- e. Iron (III) chloride solution

**1380. What physical constant of a substance can be used to identify diphenhydramine hydrochloride according to the regulations of the State Pharmacopoeia of Ukraine?**

- a. Refractive index
- b. Specific rotation
- c. Boiling temperature
- d. Relative density

**e. Fusion temperature**

**1381. 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. Perchloric acid solution, crystal violet
- b. Sodium hydrochloride solution, phenolphthalein
- c. Potassium hydrochloride solution, methyl orange

**d. Sodium methylate solution, thymol blue**

- e. Sulfuric acid solution, naphtholbenzein

**1382. 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. Finance department
- b. Supply department**
- c. Shipping department
- d. Marketing department
- e. Stores development

**1383. Pharmaceutical market subjects that purchase drugs and medical products for further resale to make a profit, are called:**

**a. Dealers**

- b. Consumer organisations
- c. Individual consumers

- d. Government authorities
- e. Manufacturers

1384. 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. Creative marketing
- b. Synchromarketing
- c. Remarketing

**d. Demarketing**

- e. Promotional marketing

1385. 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. Market exit
- b. Creation and development

**c. Introduction**

- d. Maturity and saturation
- e. -

1386. Grass of yellow hornpoppy (*Glaucium flavum*) contains alkaloid glaucine. What pharmacological effect does this plant have because of this alkaloid?

- a. Expectorant
- b. Anti-inflammatory
- c. Antipyretic

**d. Antitussive**

- e. Analgetic

1387. A pharmacist prepares powders with a substance hard to comminute. What substance should be comminuted with a volatile liquid?

**a. Camphor**

- b. Zinc sulfate
- c. Glucose
- d. Copper sulfate
- e. Magnesium oxide

1388. 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. 0,015 g

**b. 0,3 g**

- c. 1,5 g
- d. 0,15 g
- e. 0,03 g

1389. A pharmacy has prepared a solution of macromolecular substance with limited swelling capacity. What solution was labelled "warm up before use"?

**a. Gelatin**

- b. Pepsin
- c. Pancreatin
- d. Methyl cellulose
- e. Trypsin

1390. A dispensing chemist can recommend a drug made from seeds of *Aesculus hippocastanum* to be taken as a veintonic and antithrombotic agent to treat venous congestion and veins dilatation of lower extremities. This drug is:

- a. Phytolysin
- b. Marelin
- c. Ajmaline

**d. Aescusan**

e. Flamin

1391. A pharmacy prepares drugs by individual prescriptions. How often should the floors be mopped down in the prescription department?

a. Once every 10 days

b. Once in a week

**c. Once in a shift**

d. Once every 5 days

e. Once every 3 days

1392. Schedule of sanitation actions in pharmacies is regulated by the relevant regulatory acts. Cleaning day at a pharmacy must be scheduled for at least 1 time:

a. In 3 days

b. In a week

**c. In a month**

d. In 10 days

e. In 5 days

1393. A pharmaceutical company focuses on selling a diverse range of products covering different customer groups and regions. What kind of organizational structure is typical for such company?

a. Bureaucratic

b. Centralized

c. Decentralized

**d. Divisional**

e. Functional

1394. A pharmaceutical company produces cordiamin solution. During the quality control its quantitative content was determined by means of refractometry. For this purpose an analytical chemist measured:

a. Density

b. Viscosity

**c. Index of refraction**

d. Intensity of absorption

e. Angle of rotation

1395. Specify which of the alkaloids given below will react positively to xanthenes (murexide test):

a. Papaverine hydrochloride

b. Atropine sulfate

**c. Caffeine**

d. Quinine sulfate

e. Ephedrine hydrochloride

1396. Which of the following drugs is used for thrombolytic therapy in case of myocardial infarction?

a. Phenylinum

b. Heparin

**c. Streptokinase**

d. Ticlopidine

e. Acetylsalicylic acid

1397. A patient, who had a case of cardiac infarction, is recommended to take acetylsalicylic acid to:

a. Dilate coronary vessels

b. Decrease body temperature

**c. Decrease thrombocyte aggregation**

d. Decrease inflammation

e. Lower cholesterol rate

1398. Stinging nettle (*Urtica dioica*) leaves are mostly used as a hemostatic in tinctures and liquid extracts to treat lung, intestinal, and uterine hemorrhages. What bioactive substance provides

hemostatic effect?

- a. Vitamin K
- b. Rutin
- c. Digitoxin
- d. Reserpine
- e.  $\beta$ -carotene

1399. What herbal bioactive substances yield a positive reaction with ferric ammonium alum solution?

- a. Fatty oils
- b. Tannins
- c. Polysaccharides
- d. Saponins
- e. Bitters

1400. Cumulating drugs - Digitoxin and Cordigitum - are used to treat chronic cardiac insufficiency. What plant is used as the raw material in production of these drugs?

- a. *Erysimum canescens*
- b. *Digitalis purpurea*
- c. *Adonis vernalis*
- d. *Strophanthus kombe*
- e. *Convallaria majalis*

1401. To prepare a syrup the following ingredients are taken: 82 parts of sugar syrup, 1 part of KJ (KBr), 12 parts of liquid thyme extract and 5 parts of 96% ethanol. Name this drug:

- a. Broncholytin
- b. Licorice syrup
- c. Cholosas
- d. Ambroxol
- e. Pertussin

1402. 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. Market penetration
- b. Decrease
- c. Development
- d. Maturity
- e. Growth

1403. A marketing specialist of a retail pharmacy analyzes price lists of wholesale firms and manufacturers. The key factor in the choice of a supplier is:

- a. Selection-price characteristics of production
- b. Post-sale service quality
- c. Market conditions
- d. Supply volume
- e. Production multifunctionality

1404. Suspension workshop introduces production of new drugs. Specify the optimal approach to suspension production:

- a. Drop method
- b. Percolation
- c. Maceration
- d. Grinding in a liquid medium
- e. Repercolation

1405. Aerosol workshop of a pharmaceutical plant uses propellants of different groups. What propellants belong to the group of compressed gases?

- a. Nitrogen, nitrous oxide, carbon dioxide
- b. Propane, butane, isobutane

- c. Methylene chloride, ethylene chloride
- d. Vinyl and methyl chloride
- e. Freons

1406. An analytical chemist confirms the presence of calcium ions in calcium lactate molecule by means of reaction with ammonium oxalate. The reaction occurs in the medium of:

- a. Acetic acid
- b. Sodium hydroxide
- c. Potassium chloride
- d. Formaldehyde
- e. Ammonia

1407. A pharmacist has used condensation method to prepare a suspension. Select the substances that make up the precipitate:

- a. Calcium chloride with sodium hydrocarbonate
- b. Sodium bromide with camphor
- c. Magnesium sulfate with potassium iodide
- d. Potassium bromide with sodium benzoate
- e. Caffeine and sodium benzoate with zinc oxide

1408. A pharmacy received a formula for an extemporaneously compounded medication. Specify the document that is used to set the price for such medication:

- a. Cash receipt voucher
- b. Certificate of analysis
- c. Inventory report
- d. Certificate of quality

e. Retail price list for drugs

1409. A pharmacist has made polyethylene oxide-based suppositories with Streptocid. Specify the approach to introducing the active ingredient into the vehicle:

- a. Dissolution in the molten vehicle
- b. Trituration with small amount of water
- c. Blending with vaseline oil
- d. Suspending in the vehicle
- e. Emulsification and blending with the vehicle

1410. Preparations from *Althaea officinalis* roots are used for treatment of upper airways conditions. During harvesting this herbal raw material the following can become an admixture:

- a. *Cichorium intybus*
- b. *Taraxacum officinale*
- c. *Plantago major*
- d. *Tanacetum vulgare*

e. *Lavatera thuringiaca*

1411. A Ukrainian pharmaceutical company established a subsidiary company abroad. What organisational form of international business is it?

- a. Licensing
- b. Direct export
- c. Direct possession
- d. Contractual production of drugs
- e. Joint venture

1412. What product strategy is characterized by introducing to the market a product designed for the largest market segments and maximal amount of customers?

- a. Undifferentiated marketing
- b. Concentrated marketing
- c. Variation
- d. Diversification

e. Differentiated marketing

1413. Which of the following antihypertensive drugs has potassium-sparing action?

- a. Metoprolol
- b. Diltiazem
- c. Furosemide
- d. Prazosin

**e. Triamterene**

1414. An essential oil is a component of such compound drugs as: Inhalypt, Corvalol, Pinosol, Corvaldin, tooth drops. What herbal raw material is the source of this essential oil?

a. Folia Absinthii

**b. Folia Menthae piperitae**

c. Folia Urticae

d. Folia Betulae

e. Folia Agavae

1415. A pharmacist has been on a business trip. What is the deadline for submitting a travel expense report?

**a. Three working days after returning from a trip**

b. Ten working days after returning from a trip

c. There is no deadline

d. A week after returning from a trip

e. Four working days after returning from a trip

1416. A pharmacy prepares atropine sulfate trituration. What adjuvant should be used to prepare this trituration?

a. Starch

b. Talcum

c. Saccharose

d. Glucose

**e. Lactose**

1417. To prepare a suspension a medicinal substance should be triturated with a small amount of liquid. Specify the optimal amount of liquid for trituration of 10 g of zinc oxide according to the Deryagin's rule:

**a. 5 ml**

b. 2 ml

c. 0,5 ml

d. 1 ml

e. 10 ml

1418. A pharmaceutical factory produces tablets of sodium chloride. What is the method of their production?

a. Moulding

b. Wet granulation prior to compression

c. Dry granulation prior to compression

**d. Direct compression without additional substances**

e. Direct compression with the addition of adjuvants

1419. Various types of dryers can be used for granule dehumidification. Specify the type of "СП-30" dryer:

a. Silica gel dryer

b. Forced air dryer

c. Freeze dryer

d. Infrared dryer

**e. Fluidized bed dryer**

1420. Ampoule workshop of a factory produces injection solution. Name the stabilizer to be added to

1% morphine hydrochloride injection solution:

- a. Amino-propylene-glycol
- b. 0,1 N solution of sodium chloride
- c. 0,1 N solution of hydrochloric acid**
- d. Rongalite
- e. Sodium metabisulfite

1421. An analyst of a chemical laboratory obtained a glucose substance for analysis. To check its quality he used a polarimeter. The analyst measured:

- a. Melting point
- b. Specific gravity
- c. Refractive index
- d. Optical density
- e. Angle of rotation**

1422. Rhamnus cathartica herbal raw material can be used as a laxative. What plant parts are harvested for drug production?

- a. Sprouts
- b. Fruit**
- c. Bark
- d. Leaves
- e. Roots

1423. Crude drugs CANNOT be tasted if they contain:

- a. Bitter glycosides
- b. Vitamins
- c. Essential oils
- d. Polysaccharides
- e. Toxins**

1424. 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. Thymol solution
- b. Lugol's solution**
- c. Concentrated sulfuric acid
- d. Ammonium hydroxide
- e. Alcohol solution of  $\alpha$ -naphthol

1425. Collective labour agreement is concluded by a trade union committee with the 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. 41
- b. 17**
- c. 38
- d. 36
- e. 40

1426. For the purpose of sales stimulation a pharmaceutical wholesale company grants its customers a discount according to the social contract and on condition of their loyalty. Specify the type of discount:

- a. Bonus**
- b. Seasonal
- c. -
- d. Discounts for quantity of purchased goods
- e. Dealer

1427. Before goods are accepted by a pharmacy, they should be checked for quantity and quality. If there is no discrepancy, the pharmacy issues a warrant for receipt of goods. This warrant is valid for:



- a. 1 year
- b. 3 months
- c. 10 days**
- d. 15 days
- e. 20 days

1428. 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. Viscous
- b. Hydrolytically unstable
- c. Photosensitive
- d. Easily oxidable**
- e. Thermostable

1429. 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. Potassium chromate
- c. Methyl red
- d. Methyl orange
- e. Phenolphthalein

1430. 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 Dimexid (Dimethylsulfoxide)
- b. Dissolve in vaseline oil
- c. Dissolve in alcohol
- d. Dissolve in minimal quantity of purified water**
- e. Dissolve in molten cocoa butter

1431. Suppositories are prepared by various methods such as rolling, pouring, pressing. What base is used in the pouring method?

- a. Paraffin
- b. Vaseline
- c. Coriander oil
- d. Butyrolum**
- e. Cocoa butter

1432. A pharmacist has made an injection solution with 0,1 M of sodium hydroxide solution as a stabilizer. What substance requires such stabilizer?

- a. Sodium hydrocarbonate
- b. Dibazol (Bendazol)
- c. Caffeine and sodium benzoate**
- d. Sodium chloride
- e. Glucose

1433. Anesthesin is a substance with local anesthetic activity and a derivative of the following acid:

- a. Para-aminosalicylic
- b. Para-chlorobenzoic
- c. Para-aminophthalic
- d. Para-aminobenzoic**
- e. Para-aminobenzenesulfonic

1434. Paracetamol substance has been received for analysis. Reaction with the solution of iron (III) chloride resulted in blue-purple color. This indicates the presence of:

- a. Aldehyde group
- b. Ester group

c. Alcoholic hydroxyl

**d. Phenolic hydroxyl**

e. Keto group

1435. Production of tablets requires stage-to-stage quality control. What devices are used to determine the particle size distribution (fraction) of granules?

a. Microscope

**b. Standard set of sieves**

c. Blade friabilators

d. Various vibrosieves

e. Laboratory identifiers

1436. Various dryer types are used in production of herbal and animal-derived drugs. What dryer would be optimal for dehumidification of thermolabile compounds?

a. Roller dryer

b. Drying oven

c. Drum dryer

**d. Freeze dryer**

e. Band dryer

1437. An analytical laboratory has received a procaine hydrochloride substance for analysis. According to the State Pharmacopoeia of Ukraine limit content of heavy metals should be determined with the following reagent:

a. Hypophosphite

b. Methoxyphenylacetic acid

**c. Thioacetamide**

d. Aminomethyl alizarin acetic acid

e. Sulfomolybdenum

1438. Select a reagent that should be applied by an analytical chemist to detect alkaloids in the herbal raw material:

**a. Dragendorff reagent**

b. Alkaline solution

c. Trim-Hill reagent

d. Stahl's reagent

e. Bromine water

1439. A warehouse received a batch of herbal raw material consisting of peppermint leaves. Specify the storage conditions for this herbal material:

a. At the temperature of -5°C

**b. Separately from other herbal raw materials**

c. In metal storage containers

d. Under the regular conditions

e. Protected against CO<sub>2</sub>

1440. For a month a pharmacy has been receiving multiple deliveries from various suppliers. What accrual document is used to record the goods received by the pharmacy?

a. Invoice register

b. Cash book

c. Debit/credit invoice

**d. Merchandise activity report**

e. Receipt log book

1441. A set of values, traditions, behavioral norms and views inherent to an organisation characterize its following feature:

a. Self-development capability

**b. Culture**

c. Profitability

- d. Success
- e. Capitalization level

1442. Products differentiation (advantages) pursued by a pharmaceutical company with the aim to surpass its competitors in satisfying customers's demands is called:

- a. Porter's generic strategies model
- b. Benchmarking
- c. Product leadership
- d. Penetration strategy
- e. Concentration strategy

1443. Sterilization methods used for the preparation of drugs under aseptic conditions can be differentiated into physical, mechanical, and chemical ones. Specify the chemical method of sterilization:

- a. Pressure steam sterilization
- b. UV light sterilization
- c. Dry heat sterilization
- d. Radiation sterilization
- e. Addition of preservatives

1444. One of the first stages of business activity is to register an enterprise with public authorities. What documents NEED NOT be submitted to the local authorities for state registration of an enterprise?

- a. Payment document for registration fee
- b. Record card
- c. Samples of director's and chief accountant's signatures
- d. Payment document confirming owner's assessed contribution
- e. Constituent documents

1445. For better coverage of various markets the Lubnyfarm company sells a portion of its production through its chain of pharmacies, another portion is being sold through distributors, and the third - through pharmacies of another owners. What marketing system of distribution is used by this company?

- a. Multichannel
- b. Corporate
- c. Administered
- d. Contractual
- e. Horizontal

1446. One of the most important market characteristics is a goods economic trend. What economic trend can be characterized by relative stability of high prices and the highest activity of manufacturers and customers?

- a. Subsiding
- b. Sluggish
- c. Low
- d. High (stable)
- e. Downward

1447. A patient has been administered powders containing menthol. What is the best way to achieve the required extent of menthol comminution?

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

1448. An analytical laboratory received a sample of alpha-aminobutyric acid for analysis. What reagent should be used by the analytical chemist to identify this substance?

a. Calcium bromide

**b. Ninhydrin**

c. Benzene

d. Sodium nitrate

e. Aniline

1449. A retail pharmacy has been purchasing goods within an accounting period. What changes to the balance will result from this business transactions?

**a. Increase in assets and liabilities**

b. Changes will affect only the assets

c. -

d. Changes will affect only the liabilities

e. Decrease in assets and liabilities

1450. Which of the following nonsteroid anti-inflammatory agents has the least harmful effect on the mucosa of gastrointestinal tract?

a. Diclofenac

b. Piroxicam

c. Acetylsalicylic acid

**d. Nimesulide**

e. Indomethacin

1451. When preparing an ointment with castor oil and vaseline a pharmacist failed to obtain a homogeneous system. What is the most likely cause of incompatibility between these components?

a. Coagulation

b. Adsorption

c. Limited solubility

d. Release of crystallization water

**e. Immiscibility of the ingredients**

1452. Tablet quality is assessed through various indicators. Name the apparatuses used to measure tablet dissolution:

a. Rotating basket

**b. Paddle, flow-through cell**

c. Paddle, rotating basket

d. Rotating basket, flow-through cell

e. Flow-through cell

1453. 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. 1 year prior to calculation

b. Six months prior to calculation

**c. Three months prior to calculation**

d. 10 days prior to calculation

e. 7 days prior to calculation

1454. A certain plant is used for production of tinctures and extracts that are a part of complex drugs, such as Bellataminal, Becarbon, Besalol, etc. Specify the grass that is used for this purpose:

a. Lily of the valley

b. Beggarticks

c. Celandine

**d. Belladonna**

e. Astragalus

1455. A pharmacist has prepared a drug by the following prescription: Rp.: Streptocidi Dermatoli ana 1,0 Lanolini Vaselini ana 5,0 M.D.S.: Apply to the affected area of skin. Specify the type of the disperse system:

a. Hydrophilic ointment

b. Solution ointment

**c. Suspension ointment**

d. Combined ointment

e. Extraction ointment

1456. Which of the following antibiotics can be identified by means of maltol test?

a. Lincomycin hydrochloride

b. Kanamycin monosulfate

c. Doxycycline hydrochloride

d. Amoxicillin

**e. Streptomycin sulfate**

1457. What concept can be described as determining the goods specifications, special features that distinguish these goods from their competitor manufactured analogues?

a. Consumer value

**b. Positioning**

c. Quality

d. Selection

e. Demand

1458. Aerosols contain active ingredients, solvents, propellants. What substances can be used as propellants?

**a. Freon 11, carbon monoxide, propane/butane mixture**

b. Glycerine, argon, helium

c. Hydrogen sulfide, hydrogen, triethanolamine

d. Linaetholum, myristinic acid, benzocaine

e. Isopropyl myristate, neon, sulfur oxide

1459. White precipitate produced by the reaction of morphine hydrochloride with ammonia solution dissolves in sodium hydroxide solution due to the presence of the following group in the structure of morphine hydrochloride:

a. Keto group

**b. Phenolic hydroxyl**

c. Aldehyde group

d. Carboxyl group

e. Alcoholic hydroxyl

1460. A pharmacy plans to purchase and retail goods of different stock record units. Which group of goods does VAT reduction apply to?

a. Baby food

b. Curative cosmetics

c. Perfumes

**d. Medicaments**

e. Optics

1461. During processing, drying and refinement of herbal raw materials containing saponins the dust particles can cause mucosa irritation. Therefore, precautionary measures should be observed when working with:

a. Rhizomata Tormentillae

b. Rhizomata Bistortae

c. Rhizomata et radices Rubiae

**d. Rhizoma et radices Polemonii**

e. Radices Araliae

1462. An analytical chemist identifies the substance of potassium acetate. What reagent confirms the presence of potassium cation in the substance?

**a. Tartaric acid**

b. Potassium permanganate

- c. Zinc oxide
- d. Iron (III) chloride
- e. Sodium hydroxide

1463. A pharmacy has received a batch of drugs from a pharmacy depot. Specify the drug subject to the controlled substance inventory in pharmacies:

- a. Novocaine
- b. Acetylsalicylic acid
- c. Paracetamol
- d. Analgin

**e. Dicaïne**

1464. 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 share
- b. An unattractive segment

**c. A market niche**

- d. A segment requiring further research
- e. A market door

1465. The manufacturing pharmaceutical company "Elema" has set up its own corporate pharmacy. In this case, it uses the following distribution channel:

- a. Second level
- b. First level

**c. Zero level**

- d. Third level
- e. Fourth level

1466. What type of market can be characterized by the following conditions: there are many sellers and buyers, who have no influence over current prices; similar and interchangeable competing goods are available; no price limits?

- a. Pure monopoly
- b. Economic planning
- c. Monopolistic competition
- d. Oligopoly

**e. Pure competition**

1467. An analytical laboratory received the task to confirm the presence of ethylenediamine in aminophylline. Which of the following reagents allows to detect ethylenediamine?

- a. Barium chloride

**b. Copper (II) sulfate**

- c. Concentrated sulfuric acid
- d. Sodium hydroxide
- e. Silver nitrate

1468. Specify the indicator that measures the total contribution of various solutes to the osmotic pressure of the solution:

- a. Isoviscosity
- b. Apyrogenicity
- c. Isohydricity
- d. Isotonicity

**e. Osmolality**

1469. Quality of viscous extracts is assessed based on a variety of indices. Specify the maximum allowed moisture content of viscous extracts according to the regulations of the State Pharmacopoeia of Ukraine:

- a. 5%

- b. 100%
- c. 20%
- d. 10%
- e. 30%**

1470. Injection solutions in ampoules are assessed through various indicators. What percentage of ampoules should be checked for mechanical impurities?

- a. 95%
- b. 98%
- c. 100%**
- d. 90%
- e. 50%

1471. A pharmacy prepares suspensions. What substance can be used for preparing a suspension without adding a stabilizer?

- a. Sulfur
- b. Camphor
- c. Magnesium oxide**
- d. Menthol
- e. Phenyl salicylate

1472. During planned inventory of cash money in a pharmacy cash register there is an unaccounted surplus discovered. What should a committee do with this surplus?

- a. Transfer to authorized capital
- b. Transfer to accounts receivable
- c. Transfer to emergency fund
- d. Record as received**
- e. Transfer to accounts payable

1473. To confirm the presence of sulfate ions in the medicinal preparation of magnesium sulfate an analytical chemist of a pharmacy uses the following solutions:

- a. Diphenylamine
- b. Barium chloride and hydrochloric acid**
- c. Silver nitrate and nitric acid
- d. Ammonium chloride and ammonium hydrate
- e. Benzenesulfonic acid

1474. Streptocide, sulfacyl sodium, norsulfazole or sulfadimezinum can be identified by means of the reaction that forms:

- a. Fluorescein
- b. -
- c. Murexide
- d. Iodoform
- e. Azo dye**

1475. Pharmaceutical market is in such a situation when there is only one company selling a certain product. Specify the competitive structure of the market:

- a. Monopolistic competitive market
- b. Pure competition market
- c. Pure monopoly market**
- d. Oligopolistic market
- e. Pure monopoly market and oligopolistic market

1476. An analytical chemist determines the quantity of a drug by the method of indirect bromatometry. Which of the following titrated solutions is to be used?

- a. Sodium edetate
- b. Calcium bromate
- c. Sodium thiosulfate**

- d. Sodium nitrite
- e. Silver nitrate

1477. A pharmacist working at an analytical laboratory is performing sulfite-ion identification of a drug in compliance with the requirements of State Pharmacopoeia of Ukraine. What reagent becomes colorless in this investigation?

- a. Potassium nitrate solution
- b. Iodine solution**
- c. Ammonia solution
- d. Iron (III) chloride solution
- e. Potassium iodide solution

1478. An analytic laboratory received "Aether anaestheticus" for analysis. Which reagent should be used for detection of acetone and aldehyde admixtures according to the State Pharmacopoeia of Ukraine?

- a. Alkaline solution of potassium tetraiodomercurate**
- b. Aqueous solution of potassium iodide
- c. Hydroxylamine solution
- d. Sodium hydrosulphite
- e. Ammonium solution of argentic nitrate

1479. Natural persons registered as small business entities with simplified taxation scheme (2 group) are subject to the limit of the annual amount of sales proceeds. Specify the proceeds limit:

- a. 1 million UAH**
- b. 100 thousand UAH
- c. 5 million UAH
- d. 3 million UAH
- e. 750 thousand UAH

1480. Fatty oil containing unsaturated fatty acids is used for the prevention of atherosclerosis. Specify the herbal raw material used in oil production:

- a. Seeds of fennelflower
- b. Fruits of black chokeberry
- c. Hawthorn berries
- d. Seeds of flax**
- e. Fruits of dill

1481. 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. 95%
- b. 5%**
- c. 20%
- d. 25%
- e. 75%

1482. When preparing dermatological ointments the following substance should be introduced by suspending:

- a. Protargol (silver proteinate)
- b. Ephedrine hydrochloride
- c. Camphor
- d. Menthol
- e. Xeroform**

1483. Benzathine benzylpenicillin is the drug of choice for treatment of the following disease:

- a. Furunculosis
- b. Syphilis**
- c. Pneumonia
- d. Intestinal infection



e. Tonsillitis

1484. The main active substances of senna leaves and fruits are sennosides A, B, C, D. They belong to the following class of biologically active substances:

- a. Flavonoids
- b. Phenolic acids
- c. Anthracene derivatives**
- d. Iridoids
- e. Thioglycosides

1485. Codeine is used as a coughdepressant. What herbal raw material contains this alkaloid?

- a. Grass of common periwinkle
- b. Tea leaves
- c. Pods of plume poppy
- d. Celandine grass
- e. Pods of opium poppy**

1486. What herbal drug produced from alkaloid-containing raw materials can be recommended for neurasthenia, insomnia, menopausal disorders?

- a. Securinine nitrate
- b. Vinblastine
- c. Ergotamine
- d. Glaucine hydrochloride
- e. Novopassit**

1487. A pharmacist prepares 3000 ml of valerian root infusion for a hospital department. The given amount of extract should be infused in a water bath for:

- a. 30 minutes
- b. 25 minutes**
- c. 15 minutes
- d. 45 minutes
- e. 10 minutes

1488. A pharmacist has prepared a solution of menthol oil. Specify the dissolution temperature of the active substance:

- a. 70-80°C
- b. 20-30°C
- c. 60-70°C
- d. 30-40°C
- e. 40-50°C**

1489. 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. Loss of property
- b. Loss of time
- c. Financial loss
- d. Business risk**
- e. Labour loss

1490. Althaea roots are used as a mucolytic agent. Underground parts of this plant are harvested:

- a. In the period of fruiting
- b. In the period of blossoming
- c. After the seeds have ripened, and the above-ground part have died off**
- d. In the period of budding
- e. In the period of stem extension

1491. Substance of calcium pangamate is to be studied in an analytical laboratory. Calcium cations form white precipitate with the following reagent:

- a. Potassium bromide
- b. Sodium cobaltinitrite
- c. Sodium chloride
- d. Potassium permanganate
- e. Ammonium oxalate**

1492. In cases of inorganic mercury compounds poisoning the following drug should be used for antidotal therapy:

- a. Calcium tetacine
- b. Naloxone
- c. Unithiol (Dimercaptopropane sulfonate)**
- d. Desferal (Deferoxamine)
- e. Dexamethasone

1493. As a pharmacist was serving a customer, who ordered a nonprescription drug, he realized that the patient did not apprehend the verbal information. Name the communicative barriers that arise when words or symbols may have different meanings for the information sender and the receiver:

- a. Semantic barriers**
- b. Nonverbal barriers
- c. Stereotypes of thinking
- d. Failure to understand the importance of information
- e. Neglect of facts

1494. 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°C with 24-hour-long intervals in between for thermostating**
- b. Sterilization with flowing steam at 100°C
- c. Sterilization with high-frequency and microwave frequency current
- d. Sterilization with dry heat at 180-200°C for a lengthy period of time
- e. Autoclaving at 119-121°C with pressure at 1,0-1,1 atm

1495. What final document is used for the preparation of the report on the discrepancies revealed in the course of the inventory at a pharmacy?

- a. Inventory item description
- b. Commercial report
- c. Invoice
- d. Act on the inventory results**
- e. Checklist

1496. According to the basic regulations for supply of medical products, pharmacies should be supplied with medicaments that have a remaining shelf life of no less than . . .%, and bacterial preparations of no less than . . .%:

- a. 50%, 40%
- b. 80%, 60%
- c. 60%, 40%**
- d. 40%, 20%
- e. 60%, 30%

1497. A pharmaceutical enterprise produces ointments. What base is used for production of sulfur ointment simple?

- a. Lanolin
- b. Polyethylene glycol
- c. Vaseline
- d. Base "For ophthalmic ointments"
- e. Emulsion**

1498. Powders that quickly enter into a reaction in presence of water and emit carbon dioxide belong to the following group:

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

1499. While filling hard gelatin capsules such glidants as 0,1% - 0,3% aerosil or magnesium stearate along with 0,5% - 1% talcum are often added to the filling agent in order to improve the following properties:

- a. Regulation of moisture content
- b. Homogeneity
- c. Flowability**
- d. Homogeneity of mixing
- e. Ability to contact molding

1500. A patient suffering from bronchial asthma has been diagnosed with essential hypertension. What antihypertensive drug is contraindicated in this case?

- a. Captopril
- b. Hypothiazid (Hydrochlorothiazide)
- c. Verapamil
- d. Propranolol**
- e. Amlodipine

1501. A female patient in the first trimester of her pregnancy has been diagnosed with acute pyelonephritis. What is the antibiotic drug of choice for treatment of this patient?

- a. Norfloxacin
- b. Chloramphenicol
- c. Amikacin
- d. Amoxicillin**
- e. Gentamicin

1502. Which group of adjuvants includes polyvinyl alcohol allowed for use under the State Pharmacopoeia of Ukraine regulations?

- a. Prolongators**
- b. pH adjusters
- c. Isotonizing agents
- d. Antioxidants
- e. Preservatives

1503. A patient with moderately severe pneumonia has been administered ceftriaxone 1 time per day. The drug should be taken once a day due to its following property:

- a. Wide range of action
- b. Presence of bactericidal action
- c. Slow excretion**
- d. Cumulative ability
- e. Poor absorption from the injection site

1504. A pharmacist is preparing an ointment under aseptic conditions on the sterile ointment base - composition of vaseline and lanoline at a ratio 6:4. The drug substance is incorporated by suspending. Such technology of ointment preparation is typical for the following substance:

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

1505. Mixers are used to obtain a homogeneous mixture of freeflowing materials. What mixers have no rotating details?

- a. Double cone blenders
- b. Centrifugal mixers
- c. Drum mixers
- d. Blade mixers

**e. Fluidized bed mixers**

1506. In the course of isoniazid identification a pharmacy analyst has thoroughly boiled the substance with 2,4-dinitrochlorobenzene. The substance colored yellow, after adding alkaline solution it colored first violet and then brownish-red. As the result of this reaction the following aldehyde derivative is produced:

- a. Glutamic
- b. Gluconic
- c. Glutaconic**
- d. Glyoxylic
- e. Hexanic

1507. A routine inventory revealed a cash shortage. Who has to reimburse the sum of the revealed shortage?

- a. Cashier**
- b. Deputy director of a pharmacy
- c. Deputy head of a department
- d. Department head
- e. Pharmacy director

1508. A 43-year-old patient with a severe form of rheumatoid arthritis has been administered a certain drug for background therapy. Specify this drug:

- a. Methotrexate**
- b. Nimesulide
- c. Methylprednisolone
- d. Prednisolone
- e. Diclofenac sodium

1509. 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. Mixed
- c. Specialized
- d. Referent
- e. Decentralized

1510. A pharmacy received a formula for an alcohol solution of methylene blue with unspecified alcohol concentration. In this case, a pharmacist should use ethyl alcohol of the following concentration:

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

1511. A pharmacist needs to prepare 10,0 g of eye ointment vehicle. What amounts of lanolin and vaseline should be taken?

- a. 12,0 g of anhydrous lanolin and 18,0 g of vaseline
- b. 1,0 g of anhydrous lanolin and 29,0 g of vaseline
- c. 1,0 g of anhydrous lanolin and 9,0 g of vaseline**
- d. 27,0 g of anhydrous lanolin and 3,0 g of vaseline
- e. 10,0 g of anhydrous lanolin and 20,0 g of vaseline

1512. Rifampicin is a cytochrome P450 inducer; therefore, its interaction with other chemically active drugs:

- a. Has no effect on concentration of other drugs
- b. Can increase concentration of other drugs
- c. Can decrease concentration of other drugs**
- d. Can result in binding with other metabolites
- e. Has no effect on toxicity of other drugs

1513. Bronchodilatory effect of a short-acting  $\beta_2$ -adrenoceptor agonist, - salbutamol, - develops after:

- a. 45-60 minutes
- b. 20-30 minutes
- c. 5-10 minutes**
- d. 2-3 hours
- e. 4-6 hours

1514. Representatives of the family Solanaceae are widely used in medical practice as alkaloid-containing plants. Which representative is the source for production of semisynthetic steroid hormones?

- a. *Atropa belladonna*
- b. *Hyoscyamus niger*
- c. *Solanum tuberosum*
- d. *Solanum laciniatum***
- e. *Datura Stramonium*

1515. Grass of *Equisetum arvense* is recommend as a diuretic. What herbal raw material can be used as a substitute?

- a. *Herba Menthae piperitae*
- b. *Herba Leonuri*
- c. *Herba Aervae lanatae***
- d. *Herba Convallariae*
- e. *Herba Adonidis*

1516. Under the State Pharmacopoeia of Ukraine (appendix 2) leaves of ginkgo are standardized by the content of:

- a. Saponins
- b. Coumarins
- c. Chromones
- d. Flavonoids**
- e. Alkaloids

1517. During employment a pharmacy manager provides a dispensing chemist with job description. Such communication is called:

- a. Descending**
- b. External
- c. Non-verbal
- d. Informal
- e. Ascending

1518. Some of the local businesses has entered into a temporary statutory association to buy medical goods from foreign manufactures. Name such association:

- a. Corporation
- b. Concern
- c. Consortium**
- d. Association
- e. Syndicate

1519. A pharmaceutical manufacturer sets the price for a drug basing on its prime cost with premium. What model of pricing is it?

- a. Breakeven
- b. Cost-based**
- c. Demand-based
- d. Competitive
- e. Supply-based

1520. A dosage form for internal use, which consists of round or irregular shaped uncoated grains containing mixture of active ingredients and adjuvants, is called:

- a. Tablets
- b. Spansules
- c. Dragee
- d. Granules**
- e. Tea

1521. 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. Polarimetry
- b. Argentometry**
- c. Iodometry
- d. Bromatometry
- e. Cerimetry

1522. A 35-year-old patient with tachycardia has been administered propranolol. Which of the following reactions may be caused by the use of beta-blockers?

- a. Bronchospasm**
- b. Cumulation
- c. Constipations
- d. Blood pressure rise
- e. Drug dependence

1523. Diazotization reaction with the following azo compound is common for the substances with primary amino groups. What drug DOES NOT yield this reaction?

- a. Barbitol**
- b. Procaine hydrochloride
- c. Sulfanilamide
- d. Procaineamide hydrochloride
- e. Benzocaine

1524. Cash receipts and payments at a pharmacy are recorded in a cashbook. Which of the following cash transactions IS NOT REGARDED as a receipt transaction?

- a. Recognizing cash receipts from sales at a pharmacy
- b. Return of unused disbursement funds
- c. Recognizing accrued salaries and advance payable
- d. Issuing funds to be accounted for**
- e. Recognizing cash receipts from sales at pharmacy stands and outlets

1525. Phytochemical workshop of a factory manufactures pancreatin. What is the source material for obtaining pancreatin?

- a. Egg white
- b. Pancreas of pigs or cattle**
- c. Lungs of cattle
- d. Gastric mucosa of pigs
- e. Heart of cattle

1526. The following substance is used as an extractant in production of liquid extracts:

- a. Acetone
- b. Chloroform
- c. Glycerine

**d. Ethanol**

e. Dichloroethane

1527. A patient with signs of morphine intoxication has been delivered into an admission room. Name the necessary antidote:

a. Ectericidum

b. Trental (Pentoxifylline)

c. Collargol

d. Essentiale

**e. Naloxone**

1528. A patient, who had been taking acetylsalicylic acid, has developed hemorrhages of mucous membranes. This phenomenon is associated with:

a. Decreased absorption in gastrointestinal tract

b. Increased absorption in gastrointestinal tract

**c. Inhibition of prothrombin synthesis**

d. Disorder of protein binding

e. Changed volume of distribution

1529. A dispensing chemist with calculated length of service of 7 years has fallen ill. What percent of the sum stated in her sick list would she receive?

a. 100%

b. 60%

c. 50%

**d. 80%**

e. 70%

1530. Quantitative determination of sodium tetraborate according to the State Pharmacopoeia of Ukraine regulations is performed by means of alkalimetry method in the presence of:

a. Mercury (II) acetate

b. Formaldehyde

c. Acetic anhydride

d. 96% ethanol

**e. Mannitol**

1531. Quantitative content of a certain medicinal substance can be determined by means of nitritometry only if hydrolisis had been performed prior to it. Name this substance:

a. Dicain (Tetracaine)

b. Procaine hydrochloride

c. Norsulfazole

d. Benzocaine

**e. Streptocide soluble**

1532. 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. Alkaloids

c. Iridoids

d. Glycosides

e. Tannins

1533. Menthol has anesthetic and antiseptic effect. What herbal raw material is the source of menthol?

a. Folia Salviae

b. Folia Absinthii

c. Folia Uvae ursi

d. Folia Eucalypti

**e. Folia Menthae piperitae**

1534. The main method of quantitative determination of corticosteroids is:

- a. Acidimetry
- b. Spectrophotometry**
- c. Cerimetry
- d. Potentiometry
- e. Argentometry

1535. Thyme grass is used for the production of herbal drugs for the treatment of respiratory tract infections. Under the State Pharmacopoeia of Ukraine the herbal raw 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. Quercetin and rutin
- c. Arbutin and methyl arbutin
- d. Apigenin and luteolin
- e. Atropine and hyoscyamine

1536. Eucalyptus leaves contains essential oil and are used in production of bactericidal herbal drugs. According to the State Pharmacopoeia of Ukraine this herbal raw material can be identified with thin-layer chromatography. After the chromatographic plate is processed with reagent, the following should be identified:

- a. Apigenin
- b. Glaucine
- c. Quercetin
- d. Scopoletin
- e. Cineole**

1537. 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 the content of:

- a. Essential oil and proazulenes**
- b. Polysaccharides
- c. Vitamines
- d. Cardiac glycosides
- e. Alkaloids

1538. To analyze market activity and determine its place within the market a pharmaceutical company should evaluate its potential: strengths and weaknesses within the company itself (internal factors), as well as opportunities and threats received from the market environment (external factors). It can be done with:

- a. Porter's matrix
- b. ABC analysis
- c. Ansoff's matrix
- d. Boston Consulting Group
- e. SWOT analysis**

1539. Mercazolil (Thiamazole) is widely applied in medicine as an antithyroid agent. What heterocycle is its structure based on?

- a. Triazole
- b. Pyrrole
- c. Imidazoline
- d. Imidazole**
- e. Pyrazole

1540. A 48-year-old woman addressed a dispensing chemist with complaints of constipations developing after she had started treatment of her chronic cardiovascular disease. What drug can slow



down intestinal peristalsis?

- a. Folic acid
- b. Ascorbic acid
- c. Enalapril
- d. Verapamil**
- e. Losartan

1541. To identify medicinal substances containing calcium an analytical chemist uses solution of:

- a.  $\beta$ -naphthol
- b. Potassium thiocyanate
- c. Glyoxal-hydroxyanil**
- d. Hexamethylenetetramine
- e. Potassium permanganate

1542. Calcium gluconate is tested for presence of saccharose and reducing sugars admixtures with coppertartrate reagent. If these admixtures are present the substance colors:

- a. Red**
- b. Green
- c. White
- d. Turquoise
- e. Blue

1543. A drug has just entered the market and requires considerable investments, while does not return substantial profits, and is currently at the introduction stage. What group of products (strategic economic units) does this drug belong to according to the Boston Consulting Group?

- a. -
- b. Problem children**
- c. Stars
- d. Dogs
- e. Cash cows

1544. A 5-year-old boy suffering from pneumonia has problems with mucus expectoration. A doctor prescribed him a mucolytic drug that stimulates surfactant synthesis. Name this drug:

- a. Acetylcysteine
- b. Potassium iodide
- c. Carbocisteine
- d. Mucaltin
- e. Ambroxol**

1545. A patient with peptic ulcer disease has developed blackcolored feces during combined pharmacotherapy. Name the drug that can be the cause of this development:

- a. Lansoprazole
- b. Ranitidine
- c. Famotidine
- d. Omeprazole
- e. Bismuth subcitrate**

1546. A 43-year-old patient was delivered to an admission room with renal colic attack. What group of drugs would be the most efficient during the attack?

- a. Antacids
- b. Hepatoprotectors
- c. Antispasmodics**
- d. Antibiotics
- e. Cholagogues

1547. A bus driver addressed a pharmacy due to his suffering from allergic rhinitis. What antihistamine with minimal sedative action can you recommend?

- a. Astemizole

- b. Clemastine
- c. Loratadine**
- d. Diphenhydramine
- e. Chloropyramine

1548. What antibiotic has beta-lactam cycle in its structure?

- a. Chloramphenicol
- b. Doxycycline hyclate
- c. Benzylpenicillin potassium salt**
- d. Streptomycin sulfate
- e. Lincomycin hydrochloride

1549. A 36-year-old patient complains of general weakness, somnolence, increased brittleness of nails, loss of hair. The patient was diagnosed with iron-deficiency anemia. What drug should be prescribed for treatment?

- a. Ferric sulfate**
- b. Folic acid
- c. Riboxin (Inosine)
- d. Myelosanum (Busulfan)
- e. Cyanocobalamin

1550. What hypotensive drug is an agent of choice for the patients suffering from arterial hypertension with concomitant type I diabetes mellitus?

- a. Atenolol
- b. Hydrochlorothiazide
- c. Lisinopril**
- d. Labetalol
- e. Carvedilol

1551. To identify ouabain (a cardiac glycoside) an analytical chemist performs a reaction with dinitrobenzene solution in alkaline medium. What molecule fragment can be determined by this reaction?

- a. Benzene ring
- b. Purine cycle
- c.  $\beta$ -lactam cycle
- d. Pyridine cycle
- e. Five-membered unsaturated lactone ring**

1552. A pharmacy employee has to work during night time. What document must be used as a basis for pay rise calculation by an employer in this case?

- a. Expense report
- b. Income summary
- c. Internal memorandum
- d. Employee's application
- e. Collective agreement**

1553. A pharmacy received a batch of drugs from a supplier. What type of drug quality control should be performed in the pharmacy by an authorized person?

- a. Laboratory
- b. Complete chemical
- c. Chemical
- d. Physical
- e. Incoming**

1554. A patient with essential hypertension complains of infrequent occurrences of dry cough. Clinical and X-ray examination of the respiratory organs revealed no pathologies. What drug from those taken by the patient can cause cough as a side effect?

- a. Prestarium (Perindopril)

**b. Captopril**

- c. Hydrochlorothiazide
- d. Diltiazem
- e. Nebivolol

1555. A business entity working in drug retail trade should keep the documents confirming the fact of a sale, where there are name, date, amount and series of a received drug stated, along with supplier information and license details. These documents are retained for:

- a. 1 year
- b. 6 months
- c. 5 years
- d. 3 years**
- e. 2 years

1556. 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. Riboflavin
- c. Cocarboxylase hydrochloride
- d. Ergocalciferol
- e. Rutin

1557. 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. Propranolol
- c. Acetylsalicylic acid
- d. Dipyridamol
- e. Drotaverine hydrochloride

1558. A patient with osteoarthritis (gonarthrosis) and peptic gastric ulcer in anamnesis should be prescribed a NSAID (nonsteroidal antiinflammatory drug). What NSAID would be the safest for this patient?

- a. Metamizole sodium
- b. Meloxicam**
- c. Ibuprofen
- d. Acetylsalicylic acid
- e. Indometacin

1559. In the course of clinical instrumental examination a 45-year-old patient has been diagnosed with chronic helicobacter-associated type B gastritis. What group of drugs should be prescribed first of all?

- a. Antacids
- b. Prokinetic agents
- c. Anti-Helicobacter pylori agents**
- d. Reparative drugs
- e. Anti-muscarinic agents

1560. When servicing customers it is necessary to maintain cash desk discipline. A cashier should make records in the cash book:

- a. Monthly
- b. Weekly
- c. At the end of a workday
- d. Immediately after the cash transaction occurred**
- e. Quarterly

1561. Name the way of injectable application:

- a. Sublingual

**b. For injection solutions of drugs**

- c. For implantations
- d. Peroral
- e. Vaginal

1562. What factors affect tablet disintegration?

**a. Amount and nature of disintegrating agents**

- b. High specific gravity of powders
- c. Heterogeneity of granulated material
- d. Tablet powder contains lamellar crystals
- e. Poor flowability

1563. Cytitonus agitates respiratory center during asphyxiation, state of shock, intoxication and respiratory arrest. Seeds of a medicinal herb are the source of this drug. Name this herb:

- a. *Linum usitatissimum*
- b. *Cucurbita pepo*
- c. *Ricinus communis*

**d. *Thermopsis lanceolata***

- e. *Plantago psyllium*

1564. During qualitative chemical analysis of nicotinic acid substance the reaction was conducted, which resulted in blue coloring. What reagent was used?

- a. Sodium hydroxide solution
- b. Thiocyanogen bromide reagent
- c. Nessler's reagent

**d. Copper (II) sulfate solution**

- e. Iron (III) chloride solution

1565. Pharmaceutical market subjects that purchase drugs and medical products for further resale to make a profit are called:

- a. Individual consumers

**b. Dealers**

- c. Consumer organisations
- d. Manufacturers
- e. Government authorities

1566. 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. Promotional marketing
- c. Remarketing
- d. Synchromarketing
- e. Creative marketing

1567. Cephalosporin structure is based on the condensed system containing two cycles -  $\beta$ -lactam and:

- a. Pyridine

**b. Dihydrothiazine**

- c. Pyrrolizidine
- d. Thiazolidine
- e. Phenothiazine

1568. To prepare eyedrops with antibiotic a dispensing chemist has been using flowing steam sterilization under 100°C for 30 minutes. What antibiotic allows for such sterilization?

- a. Sodium benzylpenicillin
- b. Biomycin
- c. Erythromycin

d. Levomycetin (Chloramphenicol)

e. Streptomycin sulfate

1569. A 48-year-old patient has undergone incomplete amputation of the thyroid gland. Choose the drug for replacement therapy in case of hypothyroidism:

a. L-thyroxin

b. Insulin

c. Prednisolone

d. Metoprolol

e. Hydrocortisone

1570. Specify the medicinal substance with pronounced hydrophobic properties:

a. Sulfur

b. Zinc oxide

c. Magnesium oxide

d. Sodium bromide

e. Basic bismuth nitrate

1571. A 34-year-old patient suffering from systemic lupus erythematosus takes methylprednisolone. On examination the patient's blood calcium is revealed to be low. A doctor suspects osteoporosis development. It is necessary to prescribe the patient calcium preparations and:

a. Vitamin D3

b. Vitamin C

c. Vitamin E

d. Vitamin A

e. B-group vitamins

1572. A pharmacist has made an oil emulsion with vitamin E oil solution intended for internal use. What is the best approach to vitamin introduction into the emulsion?

a. Dissolve in glycerine

b. Dissolve in water to make primary emulsion

c. Suspend in the prepared emulsion

d. Dissolve in water for emulsion dilution

e. Dissolve in oil before making primary emulsion

1573. Name the professional, who is authorized to check financial and economic activity of an enterprise at the request issued by an enterprise or public authority:

a. Auditor

b. Pharmacy manager

c. Compliance officer

d. Inspector

e. Chief accountant

1574. 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. Paracetamol

c. Penicillin

d. Furosemide

e. Hydrochlorothiazide

1575. Speed of blend powder dampening can be significantly affected by package material. What capsules protect powders from damp air the best?

a. Polyethylene

b. Paper

c. Parchment

d. Soft gelatine

e. Waxed

1576. Anthracene derivatives have two main directions of pharmacological activity: purgative and litholytic. What leads to the difference in pharmacological activity of different anthracene derivatives?

- a. Polymerization
- b. Hydroxyl group placement**
- c. Presence of methyl groups
- d. Amount of sugar residues
- e. Presence of carboxyl groups

1577. A pharmacy manager has calculated a certain indicator of efficiency of pharmacy's economic activity as percentage ratio of profits to turnover in retail prices. What indicator is it?

- a. Turnover growth rate
- b. Inflation rate
- c. Trade stock standard
- d. Profitability**
- e. Turnover expenditure

1578. A pharmacy sells standard drugs to population. What is a prime cost of sold goods, if the retail price is 300 000 UAH, and the total markup is 120 000 UAH?

- a. 180 000 UAH**
- b. 50 000 UAH
- c. 300 000 UAH
- d. 120 000 UAH
- e. 100 000 UAH

1579. Pharmacy employees should meet universal qualification requirements. Who has the right to hold a position of a prescription drugs department manager?

- a. Dispensing chemist**
- b. Sanitary assistant
- c. Manager
- d. Packager
- e. Pharmacist

1580. During the period when a cash register is inoperable and undergoes repairs it is possible to perform payment operations using:

- a. Accompanying notes
- b. Transactions logbook and receipts**
- c. Check book
- d. Payment orders
- e. Credit and debit cash orders

1581. 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. Blue coloring
- b. White caseous precipitate**
- c. Violet coloring
- d. Green fluorescence
- e. Yellow precipitate

1582. A pharmacist has dissolved a medicinal substance in sterile purified water to make an eye ointment. Specify this medicinal substance:

- a. Menthol
- b. Xeroform
- c. Pilocarpine hydrochloride**
- d. Basic bismuth nitrate
- e. Purified sulfur

1583. What tax is registered as a local one in a pharmacy budget?

- a. Income tax
- b. Excise tax
- c. Corporate income tax
- d. Value-added tax

**e. Single tax**

1584. An important indicator of business activity is profitability of a business. Specify the indices that can be used to measure the profitability:

- a. Turnover/income
- b. Turnover/cost price

**c. Profit/turnover**

- d. Income/turnover
- e. Liquidity/solvency

1585. A pharmacy prepares drugs by individual prescriptions. How often should the floors be mopped down in the prescription department?

**a. Once in a shift**

- b. Once every 10 days
- c. Once every 3 days
- d. Once every 5 days
- e. Once in a week

1586. Schedule of sanitation actions in pharmacies is regulated by the relevant regulatory acts. Cleaning day at a pharmacy must be scheduled at least once:

**a. In 5 days**

**b. In a month**

- c. In 3 days
- d. In a week
- e. In 10 days

1587. A pharmaceutical company focuses on selling a diverse range of products covering different customer groups and regions. What kind of organizational structure is typical for such company?

**a. Divisional**

- b. Functional
- c. Decentralized
- d. Centralized
- e. Bureaucratic

1588. Vitali-Morin's reaction is used to identify tropane alkaloids in herbal raw material. Name the alkaloid that can be detected by means of this specific reaction:

**a. Scopolamine**

- b. Morphine
- c. Papaverine
- d. Platyphyllin
- e. Codeine

1589. Standard herbal material of lily-of-the-valley is obtained by drying it at a temperature of 50-60°C to prevent the following possible biochemical process:

- a. Volatilization of essential oils
- b. Oxidation of phenolic compounds

**c. Enzymatic hydrolysis of cardiac glycosides**

- d. Oxidation of resins
- e. Oxidation of terpenoids

1590. A factory workshop producing suspensions and emulsions is going to develop the manufacture of new drugs. What mechanisms can be used for the ultrasound processing of drugs?

- a. Dismembrator, electrical impulse plasmolyzer
- b. Rotor-pulsation apparatus, dismembrator

c. Centrifugal mixer with rotating housing

**d. Liquid whistle, magnetostrictive source**

e. Disintegrator, liquid whistle

1591. A pharmacist has made a topical solution with lipophilic vehicle. Specify the substance that produces such a type of solution:

a. Dermatol (bismuth subgallate)

b. Novocaine hydrochloride

**c. Menthol**

d. Starch

e. Sulfur

1592. 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 committee (LDC)**

b. Highest management bodies of pharmaceutical service at the regional level

c. Commercial court

d. The Ministry of Public Health of Ukraine

e. Trade union committee

1593. Drugs derived from Rauvolfia serpentina roots are used in hypertension treatment. Authenticity of Rauvolfia serpentina herbal raw material can be confirmed by its content of:

a. Adonitoxin

**b. Reserpine**

c. Hyoscyamine

d. Atropine

e. Vinblastine

1594. Medications Passit and Novopassit are used as tranquilizing, sedative and mild hypnotic agents. These medications are produced from the following grass:

a. Three-lobed beggarticks

b. Elecampane

c. Lesser periwinkle

**d. Purple passionflower**

e. Garden sage

1595. What concept can be described as "... an area of exchange with its characteristic system of economic relations between goods manufacturers and consumers"?

a. Agreement

b. Management

c. Marketing

d. Sales

**e. Market**

1596. To prepare a suspension a medicinal substance should be triturated with a small amount of liquid. Specify the optimal amount of liquid for trituration of 10 g of zinc oxide according to the Deriagin's rule:

a. 10 ml

b. 1 ml

c. 0,5 ml

**d. 5 ml**

e. 2 ml

1597. A pharmaceutical factory produces tablets of sodium chloride. What is the method of their production?

a. Dry granulation prior to compression

**b. Direct compression without additional substances**



- c. Direct compression with the addition of excipients
- d. Moulding
- e. Wet granulation prior to compression

1598. Various types of dryers can be used for granule dehumidification. Specify the type of "СП-30" dryer:

a. Fluidized bed dryer

- b. Infrared dryer
- c. Forced air dryer
- d. Silica gel dryer
- e. Freeze dryer

1599. Ampoule workshop of a factory produces 5% oil solution of tocopherol acetate for injections. What method of filling the ampoules is optimal in this case?

- a. Syringe and vacuum
- b. Syringe and devaporation
- c. Vacuum
- d. Devaporation

e. Syringe

1600. An analyst of a chemical laboratory had received a glucose substance for analysis. To check its quality he used a polarimeter. The analyst measured:

a. Angle of rotation

- b. Optical density
- c. Specific gravity
- d. Melting point
- e. Refractive index

1601. A doctor has prescribed pessaries of unspecified mass. What mass should be chosen when pessaries are being prepared in a pharmacy?

a. 6,0

b. 4,0

- c. 1,5
- d. 3,0
- e. 0,5

1602. 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. Hydrochloric acid
- b. Sodium sulfate

c. Sodium hydrochloride

- d. Ascorbic acid
- e. Cysteine

1603. Collective labour agreement is concluded by a trade union committee with the business owner on behalf of the workforce. Any collective agreement is worked out in written form. Which article of the Labour Code regulates the duration of the collective agreement?

- a. 36
- b. 40
- c. 41

d. 17

e. 38

1604. A pharmacist prepares cocoa butterbased 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 vaseline oil
- b. Dissolve in alcohol
- c. Dissolve in Dimexid (Dimethylsulfoxide)

d. Dissolve in molten cocoa butter

**e. Dissolve in minimal quantity of purified water**

1605. A pharmacist prepares an injection solution that must be stabilized with 0,1M of hydrochloric acid solution. What solution is to be prepared?

a. Hexamethylenetetramine

b. Sodium benzoate

c. Calcium chloride

d. Potassium chloride

**e. Novocaine**

1606. A pharmacist has made a drug by the prescription: Rp.: Sol. Protargoli 0,31,0 D.S. For irrigation. Specify the optimal technology of preparation:

a. Dissolve glycerine in the water, add protargol

b. Measure out protargol into the vial, dissolve it in the water, add glycerine

c. Measure out subsequently glycerine, water, and protargol into the vial

**d. Grind protargol in the mortar with glycerine, add water**

e. Dissolve protargol in the water, add glycerine

1607. Paracetamol substance has been sent for analysis. Reaction with the solution of iron (III) chloride resulted in the blue-violet coloring. This indicates the presence of:

a. Aldehyde group

b. Ester group

c. Alcoholic hydroxyl

**d. Phenolic hydroxyl**

e. Keto group

1608. 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. Friabilators

c. Microscope

d. Laboratory identifiers

e. Various vibratory sieves

1609. An analytical laboratory has received a procaine hydrochloride substance for analysis. According to the State Pharmacopoeia of Ukraine limit content of heavy metals should be determined with the following reagent:

a. Hypophosphite

b. Methoxyphenylacetic acid

**c. Thioacetamide**

d. Aminomethyl alizarin acetic acid

e. Sulfomolybdenum

1610. Preparations of sorrel roots can have both a laxative and astringent effect. This is due to the presence of the following biologically active substances:

**a. Anthracene derivatives and tannins**

b. Essential and fatty oils

c. Iridoids and vitamins

d. Coumarins and phenol glycosides

e. Flavonoids and essential oils

1611. Chloride of lime is identified by calcium cations after boiling with acetic acid in order to eliminate active chlorine. What reagent is used?

a. Sodium nitrite

b. Ammonium molybdate

c. Magnesium sulfate

d. Potassium chloride

**e. Ammonium oxalate**

1612. A set of values, traditions, behavioral norms, and views inherent to an organisation characterizes its following feature:

- a. Profitability
- b. Success

**c. Culture**

- d. Capitalization level
- e. Self-development capability

1613. 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. 15%
- b. 20%

**c. 10%**

- d. 5%
- e. 1%

1614. A manufacturing company initiates changes to the package insert of a drug, which are aimed at limitation of its use. What type of marketing is used by the company in this case?

- a. Conversion
- b. Synchromarketing
- c. Stimulating

**d. Counteractive**

- e. Remarketing

1615. For better coverage of various markets the Lubnyfarm company sells a portion of its production through its chain of pharmacies, another portion is being sold through distributors, and the third - through pharmacies of another owners. What marketing system of distribution is used by this company?

- a. Contractual
- b. Administered
- c. Horizontal
- d. Corporate

**e. Multichannel**

1616. One of the most important market characteristics is a goods economic trend. What economic trend can be characterized by relative stability of high prices and the highest activity of manufacturers and customers?

- a. Low
- b. High (stable)**
- c. Downward
- d. Subsiding
- e. Sluggish

1617. A pharmacy prepares 10% sodium chloride injection solution. What sterilization would be optimal in this case?

- a. Gas sterilization
- b. Sterile filtration through membrane
- c. Autoclave chamber with highpressure saturated steam**
- d. Dry-heat sterilization
- e. Irradiation sterilization

1618. 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. Sulfates
- c. Moisture

- d. Chlorides
- e. Redox substances

1619. A pharmacy has received a prescription for tincture. What herbal raw material can be used to make this dosage form?

- a. Rhubarb roots
- b. Arrow-wood bark
- c. Buckthorn bark
- d. Valerian rootstock**
- e. Oak bark

1620. A certain type of herbal raw material is being collected in spring during sap flow. Specify this material:

- a. Roots
- b. Infructescences
- c. Flowers
- d. Buds
- e. Bark**

1621. A medical product reaches its final consumer according to the following scheme: manufacturer / wholesale house / pharmacy / final consumer. Determine the level of the distribution channel:

- a. Two-level channel**
- b. Three-level channel
- c. Four-level channel
- d. Zero-level channel
- e. One-level channel

1622. A pharmacist has prepared a drug by the prescription: Rp.: Olei Helianthi 7,4 Solutionis Ammonii caustici 2,5 ml Acidi oleinici 0,1 M. D. S.: Ammoniac liniment. For infraction. Specify the type of disperse system:

- a. Combined liniment
- b. Liniment-suspension
- c. Extractive liniment
- d. Liniment-emulsion**
- e. Liniment-solution

1623. A pharmacist has prepared a drug by the prescription: Rp.: Streptocidi Dermatoli ana 1,0 Lanolini Vaselini ana 5,0 M.D.S.: Apply to the affected skin. Specify the type of the disperse system:

- a. Solution ointment
- b. Combined ointment
- c. Extraction ointment
- d. Suspension ointment**
- e. Hydrophilic ointment

1624. 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. Refractive index
- c. Distribution coefficient
- d. Relative density
- e. Optical density

1625. Specify the control methods aimed at detecting mechanical impurities in parenteral solutions:

- a. Visual optical**
- b. Amperometric
- c. NMR and UV-visible spectroscopy
- d. Gravitational

e. Limulus test

1626. Adonis-derived drugs are popular cardiotonic agents. The stock of adonis herbal raw material is assessed by the method of:

- a. Geodesic
- b. By eye
- c. Model specimen
- d. Projective cover
- e. Permanent quadrates**

1627. A pharmaceutical analyst identifies the substance of potassium acetate. What reagent confirms the presence of potassium cation in the substance?

- a. Tartaric acid**
- b. Potassium permanganate
- c. Zinc oxide
- d. Iron (III) chloride
- e. Sodium hydroxide

1628. 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. Bromometry
- b. Nitritometric titration
- c. Complexometric titration**
- d. Alkalimetry
- e. Acidimetry

1629. The market can be characterized by the following conditions: there are many sellers and buyers, who have no influence over current prices; similar and interchangeable competing goods are available; there are no price limits. What type of market is it?

- a. Oligopoly
- b. Monopolistic competition
- c. Pure competition**
- d. Pure monopoly
- e. Economic planning

1630. Specify the indicator that measures the total contribution of various solutes to the osmotic pressure of the solution:

- a. Isotonicity
- b. Isohydricity
- c. Osmolality**
- d. Isoviscosity
- e. Apyrogenicity

1631. Dosage precision during tabletmaking mainly depends on the following technological property of tablet mass:

- a. Compressibility
- b. Lyophilic property
- c. Relative density
- d. Compression ratio
- e. Flowability**

1632. 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 leveling, synchromarketing
- b. Demand decrease, demarketing
- c. Demand stimulation, promotional marketing
- d. Demand making, conversion marketing**

e. Demand increase, remarketing

1633. To confirm the presence of sulfate ions in the medicinal preparation of magnesium sulfate an analytical chemist of a pharmacy uses the following solutions:

- a. Benzenesulfonic acid
- b. Diphenylamine
- c. Ammonium chloride and ammonium hydrate
- d. Silver nitrate and nitric acid
- e. Barium chloride and hydrochloric acid**

1634. Natural persons registered as small business entities with simplified taxation scheme are subject to limitation of the annual amount of sales proceeds. Specify the proceeds limit:

- a. 3 000 000 UAH
- b. 5 000 000 UAH
- c. 750 000 UAH
- d. 100 000 UAH
- e. 500 000 UAH**

1635. When preparing dermatological ointments the following substance should be introduced by suspending:

- a. Ephedrine hydrochloride
- b. Xeroform**
- c. Menthol
- d. Camphor
- e. Protargol (silver proteinate)

1636. What is the function of anhydrous lanolin in the suppository mass used for suppositories prepared via hand rolling?

- a. Solubilizer
- b. Emollient
- c. Solvent
- d. Preservative
- e. Plasticizer**

1637. 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 uses optical rotation that should occur within the interval:

- a. From -48° to -51°
- b. From +10° to +13°
- c. From -102° to -105°
- d. From +0, 2° to -0, 2°**
- e. From +50° to +56°

1638. Codeine is used as a cough depressant. What herbal raw material contains this alkaloid?

- a. Grass of common periwinkle
- b. Tea leaves
- c. Grass of plume poppy
- d. Celandine grass
- e. Pods of opium poppy**

1639. What herbal drug produced from alkaloid-containing raw materials can be recommended for neurasthenia, insomnia, menopausal disorders?

- a. Vinblastine
- b. Novopassit**
- c. Glaucine hydrochloride
- d. Ergotamine
- e. Securinine nitrate

1640. An analytical chemist can quantitatively determine the thiamine bromide content in powders by

means of:

- a. Bromometry
- b. Nitritometric titration
- c. Alkalimetry**
- d. Permanganatometry
- e. Complexometric titration

1641. What technology should be chosen by a pharmacist to make a liquid dosage form, if it contains calcium gluconate?

- a. Dissolve in alkaline medium
- b. Dissolve it in hot solvent or heat it up to full dissolution**
- c. Dissolve in the water free of redox substances
- d. First grind it into powder when it is dry or with small amount of solvent added
- e. Add equal amount of sodium chloride

1642. Tyndallization is used at a pharmaceutical factory as one of sterilization methods for thermolabile substances. What is the essence of this method?

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

1643. What final document is used for the preparation of the report on the discrepancies revealed in the course of inventory at the pharmacy?

- a. Invoice
- b. Act on the inventory results**
- c. Checklist
- d. Inventory item description
- e. Commercial report

1644. 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. Simple and capitate hairs
- b. Retor-shaped hairs
- c. Branched and capitate hairs
- d. T-shaped hairs along the leaf edge**
- e. Branched, simple and ciliated hairs

1645. A patient suffering from bronchial asthma was diagnosed with essential hypertension. What antihypertensive drug is contraindicated for this patient?

- a. Propranolol**
- b. Amlodipine
- c. Verapamil
- d. Hypothiazid (Hydrochlorothiazide)
- e. Captopril

1646. In the process of isoniazid identification a pharmacy analyst thoroughly boiled the substance with 2,4-dinitrochlorobenzene. The substance turned yellow. After adding alkaline solution the substance turned first violet and then brownish-red. As the result of this reaction the following aldehyde derivative is produced:

- a. Gluconic
- b. Glyoxylic
- c. Hexanic
- d. Glutaconic**
- e. Glutamic

1647. Indometacine is a nonsteroidal antiinflammatory drug. A condensed heterocyclic system is contained within the structure of this drug. What cycles compose the system?

- a. Benzene and pyridine
- b. Benzene and thiazole
- c. Pyrrole and benzene**
- d. Two 4-oxycoumarin residues
- e. Pyrimidine and imidazole

1648. A 43-year-old patient with a severe form of rheumatoid arthritis has been administered a certain drug for background therapy. Specify this drug:

- a. Prednisolone
- b. Methylprednisolone
- c. Diclofenac sodium
- d. Nimesulide
- e. Methotrexate**

1649. A process dealing with drawing the documents, their processing, circulation and storage is called records management. If all documents circulate through one organization center, - the Office Desk, - then such system of records management is called:

- a. Centralized**
- b. Mixed
- c. Specialized
- d. Referent
- e. Decentralized

1650. Representatives of the family Solanaceae are widely used in medical practice as alkaloid-containing plants. Which representative is the source for production of semi-synthetic steroid hormones?

- a. Atropa belladonna
- b. Hyoscyamus niger
- c. Solanum tuberosum
- d. Solanum laciniatum**
- e. Datura Stramonium

1651. Birch buds are used as a diuretic. Quality of the herbal raw material is determined by its content of:

- a. Vitamins
- b. Iridoids
- c. Saponins
- d. Essential oil**
- e. Lipids

1652. A pharmaceutical manufacturer sets the price for a drug basing on its prime cost with premium. What model of pricing is it?

- a. Supply-based
- b. Breakeven
- c. Competitive
- d. Demand-based
- e. Cost-based**

1653. At the end of each month a pharmacy accountant draws up a balance. What indicator characterizes liabilities of a pharmaceutical company?

- a. Circulating assets
- b. Work-in-process inventory
- c. Accounts receivable
- d. Equity capital**
- e. Reserves and expenses



1654. Who is responsible for the acceptance of goods and medical products with accompanying incoming quality control?

- a. Authorized representative
- b. Dispensing chemist
- c. Analyst
- d. Pharmacy head manager
- e. Supplier pharmacist

1655. A 35-year-old patient with tachycardia has been administered propranolol. Which of the following reactions may be caused by the use of  $\beta$ -blockers?

- a. Bronchospasm
- b. Cumulation
- c. Constipations
- d. Blood pressure rise
- e. Drug dependence

1656. Infuser apparatus is used by a pharmacy to prepare:

- a. Emulsions
- b. Ointments
- c. Infusion solutions
- d. Suspensions

e. Infusions and decoctions

1657. Lately the Phytopharmpharmaceutical 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. Autocratic
- b. Liberal
- c. Directive
- d. Democratic
- e. Authoritarian

1658. The following substance is used as an extractant in production of liquid extracts:

- a. Ethanol
- b. Dichloroethane
- c. Glycerine
- d. Chloroform
- e. Acetone

1659. Which of the following diuretics SHOULD NOT be given to the patients with impaired hearing?

- a. Clopamide
- b. Spironolactone
- c. Furosemide
- d. Indapamide
- e. Chlorthalidone

1660. A patient, who has been taking acetylsalicylic acid, developed hemorrhages of mucous membranes. This phenomenon is associated with:

- a. Decreased absorption in the gastrointestinal tract
- b. Increased absorption in the gastrointestinal tract
- c. Inhibition of the prothrombin synthesis
- d. Disorder of protein binding
- e. Changed volume of distribution

1661. Simultaneous application of doxycycline hydrochloride and oral contraceptive causes:

- a. Reduction of the antibacterial effect of doxycycline
- b. -

- c. Increase of oral contraceptives effectiveness
- d. Increase of the antibacterial effect of doxycycline
- e. Reduction of oral contraceptives effectiveness**

1662. To treat iron-deficiency anemia the following drug is usually prescribed:

- a. Heparin
- b. Vicasol (Menadione)
- c. Furagin (Furazidinum)
- d. Corticosteroids
- e. Ferroplex**

1663. A 70-year-old patient with stenocardia claims that the pharmacy had sold him a drug that relieved an attack of stenocardia but instead caused an acute bursting headache. What antihypertensive drug is this side-effect typical of?

- a. Nitrosorbid**
- b. Nifedipine
- c. Metoprolol
- d. Trimetazidine
- e. Amlodipine

1664. Presence of nitrate radical in metronidazole structure can be confirmed by reduction of nitrate radical to amino group with production of:

- a. Thiochrome
- b. Indophenol
- c. Azo dye**
- d. Iodoform
- e. Murexide

1665. Xycaine quantitative content can be determined by means of argentometry (back titration). What indicator is required by this method?

- a. Sodium eosinate
- b. Starch
- c. Potassium chromate
- d. Iron (III) ammonium sulphate**
- e. Bromphenol blue

1666. Commercial and financial activity of a pharmacy involves using returnable tare. Which of the following containers are returned to the supplier?

- a. Paper boxes
- b. Packaging materials
- c. Metal cylinders**
- d. Glass-stoppered bottles
- e. Glassware

1667. A pharmacy has received goods from a warehouse, which were delivered by the warehouse transport. Therefore, goods receipt requires the following accompanying document:

- a. Financial statement of the supplier
- b. Specifications to the contract of delivery
- c. All of the listed
- d. Motor waybill**
- e. Contract of delivery

1668. Specialists of a pharmaceutical enterprise confirm the identity of Cassia acutifolia herbal raw material. During reaction with alkali it developed cherryred coloring. What substances were identified?

- a. Tannins
- b. Glycosides
- c. Iridoids

d. Anthraquinones

e. Alkaloids

1669. Number of mediators that pharmaceutical goods pass on their way from manufacturer to consumer is called:

a. Width of distribution channel

b. Level of distribution channel

c. Length of distribution channel

d. Volume of distribution channel

e. -

1670. Menthol has anesthetic and antiseptic effect. What plant is the source of menthol?

a. Folia Salviae

b. Folia Absinthii

c. Folia Uvae ursi

d. Folia Eucalypti

e. Folia Menthae piperitae

1671. The main method of quantitative determination of corticosteroids is:

a. Cerimetry

b. Potentiometry

c. Spectrophotometry

d. Argentometry

e. Acidimetry

1672. The thyme grass is used for the production of herbal medical products for the treatment of respiratory tract infections. Under the State Pharmacopoeia of Ukraine the herbal raw 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. Atropine and hyoscyamine

b. Apigenin and luteolin

c. Arbutin and methyl arbutin

d. Thymol and carvacrol

e. Quercetin and rutin

1673. A pharmacy offers to its customers a chance to measure their blood pressure. What type of goods is it?

a. Nondurable goods

b. Convenience goods

c. Service

d. Specialty goods

e. Unsought goods

1674. Several independent mediators work in resale of medical equipment. What group of mediators includes persons and legal entities that specialize in sales of durable goods that require considerable after-sales service?

a. Commission agent

b. Broker

c. Dealer

d. Consignee

e. Agent

1675. Propellants are used in aerosols production. Specify the function of propellants:

a. Stabilization

b. Action prolongation

c. Create pressure in the package

d. Emulsification

e. Dispersion

1676. The chemical name of 2,2(diphenylmethoxy)-N,N-dimethylethanamine hydrochloride corresponds with the following medicinal substance:

- a. Lidocaine hydrochloride
- b. Ethylmorphine hydrochloride
- c. Diphenhydramine hydrochloride**
- d. Ciprofloxacin hydrochloride
- e. Papaverine hydrochloride

1677. An analytical chemist should use the following solution to identify sodium-containing substances:

- a. Sodium citrate
- b. Potassium permanganate
- c. Potassium pyroantimonate**
- d. Potassium carbonate
- e. Barium hydroxide

1678. Calcium gluconate is being tested for presence of admixtures of saccharose and reducing sugars with copper-tartrate reagent. If these admixtures are present the substance colors:

- a. White
- b. Red**
- c. Green
- d. Blue
- e. Turquoise

1679. A 45-year-old man has been taking long-acting nitrates twice a day for a year. Currently the decrease in effectiveness of the pharmacotherapy is being observed. What side-effect can be suspected in the first place?

- a. Impairment of coronary circulation
- b. Development of nitrate tolerance**
- c. Progressing coronary atherosclerosis
- d. Progressing ischemic heart disease
- e. Myocardial infarction

1680. A 43-year-old patient was delivered to an admission room with renal colic attack. What group of drugs would be the most effective during the attack?

- a. Antacids
- b. Hepatoprotectors
- c. Antispasmodics**
- d. Antibiotics
- e. Cholagogues

1681. What antibiotic has beta-lactam cycle in its structure?

- a. Lincomycin hydrochloride
- b. Benzylpenicillin potassium salt**
- c. Chloramphenicol
- d. Doxycycline hyclate
- e. Streptomycin sulfate

1682. Incoming medicines inspection is 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 keep a roster of incoming medicines
- c. -
- d. To check the pharmacy stock for low-quality or fake medicines
- e. To draw up conclusions regarding inspection of incoming medicines

1683. A pharmacist has prepared a liquid mixture. What component was added last into the vial?

- a. Purified water

b. 20% sodium bromide solution

c. Simple syrup

**d. Tincture of valerian**

e. Potassium bromide

1684. Snake venom-based drugs are widely applied in treatment of locomotor apparatus diseases. Main components of these venoms are:

**a. Toxic proteins**

b. Cardiac glycosides

c. Phenol-alcohols

d. Glucosinolates

e. Alkaloids

1685. A 25-year-old man is diagnosed with acute pyelonephritis of moderate severity. What drugs should be prescribed for etiologic therapy?

**a. Antimicrobial agents**

b. Nonsteroidal antiinflammatory drugs

c. Antiarrhythmic drugs

d. Anticholinesterase drugs

e. Glucocorticoids

1686. The chemical name of 2benzyl-1H-benzimidazole hydrochloride corresponds with the following medicinal substance:

**a. Dibazol (Bendazolum)**

b. Indometacin

c. Vicasol (Menadione)

d. Phenazepam

e. Omeprazole

1687. Pharmacy premises can be divided into service rooms and workrooms. Name the workroom for storage of medical products:

**a. Material storage room**

b. Washing room

c. Distillation room

d. Aseptic block

e. Shop floor

1688. Identification of potassium iodide requires performing an oxidation reaction in acid medium, which produces free iodine that colors chloroform layer. What reagent is used for such a reaction?

**a. Sodium nitrite**

b. Barium chloride

c. Ammonium oxalate

d. Sodium carbonate

e. Silver nitrate

1689. 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. Blue coloring

c. Brown coloring

d. Pink coloring

e. Yellow coloring

1690. The cholagogue derived from Rosa canina fruit is used in treatment of liver and gallbladder diseases. Name this drug:

a. Allochol

b. Altan

c. Chophytol

d. Phytolyt

**e. Cholosas**

1691. According to the rules in force, workrooms should regularly undergo humid disinfection. How often should the floors be washed?

a. No less than twice in a month

**b. No less than once in a shift**

c. No less than once in a week

d. No less than twice in a week

e. No less than thrice in a week

1692. Senna (cassia) foliage contains anthracene derivatives. Their presence can be confirmed by qualitative reaction with:

a. Iron ammonium alum

b. Molisch's reagent

**c. Alkali**

d. Iron (II) sulfate

e. Fehling's reagent

1693. A private pharmacy has received a supply of a drug with 2,3-dihydro-2methyl-1,4-naphthoquinone-2-sulfonate sodium as an active ingredient. Name this drug:

**a. Vicasol (Menadione)**

b. Riboflavin

c. Cocarboxylase hydrochloride

d. Ergocalciferol

e. Rutin

1694. 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. Fresh frozen plasma

b. Penicillin

**c. Prednisolone**

d. Rheopolyglukin (Dextran)

e. Haemodes

1695. 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. Shipping department

b. Marketing department

**c. Supply department**

d. Stores development

e. Finance department

1696. To prepare eyedrops with antibiotic a dispensing chemist has been using flowing steam sterilization under 100°C for 30 minutes. What antibiotic allows for such sterilization?

a. Biomycin

b. Erythromycin

c. Sodium benzylpenicillin

d. Streptomycin sulfate

**e. Levomycetin (Chloramphenicol)**

1697. 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. Barium chloride

b. Calcium chloride

- c. Activated carbon
- d. Alcoholic iodine solution

**e. Nitroglycerine solution**

1698. Gum is a polysaccharide substance that contains calcium and magnesium salts of uronic acids and neutral monosaccharides. By solubility arabin, bassorin, and cerasin derivatives can be distinguished. What gum is insoluble in cold water?

**a. Cherry**

- b. Tragacanth
- c. Plum
- d. Apricot
- e. Acacia

1699. A pharmacy prepares a drug that contains a high-molecular compound with unlimited swelling ability. Name this material:

- a. Starch
- b. Protargol
- c. Methylcellulose
- d. Gelatine

**e. Pepsin**

1700. The Financial Report 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. 40 000 UAH
- b. 30 000 UAH

**c. 5 000 UAH**

- d. 15 000 UAH
- e. 35 000 UAH

1701. 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. 1 years
- b. Indefinitely
- c. 3 years
- d. 2 years

**e. 5 years**

1702. A man with gastric ulcer is prescribed anti-Helicobacter pylori therapy. On the 3rd day the patient developed black coloring of feces. What had caused such changes?

- a. Tetracycline
- b. Tinidazole
- c. Omeprazole
- d. Metronidazole

**e. Bismuth subcitrate**

1703. A certain drug can be quantitatively assessed by means of direct alkalimetry in glycerine, mannitol, or other polyhydric alcohol medium. This drug is:

- a. Acetylsalicylic acid
- b. Boric acid**
- c. Salicylic acid
- d. Benzoic acid
- e. Glutaminic acid

1704. Hydrogen sulfide is being produced in the process of dry pyrolysis of a certain sulfanilamide drug. Name this drug:

- a. Sulfacil sodium

**b. Norsulfazole**

- c. Soluble streptocide
- d. Streptocide
- e. Sulfadimezinum (Sulfadimine)

1705. 1,8-cineole is a bactericidal component of essential oil. Specify the medicinal herb that is grown in Ukraine and contains 1,8-cineole in its essential oil:

**a. Salvia officinalis**

- b. Juniperus communis
- c. Origanum vulgare
- d. Inula helenium
- e. Eucalyptus globulus

1706. The Dobropharma pharmacy manager makes plans for standard stock of various groups of goods, based on their purpose. Convenience goods belong to the following group:

- a. Seasonal accumulation
- b. Single delivery
- c. Specific demand
- d. Prior delivery

**e. Current demand**

1707. Accounts receivable develop in the process of pharmaceutical company work. Specify where in the balance book they are recorded:

- a. Debit
- b. Liabilities

**c. Assets**

- d. Credit
- e. Account

1708. A pharmacy has received a prescription for colloid solution. Name this solution:

- a. Nonaqueous solution
- b. Sodium chloride solution

**c. Collargol solution**

- d. 5% glucose solution
- e. Burow's solution

1709. A technological controller uses Marquis reagent to identify the substance of acetylsalicylic acid after acid hydrolysis. Positive effect of the reaction would be indicated by the following coloring:

- a. Green
- b. Violet
- c. Blue
- d. Yellow

**e. Pink**

1710. A 3-year-old child is intolerant to paracetamol. What antipyretic drug can be taken instead?

- a. Naproxen
- b. Diclofenac sodium
- c. Acetylsalicylic acid
- d. Nimesulide

**e. Ibuprofen**

1711. A patient with angina pectoris takes long-acting nitrates. Consult him what side-effect is the most common for these drugs:

- a. Nausea
- b. Diarrhea
- c. Constipation
- d. Headache**
- e. Vomiting



1712. 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 Menthae piperitae
- b. Folia Betulae
- c. Folia Eucalypti**
- d. Folia Melissaе
- e. Folia Absinthii

1713. According to the State Pharmacopoeia of Ukraine quantitative content of salicylic acid is to be determined by means of:

- a. Alkalimetry**
- b. Complexometric titration
- c. Argentometry
- d. Acidimetry
- e. Nitritometric titration

1714. A pharmacist prepares a chamomile flowers infusion. Specify the proportion of raw material to infusion:

- a. 1:10**
- b. 1:50
- c. 1:20
- d. 1:400
- e. 1:30

1715. 50 ml of injection solution has been made in a pharmacy. Specify the process of solution sterilization:

- a. 120°C - 8 minutes**
- b. 160°C - 15 minutes
- c. 110°C - 15 minutes
- d. 140°C - 12 minutes
- e. 180°C - 30 minutes

1716. An important indicator of business activity is profitability of a business. Specify the indicators that can be used to measure the profitability:

- a. Liquidity/solvency
- b. Profit/turnover**
- c. Turnover/income
- d. Turnover/production cost
- e. Income/turnover

1717. Genetically induced adverse reaction to a certain drug is caused by various enzyme defects. Name this reaction:

- a. Idiosyncrasy**
- b. Steal syndrome
- c. Dysbiosis
- d. Rebound effect
- e. Withdrawal syndrome

1718. Difference between the retail price of products sold and the margin determines:

- a. Income
- b. Breakeven
- c. Markup
- d. Margin
- e. Production cost**

1719. A pharmaceutical company produces essential oils via a method that consists of essential oil transfer into gas phase followed by its absorption with fats and then its extraction with alcohol. Name this method:

**a. Enfleurage**

- b. Extraction
- c. Dynamic sorption
- d. Hydrodistillation
- e. Compression

1720. 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. Dragendorff's test**

**b. Legal's test**

- c. Mayer's test
- d. Stahl's reaction
- e. Reaction of sublimation

1721. A 43-year-old woman has come to a pharmacy with complaints of sharp headache in the occipital area, palpitations, "visual snow" in her eyes, nausea; her BP is 180/110 mm Hg. These symptoms correspond with:

- a. Cervical osteochondrosis
- b. Acute conjunctivitis
- c. Migraine attack
- d. Exertional angina pectoris attack

**e. Hypertensive crisis**

1722. Medicinal substance had been received for chemical analysis. Biuret test was performed for identification. Name this substance:

- a. Dipyrone (Metamizole)
- b. Diphenhydramine
- c. Iodoform
- d. Benzoic acid

**e. Bromisoval**

1723. A patient, who has undergone treatment for community-acquired pneumonia, complains of hearing impairment. What antibacterial drug could result in such a side-effect?

**a. Clarithromycin**

**b. Gentamicin**

- c. Cefazolin
- d. Amoxicillin/clavulanate
- e. Ciprofloxacin

1724. A 36-year-old woman with herpetic rash on her lips has come to a pharmacy. Recommend her a drug for topical treatment:

**a. Amikacin**

**b. Acyclovir**

- c. Levofloxacin
- d. Fluconazole
- e. Metronidazole

1725. A pharmaceutical company produces mint tincture. Technological process of making this tincture requires it to be made:

- a. With 48% alcohol in 1:2 proportion
- b. With 70% alcohol in 1:15 proportion
- c. With 70% alcohol in 1:5 proportion
- d. With 70% alcohol in 1:10 proportion

**e. With 90% alcohol in 1:20 proportion**

1726. Several species of Polygonum genus are used in medicine. One of these species has rootstocks rich in tanning agents, which are used to treat diarrhea. Name this species:

- a. Polygonum hydropiper
- b. Polygonum aviculare
- c. Polygonum alpinum
- d. Polygonum bistorta**
- e. Polygonum persicaria

1727. 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. Decreased blood pressure
- b. Ototoxicity**
- c. Vomiting
- d. Red coloring of urine
- e. Increased blood pressure

1728. Considering thermolability of most animal-derived injection preparations, they are sterilized by means of:

- a. Filtration through membrane**
- b. High frequency current
- c. Ultrasound
- d. In autoclave chamber with highpressure saturated steam
- e. Addition of buffer solutions

1729. Sodium and potassium oxides are introduced into the ampoule glass to:

- a. Decrease its melting point**
- b. Increase its chemical stability
- c. Increase its thermal stability
- d. Increase its dimming ability
- e. Increase its mechanical stability

1730. Hierarchic structure of the Agapetus pharmacy management foresees that authority is being passed on directly from the pharmacy manager to the employees. Specify this type of authority:

- a. Functional
- b. Divisional
- c. Matrix
- d. Line**
- e. Line and staff

1731. Several cholesterol gallstones are detected in the gallbladder of a woman. Choose the drug to dissolve and excrete the stones:

- a. Loperamide
- b. Platyphyllin
- c. Papaverine
- d. Domperidone
- e. Ursodeoxycholic acid**

1732. What indicator is used in iodometry for quantitative determination of caffeine in caffeine and sodium benzoate?

- a. Starch**
- b. Eriochrome black
- c. Bromthymol blue
- d. Methyl orange
- e. Potassium chromate

1733. 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. Invoice
- b. Cash income order
- c. Cash expense order**

- d. Receipt
- e. Remains unregistered documentarily

1734. A pharmaceutical company produces tablets. Tableting by means of direct compression requires:

- a. Application of hydraulic press
- b. No prior granulation**
- c. Formation of masses
- d. Prior granulation
- e. Prior homogenization

1735. A pharmaceutical company produces aromatic waters. Peppermint water should be prepared in the following proportion:

- a. 1:1000**
- b. 1:4000
- c. 1:1
- d. 1:10
- e. 1:2000

1736. A young mother has come to a pharmacy to buy an antipyretic drug for her 3-month-old infant. What dosage form would you choose for the infant?

- a. Suppositories**
- b. Capsules
- c. Lozenges
- d. Spray
- e. Tablets

1737. The management plans to open a new pharmacy in one of the local villages. Such activity can be identified as:

- a. Conglomerate diversification
- b. Horizontal diversification
- c. Vertical integration
- d. Horizontal integration
- e. Growth strategy**

1738. To minimize business risks, the board of directors of a pharmaceutical company decides to expand into a market of plant protection products. Such approach to risk management is called:

- a. Intensification
- b. Insurance
- c. Diversification**
- d. Integration
- e. Consolidation

1739. Publicly-owned Isotope factory is the only manufacturer of radiopharmaceuticals in Ukraine. What type of distribution is characteristic of radioactive drugs?

- a. Sample
- b. Bulk
- c. Selective
- d. Intensive
- e. Exclusive**

1740. 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. Ranitidine
- b. Aluminium-containing drugs**
- c. Calcium carbonate
- d. Magnesium-containing drugs
- e. Simethicone

1741. 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. Tocopherol acetate
- b. Vicasol (Menadione)
- c. Ascorbic acid
- d. Retinol acetate**
- e. Ergocalciferol

1742. A pharmaceutical company produces Lugol's iodine solution. By type of solvent this solution belongs to the following group:

- a. Chloroform solutions
- b. Glycerine solutions**
- c. Oil solutions
- d. Alcohol solutions
- e. Water solutions

1743. 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. Acceleration of metabolism and excretion
- b. Antibiotic malabsorption**
- c. Inhibition of hepatic microsomal enzymes
- d. Relative overdosage
- e. Mutual potentiation

1744. Medicinal dyes should be stored in a special cabinet. Which of the listed medical products is a dye:

- a. Brilliant green**
- b. Ethyl alcohol
- c. Ascorbic acid
- d. Glucose
- e. Hydrogen peroxide

1745. Calendula Ointment is placed on the shelf next to Dr. Theiss Calendula Ointment. What approach to the shelf layout is used in this pharmacy?

- a. Seasonality
- b. Among competitors**
- c. By package size
- d. Corporate block layout
- e. Doubling product facings

1746. A certain herbal raw material is used to make Flamin cholagogue. Name this material:

- a. Crataegi flores
- b. Helichrysi arenarii flores**
- c. Violae herba
- d. Meliloti herba
- e. Tanaceti flores

1747. A pharmaceutical warehouse has received a batch of herbal raw material hawthorn flowers. Merchandise analysis revealed in one of the sacks significant amount of bird-cherry flowers besides the hawthorn. What quality assessment of the herbal raw material should be performed?

- a. Extractive values
- b. Acceptable admixtures**
- c. Moisture content
- d. Mineral admixtures
- e. Ash values (Total ash)

1748. A powder containing a substance with specific weight has been prepared in a pharmacy. Name

this substance:

- a. Sodium bicarbonate
- b. Basic bismuth nitrate**
- c. Bolus alba
- d. Sugar
- e. Talcum

1749. 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. Panaxosides
- b. Ginkgosides
- c. Purpurea glycosides
- d. Glucofrangulins**
- e. Lanatosides

1750. Weibel's liquid is necessary to stabilize the solution of a certain substance. Name this substance:

- a. Sodium chloride
- b. Magnesium sulfate
- c. Novocaine
- d. Potassium chloride
- e. Glucose**

1751. Strategic planning of pharmaceutical companies consists of several consecutive stages. What stage is the final one?

- a. Setting goals and tasks
- b. Analysis of organisation's internal strength and weaknesses
- c. Choice of strategy
- d. Strategy assessment**
- e. Environment assessment and analysis

1752. What tablet coating protects stomach from harmful influence of active ingredients?

- a. -
- b. Intestinally absorbed**
- c. Gastrically absorbed
- d. Water-soluble
- e. Fat-soluble

1753. A pharmacy supplies the surgical ward of a hospital. What document enables the dispensing chemist to supply the goods:

- a. Receipt log book
- b. Purchase order**
- c. Report on the movement of packaging
- d. Product revaluation notice
- e. Consolidated register

1754. A 68-year-old man has been prescribed a hypolipidemic agent as a part of his combination therapy for ischemic heart disease. Name this drug:

- a. Atorvastatin**
- b. Lisinopril
- c. Hydrochlorothiazide
- d. Nifedipine
- e. Nitroglycerine

1755. According to the law regulating labour remuneration, the businesses must establish their compensation plan in the following document:

- a. Job description

**b. Collective agreement**

- c. Decree
- d. Contract of delivery
- e. Statement

1756. If vehicle is not specified, an eye ointment should be prepared with the following sterile vehicle:

- a. Lanolin: vaseline - 1:1
- b. 10 parts of anhydrous lanolin - 90 parts of vaseline For Eye Ointments**
- c. 40 parts of anhydrous lanolin - 60 parts of vaseline For Eye Ointments
- d. Vaseline For Eye Ointments
- e. 30 parts of lanolin - 70 parts of vaseline

1757. What factor enables the extraction of maximum amount of alkaloids from the herbal raw material?

- a. Intense heating
- b. Certain value of the solution pH**
- c. Herbal raw material should be fresh
- d. Preliminary processing of raw materials for their saturation with 96% alcohol
- e. Slight heating

1758. 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. Industrial activity
- b. Charity
- c. Commercial activity
- d. Financial activity
- e. Social responsibility**

1759. Complex drug product Urolesan is a litholytic, antispasmodic, and diuretic agent. It contains ethanolic extract of:

- a. Origanum vulgare**
- b. Rhododendron tomentosum
- c. -
- d. Matricaria chamomilla
- e. Thymus serpyllum

1760. To identify pilocarpine hydrochloride it is necessary to use reaction with sodium nitroprusside in an alkaline medium (Legal's test). Resulting cherryred coloring confirms presence of the following in the pilocarpine structure:

- a. Methyl group
- b. Lactonic ring**
- c. Methylene group
- d. Imidazole ring
- e. Chloride ions

1761. When dispensing an antacid and ofloxacin in tablets, the dispensing chemist warned the customer that these drugs should be taken separately with 2hour interval in between. Simultaneous taking of both drugs:

- a. Increases ofloxacin absorption
- b. Decreases antacid effectiveness
- c. Increases risk of dysbiosis
- d. Decreases ofloxacin absorption**
- e. Increases antacid effectiveness

1762. A control laboratory needs to analyze streptomycin powder for injections. To identify it according to the State Pharmacopoeia of Ukraine 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. Ninhydrin test
- b. Biuret test
- c. Thiochrome test

**d. Maltol test**

- e. Vitali-Morin reaction

1763. A substance was received for analysis. The substance is a round seed 1-1,8 mm in diameter, yellow with bluish tint. When mashed with water, emits characteristic irritant odor; is sharp and acrid to taste. The raw material can be identified as:

- a. Nigella seeds

**b. Mustard seeds**

- c. Plantago psyllium seeds
- d. Flax seeds
- e. Fenugreek seeds

1764. Bank is a financial mediator in pharmacy's payments. Payment of taxes withheld from the employees' salary into budget requires the following document:

- a. Check payable in account
- b. Cash register receipts
- c. Cash order

**d. Payment order**

- e. Accounting form

1765. A powder with a hard to disintegrate substance has been made in a pharmacy. Specify this substance:

- a. Sodium chlorides
- b. Talcum
- c. Sugar

**d. Camphor**

- e. Osarsolum (Acetarsol)

1766. Polyethylene oxide base belongs to the following group:

- a. Amphiphilic
- b. Hydrophobic

**c. Hydrophilic**

- d. Emulsion
- e. Fat

1767. Choose the solvent necessary to prepare concentrated solution of sodium bicarbonate in a pharmacy:

- a. Peach-kernel oil
- b. Vaseline
- c. Ethanol

**d. Purified water**

- e. Chloroform

1768. During storage, suspension instability manifests itself as:

- a. Flocculation of particles
- b. Caking of particles
- c. Change of particles shape

**d. Sedimentation of particles**

- e. Dissolution of particles

1769. Specify the drugs recommended for prevention and correction of dysbiotic problems caused by antibiotic therapy:

- a. Cholagogues

**b. Probiotics**

- c. Prokinetics



- d. Antacids
- e. Uroseptics

1770. The documents of a pharmaceutical company are being received and sent in a centralized manner; the documents are stored, drawn-up, registered, and assembled into cases both in the Office Desk of the company and the company's divisions. Specify this type of records management system:

- a. Decentralized
- b. Centralized
- c. Mixed**
- d. Referent
- e. -

1771. Employees of a wholesale pharmaceutical company have undergone an assessment for their compliance with the requirements of their respective positions. Specify the type of human resources assessment:

- a. Concurrent
- b. Preliminary
- c. Concluding**
- d. Financial
- e. -

1772. 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. Economical
- c. Technological
- d. Legal
- e. Political

1773. What means of demand stimulation can be applied by pharmacy management among its employees?

- a. Coupons
- b. -
- c. In-store advertising
- d. Layout of medical products in shopwindows and on shelves
- e. Bonuses**

1774. A system of indicators characterizes financial and business activity of an organization and the state of its assets and sources on the certain day in the monetary unit. Name this system:

- a. Business transactions log book
- b. Turnover balance sheet
- c. Receipts and expenditures report
- d. Balance sheet**
- e. Double entry

1775. According to the current Ukrainian legislation all drugs are divided into two categories: prescription and nonprescription (over-the-counter). Which one of the listed drugs requires no prescription?

- a. Ketamine, 5% infusion solution, 2 ml №10
- b. Ascorbic acid, 500 mg №30**
- c. Clonidine, ampoules, 1 ml of 0,01% solution №10
- d. Tramadol, capsules, 0,05 №10
- e. Phenobarbital, tablets, 100 mg №6

1776. ?1. To improve iodine solubility in the purified water, iodine must be:

- a. Reduced to fine powder
- b. Dissolved in the boiling water

c. Dissolved in the saturated solution of potassium iodide

d. Dispersed with glycerine

e. Comminuted with alcohol

1777. What herbal bioactive substances yield a positive reaction with ferric ammonium alum solution?

a. Bitters

b. Fatty oils

c. Saponins

d. Polysaccharides

e. Tannins

1778. A pharmaceutical company produces a medicine under the brand name "Corglyconum". What herbal raw material is used in preparation of this drug?

a. Wormwood grass

b. Plantain foliage

c. Buckthorn bark

d. Lily-of-the-valley grass

e. Dandelion roots

1779. A pharmacist prepares fat-based suppositories by pouring. Specify the type of fatty vehicle in this case:

a. Wax

b. Spermaceti

c. Vaseline (petroleum jelly)

d. Cocoa butter

e. Butyrol

1780. 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. Dormancy

b. Sap flow

c. Flowering

d. Fruiting

e. Defoliation

1781. Drugs derived from *Rauvolfia serpentina* roots are used in hypertension treatment. Authenticity of *Rauvolfia serpentina* herbal raw material can be confirmed by its content of:

a. Hyoscyamine

b. Atropine

c. Reserpine

d. Vinblastine

e. Adonitoxin

1782. What concept can be described as "...an area of exchange with its characteristic system of economic relations between goods manufacturers and consumers"?

a. Marketing

b. Agreement

c. Management

d. Market

e. Sales

1783. There are various groups of adjuvants used in tablet production. What is the function of excipients?

a. To improve the flowability of granular material

b. To improve the taste

c. To create necessary adhesive force between particles

d. To improve disintegration

**e. To make pills of a certain weight**

1784. Various types of dryers can be used for granule dehumidification. Specify the type of "СП-30" dryer:

**a. Fluidized bed dryer**

- b. Infrared dryer
- c. Forced air dryer
- d. Silica gel dryer
- e. Freeze dryer

1785. 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. Alcohol solution of  $\beta$ -naphthol
- b. Thymol solution
- c. Ammonium hydroxide
- d. Concentrated sulfuric acid

**e. Lugol's solution**

1786. 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. Hydrochloric acid
- c. Cysteine
- d. Ascorbic acid
- e. Sodium sulfate

1787. The analytical laboratory received calcium chloride. What volumetric solution should be used for quantitative determination of this medicinal substance?

- a. Hydrochloric acid
- b. Potassium bromate

**c. Sodium edetate**

- d. Potassium permanganate
- e. Sodium hydroxide

1788. 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. Phenolphthalein
- b. Methyl orange
- c. Methyl red

**d. Starch**

- e. Potassium chromate

1789. A pharmacist prepares cocoa butterbased 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 alcohol
- b. Dissolve in minimal quantity of purified water**
- c. Dissolve in molten cocoa butter
- d. Dissolve in Dimexid (Dimethylsulfoxide)
- e. Dissolve in vaseline oil

1790. A pharmacist needs to prepare eyedrops with pilocarpine hydrochloride. Specify the optimal isotonic agent in this case:

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

1791. 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. Every year
- b. Once every 5 years**
- c. Once every 3 years
- d. Once every 2 years
- e. Once every 10 years

1792. 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. 0.3 g
- b. 0.5 g
- c. 0.25 g**
- d. 0.2 g
- e. 0.1 g

1793. 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. 20%
- b. 5%
- c. 1%
- d. 10%**
- e. 15%

1794. 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. Length and quantity of the suppositories
- c. Quantity and vehicle of the suppositories
- d. Diameter and vehicle of the suppositories
- e. Diameter and quantity of the suppositories

1795. 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. Contractual
- b. Administered
- c. Horizontal
- d. Corporate
- e. Multichannel**

1796. 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. Moisture
- b. Pyrogenic substances**
- c. Sulfates
- d. Redox substances
- e. Chlorides

1797. A pharmacy received an infusion formulation. What herbal raw material can be used to make this dosage form?

- a. Buckthorn bark
- b. Valerian roots with rhizomes**
- c. Oak bark
- d. Rhubarb roots
- e. Arrow-wood bark

1798. Among various types of tablet external layers there are enterosoluble coatings. Where in the body are they dissolved?

- a. Oral cavity
- b. Stomach
- c. Intestine**
- d. Rectum
- e. Esophagus

1799. A certain type of herbal raw material is being harvested in spring during sap flow. Specify this material:

- a. Bark**
- b. Buds
- c. Inflorescences
- d. Roots
- e. Flowers

1800. A pharmacist has prepared an eyedrops vehicle. What method of sterilization should be chosen in this case?

- a. Dry heat**
- b. Pasteurization
- c. Membrane filtration
- d. Ultraviolet irradiation
- e. Flowing steam

1801. 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. Optical density
- b. Relative density
- c. Distribution coefficient
- d. Specific optical rotation**
- e. Refractive index

1802. Specify the control methods aimed at detecting mechanical impurities in parenteral solutions:

- a. NMR and UV-visible spectroscopy
- b. Visual optical**
- c. Amperometric
- d. Limulus test
- e. Gravitational

1803. To stabilize the suspension a pharmacist has used potassium soap. What substance does this suspension contain?

- a. Basic bismuth nitrate
- b. Camphor
- c. Phenyl salicylate
- d. Menthol
- e. Sulfur**

1804. 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. Nitritometric titration
- b. Alkalimetry
- c. Acidimetry
- d. Complexometric titration**
- e. Bromatometry

1805. An analytical chemist investigates a 3% hydrogen solution. What reagent is recommended by

the State Pharmacopoeia of Ukraine for identification of this substance?

- a. Zinc oxide
- b. Potassium chromate**
- c. Magnesium sulfate
- d. Sodium chloride
- e. Calcium chloride

1806. A pharmacist has prepared a compound ointment. What is the correct sequence of its preparation?

- a. Emulsion - solution - suspension
- b. Suspension - solution - emulsion**
- c. Emulsion - suspension - solution
- d. Solution - emulsion - suspension
- e. Solution - suspension - emulsion

1807. Benzoic acid is known to have antiseptic properties. To identify this acid the following should be used:

- a. FeCl<sub>3</sub>**
- b. K<sub>2</sub>[HgI<sub>4</sub>]
- c. KMnO<sub>4</sub>
- d. K<sub>2</sub>CrO<sub>4</sub>
- e. [NH<sub>4</sub>]<sub>2</sub>C<sub>2</sub>O<sub>4</sub>

1808. 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 increase, remarketing
- c. Demand stimulation, promotional marketing
- d. Demand decrease, demarketing
- e. Demand leveling, synchromarketing

1809. To determine the quantity of wildgrowing 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. Visually
- c. Geodesically
- d. Model sample method
- e. Permanent quadrat method

1810. To prepare decoctions with the volume of 1000-3000 ml, they should be infused in a boiling water bath for:

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

1811. What medicinal agents must be manufactured in aseptic conditions followed by thermal sterilization with high-pressure saturated steam?

- a. Liquid ingestible antibiotics
- b. 2% collargol solution for infants
- c. Injection solutions with thermolabile substances
- d. Concentrated solutions for burette systems
- e. Injection solutions with thermostable substances**

1812. 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  $+10^{\circ}$  to  $+13^{\circ}$
- b. From  $-102^{\circ}$  to  $-105^{\circ}$
- c. From  $-48^{\circ}$  to  $-51^{\circ}$
- d. From  $+50^{\circ}$  to  $+56^{\circ}$
- e. From  $+0.2^{\circ}$  to  $-0.2^{\circ}$**

1813. 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. Talcum
- b. Starch
- c. Streptocid**
- d. Zinc oxide
- e. Bolus alba

1814. A pharmacist prepares suppositories by pouring. Name the coefficient for substitution of fatty vehicle with glycerinated gelatin vehicle:

- a. 1.20
- b. 1.11
- c. 1.25
- d. 1.21**
- e. 1.31

1815. Presence of phenolic hydroxyl in the structure of pyridoxine hydrochloride can be confirmed by application of the following solution:

- a. Silver nitrate
- b. Sodium nitrite
- c. Potassium permanganate
- d. Sodium sulfate
- e. Iron (III) chloride**

1816. Tyndallization is used at a pharmaceutical factory as a sterilization method for thermolabile substances. Essentially this method consists of:

- a. Sterilization with flowing steam at  $100^{\circ}\text{C}$
- b. Autoclaving at  $119-121^{\circ}\text{C}$  with pressure at 1.0-1.1 atm
- c. Triple heating of solution to  $40-60^{\circ}\text{C}$  with 24-hour-long intervals in between for thermostating**
- d. Sterilization with dry heat at  $180-200^{\circ}\text{C}$  for a lengthy period of time
- e. Sterilization with high-frequency and microwave frequency current

1817. A pharmacy received a prescription for compound powders containing a coloring agent. Which of the powder components given below is a colouring agent?

- a. Silver proteinate (Protargol)
- b. Ethacridine lactate (Rivanol)**
- c. Sulfanilamide
- d. Camphor
- e. Bismuth nitrate

1818. 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. Ammonium
- b. Lithium
- c. Potassium
- d. Sodium
- e. Silver**

1819. 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. Marketing
- b. Trademark
- c. Advertisement**
- d. Communications
- e. Supply

1820. What pharmacotherapeutic characteristic of a medicine allows its classification as over-the-counter drug?

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

1821. A process dealing with drawing the documents, their processing, circulation and storage is called records management. If all documents circulate through one organization center, - office desk, - then such system of records management is called:

- a. Decentralized
- b. Referent
- c. Specialized
- d. Centralized**
- e. Mixed

1822. Standardization of a certain herbal raw material is done by calculating its alkaloid content in terms of hyoscyamine. Name this herbal raw material:

- a. Herba Thermopsisidis lanceolatae
- b. Fructus Capsici
- c. Radices Berberidis
- d. Herba Chelidonii
- e. Folia Belladonnae**

1823. 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. Financial operating report of the pharmacy
- b. Cash receipt order**
- c. Goods received record book by groups of goods
- d. Goods report (Inventory change report)
- e. Goods received record book by item and supplier

1824. 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. Bonus
- b. One-off payment
- c. Financial aid
- d. Basic pay**
- e. Increment

1825. 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. Directive
- b. Democratic
- c. Liberal**
- d. Authoritarian



e. Autocratic

1826. 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. Delegation
- b. Planning
- c. Organization
- d. Control

e. Motivation

1827. 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. Indirect
- b. Direct
- c. Mixed
- d. Combined
- e. Mediated

1828. 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. Turbo extraction
- b. Steeping
- c. Maceration
- d. Remaceration

e. Percolation

1829. The following substance is used as an extractant in production of liquid extracts:

- a. Dichloroethane
- b. Acetone
- c. Ethanol
- d. Chloroform
- e. Glycerine

1830. 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. Panangin
- b. Riboxin (Inosine)
- c. Metacycline
- d. Naphthyzin (Naphazoline)

e. Nitroglycerine

1831. 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. Democratic
- b. Liberal
- c. Direct

d. Authoritarian

e. Collective

1832. Valerian roots and rhizomes are processed in the phytochemistry workshop to produce tinctures and thick extracts that are the components of combined sedatives. Name the group of bioactive compounds that includes valerian valepotriates, - valtrate, acevaltrate, and dihydrovaltrate:

- a. Alkaloids
- b. Essential oils
- c. Iridoids**
- d. Polysaccharides
- e. Saponins

1833. During limit test for aluminium admixture, the State Pharmacopoeia of Ukraine recommends to use the following solution as the basic reagent:

- a. Sodium tetraphenylborate
- b. Sodium hypophosphite
- c. Barium chloride
- d. Hydroxyquinoline**
- e. Thioglycolic acid

1834. 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. Alkaloids
- b. Tannins
- c. Anthraquinones**
- d. Glycosides
- e. Iridoids

1835. 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. Personal sale
- c. Salesmen-oriented sales promotion
- d. Public relations, sponsorship
- e. Middlemen-oriented sales promotion

1836. 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. Oxidation of the hydrazine residue with potassium bromide
- c. Bromination of the pyridine ring
- d. Opening of the pyridine ring
- e. Reduction of the hydrazine residue with bromine

1837. 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. Sodium nitrite
- b. Perchloric acid**
- c. Potassium bromate
- d. Iodine
- e. Sodium hydroxide

1838. 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. Vitamins
- b. Essential oils and proazulenes**
- c. Polysaccharides
- d. Alkaloids
- e. Cardiac glycosides

1839. Specify the fluid used to coat the forms for pouring of the suppositories with hydrophilic vehicles:

- a. Dimethylsulfoxide
- b. Vaseline (petroleum jelly)**
- c. Purified water
- d. Glycerine
- e. Glycerine-water solution

1840. How often should a pharmacy make an inventory of its fixed assets?

- a. Once every three years
- b. At least twice a year
- c. At least thrice a year
- d. At least once in a quarter
- e. Once a year**

1841. An analytical chemist should use the following solution to identify sodium-containing substances:

- a. Sodium citrate
- b. Potassium permanganate
- c. Potassium pyroantimonate**
- d. Potassium carbonate
- e. Barium hydroxide

1842. 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. Black precipitate
- b. Blue precipitate
- c. Light green precipitate
- d. White precipitate**
- e. Yellow precipitate

1843. 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. Pyridine
- b. Dimethyl formamide
- c. Sulfanilic acid
- d. Anhydrous acetic acid**
- e. Concentrated sulfuric acid

1844. 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. Local authorities
- c. —
- d. Tax Inspectorate
- e. Chief physician

1845. 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 coronary atherosclerosis
- c. Impairment of coronary circulation
- d. Myocardial infarction
- e. Progressing ischemic heart disease

1846. 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. Statins

**b. Nitrates**

c. Calcium antagonists

d.  $\beta$ -adrenergic blockers

e. Anticoagulants

1847. Inspection of received medicines should be performed by an authorized employee. What is NOT apart of the responsibilities of this person?

a. To keep a record book of received medicines

b. To draw up conclusions regarding inspection of received medicines

**c. To draw up orders for medicines and medical products, to conclude sales contracts**

d. To check the pharmacy stock for low-quality or fake medicines

e. —

1848. Snake venom-based drugs are widely applied in treatment of locomotor apparatus diseases. Main components of these venoms are:

**a. Toxic proteins**

b. Cardiac glycosides

c. Phenol-alcohols

d. Glucosinolates

e. Alkaloids

1849. A 25-year-old man is diagnosed with acute pyelonephritis of moderate severity. What drugs should be prescribed for etiotropic therapy?

a. Nonsteroidal anti-inflammatory drugs

b. Glucocorticoids

**c. Antimicrobial agents**

d. Anticholinesterase drugs

e. Antiarrhythmic drugs

1850. Doctor's prescription fulfills several functions. What function indicates that the doctor bears responsibility for correct prescription of medicines to the patient?

a. Technological

b. Economic

c. Social

d. Informational

**e. Legal**

1851. Accounting records are classified by the type of asset accounting or by their sources. Active accounts keep record of the following:

a. Equity capital

b. Debt settlement with the creditors

c. Salaries payment

**d. Monetary funds**

e. Bank loans

1852. 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. Pink coloring

b. Brown coloring

c. Yellow coloring

d. Blue coloring

**e. White opalescence**

1853. The cholagogue derived from Rosa canina fruit is used in treatment of liver and gallbladder diseases. Name this drug:

- a. Phytol
- b. Chophytol
- c. Cholas**
- d. Allochol
- e. Altan

1854. Standard stactometer divides 1 ml of water into:

- a. 25 drops
- b. 15 drops
- c. 20 drops**
- d. 30 drops
- e. 10 drops

1855. 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. Fructus Ammi majoris
- c. Fructus Dauci carotae
- d. Fructus Pastinacae sativae
- e. Herba Meliloti

1856. What corticosteroid medicinal substance has two ?uorine atoms in its chemical structure?

- a. Prednisolone
- b. Hydrocortisone acetate
- c. Dexamethasone
- d. Triamcinolone acetonide

**e. Fluocinolone acetonide**

1857. 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. Ergocalciferol
- b. Cocarboxylase hydrochloride
- c. Rutin
- d. Ribo?avin

**e. Vicasol (Menadione)**

1858. When servicing customers it is necessary to maintain cash desk discipline. A cashier should make records in the cash book:

- a. At the end of a workday
- b. Immediately after the cash transaction occurred**
- c. Quarterly
- d. Monthly
- e. Weekly

1859. What factors affect tablet disintegration?

- a. High speci?c gravity of powders
- b. Poor ?owability
- c. Amount and nature of disintegrating agents**
- d. Tablet powder contains lamellar crystals
- e. Heterogeneity of granulated material

1860. 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. Erysimum canescens
- b. Adonis vernalis
- c. Convallaria majalis
- d. Digitalis lanata**
- e. Strophanthus kombe

1861. 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. Shipping department
- c. Finance department
- d. Stores development
- e. Marketing department

1862. The reaction of glucose identification produces red precipitate with the following reagent:

- a. Thiocyanogen bromide
- b. Alkaline potassium tetraiodomercurate solution
- c. Sodium nitroprusside solution
- d. Copper-tartrate
- e. Ammoniacal silver nitrate solution

1863. During quantitative determination of Vicasol (Menadione) by means of cerimetry, the following indicator is used:

- a. Ferroin
- b. Crystal violet
- c. Methyl red
- d. Methyl orange
- e. Naphtholbenzein

1864. As the result of reduction of alcoholic solutions of 5-nitrofur derivatives by means of their reaction with zinc in the presence of diluted hydrochloric acid, the following occurs:

- a. Color change from yellow to black
- b. Precipitation and gassing
- c. Precipitation
- d. Ammonia production
- e. Solution decoloration

1865. A patient developed dry cough while undergoing pharmacotherapy for arterial hypertension. What group of drugs can be characterized by this side effect?

- a. Tranquilizers
- b. Antacids
- c. Calcium antagonists
- d. Antipsychotics
- e. ACE inhibitors

1866. Vinblastine and Vincristine demonstrate antitumor activity. Name the herbal raw material used in production of these medicines:

- a. Herba Selaginis
- b. Folia Catharanthi rosei
- c. Rhizomata Nupharis lutei
- d. Herba Vincae minoris
- e. Folia Berberidis

1867. A pharmacist prepares 180 ml of adonis grass infusion. How much herbal raw material should be taken to prepare this infusion?

- a. 18.0
- b. 6.0
- c. 2.0
- d. 10.0
- e. 15.0

1868. 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. *Juniperus communis*
- b. *Alnus incana*
- c. ***Humulus lupulus***
- d. *Rubus idaeus*
- e. *Olea europaea*

1869. 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. 40000UAH
- b. 30000UAH
- c. **5000UAH**
- d. 15000UAH
- e. 35000UAH

1870. Under the current legislation, full or partial exemption of persons and legal entities from tax payment is called:

- a. Tax
- b. Tax rate
- c. **Tax concession**
- d. Tax system
- e. Subject to taxation

1871. 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. Balance sheet
- c. Statement of changes in equity
- d. Cash flow statement
- e. Income statement

1872. 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. 2 years
- b. 3 years
- c. **5 years**
- d. 1 years
- e. Indefinitely

1873. 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. Papaverine hydrochloride
- b. **Euphylline (Aminophylline)**
- c. Ambroxol
- d. Prednisolone
- e. Suprastin (Chloropyramine)

1874. 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. Salbutamol
- b. Oxeladin
- c. **Ambroxol**
- d. Butamirate
- e. Codeine phosphate

1875. A 52-year-old patient has been diagnosed with gouty arthritis, phase 2. What drug should be basic in treatment of this patient?

- a. Furosemide
- b. Penicillin
- c. Hydrochlorothiazide
- d. Paracetamol
- e. Allopurinol**

1876. Bromatometry allows quantitative analysis of the following drug:

- a. Benzoic acid
- b. Potassium acetate
- c. Glutamic acid
- d.  $\alpha$ -Alanine
- e. Sodium salicylate**

1877. 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. Calcium chloride
- c. Protargol (Silver proteinate)
- d. Sodium chloride
- e. Glucose

1878. 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. Technological
- b. Economic**
- c. Legal
- d. Social
- e. Medical

1879. What drug, due to  $\beta$ -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. Dibazol (Bendazol)
- b. Amoxicillin trihydrate**
- c. Papaverine hydrochloride
- d. Metronidazole
- e. Phenazone

1880. A patient with angina pectoris takes long-acting nitrates. Consult him what side-effect is the most common for these drugs:

- a. Nausea
- b. Diarrhea
- c. Constipation
- d. Headache**
- e. Vomiting

1881. 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. Certificate of compliance with hygiene regulations
- c. Sanitary passport
- d. Sanitary-epidemiological certificate
- e. Registration certificate

1882. How long should a retail business that deals in medicines keep the quality certificates issued by



drug manufacturers?

- a. 3 years
- b. 2 years
- c. 5 years
- d. 6 months
- e. 1 year

1883. Pharmacy employees receive their salary payments twice a month. What should the cashier do, if a pay day coincides with a holiday?

- a. There are no regulations regarding payment of salaries in this case
- b. To pay the salaries one day earlier
- c. To pay the salaries on the holiday
- d. To pay the salaries after the holiday
- e. To pay the salaries 10 days earlier

1884. 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 Betulae
- b. Folia Melissa
- c. Folia Absinthii
- d. Folia Eucalypti
- e. Folia Menthae piperitae

1885. Nicotinamide is a pyridine derivative, which can be identified by its positive reaction with:

- a. Grade reagent
- b. Copper-tartrate solution
- c. Cyanogen bromide reagent
- d. Thioacetamide reagent
- e. Thioglycolic acid solution

1886. 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. Caffeine and sodium benzoate
- c. Theophylline
- d. Theophylline ethylenediamine
- e. Theobromine

1887. 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. Violet coloring
- b. Green fluorescence
- c. White caseous precipitate
- d. Yellow precipitate
- e. Blue coloring

1888. 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. Ammonium oxalate
- b. Sodium sulfide
- c. Silver nitrate
- d. Barium chloride
- e. Magnesium sulfate

1889. A pharmacist prepares an infusion in proportion 1:400. Specify the herbal raw material used in this infusion:

- a. Camomile grass
- b. Thermopsis grass**
- c. Oak bark
- d. Motherwort grass
- e. Althaea roots

1890. A pharmacist prepares 100 ml of glucose solution. Specify the amount of Weibel's stabilizer necessary in this case:

- a. 15 ml
- b. 10 ml
- c. 5ml**
- d. 20 ml
- e. 2ml

1891. A pharmacist has dissolved a medicinal substance in the sterile purified water to make an eye ointment. Specify this medicinal substance:

- a. Xeroform
- b. Basic bismuth nitrate
- c. Purified sulfur
- d. Pilocarpine hydrochloride**
- e. Menthol

1892. An important indicator of business activity is profitability of a business. Specify the indices that can be used to measure the profitability:

- a. Turnover/income
- b. Turnover/cost price
- c. Profit/turnover**
- d. Income/turnover
- e. Liquidity/solvency

1893. A 60-year-old patient, who had suffered a myocardial infarction, was prescribed acetylsalicylic acid as an antiaggregant. Specify the optimal daily dosage of acetylsalicylic acid for antiaggregatory effect:

- a. 500 mg
- b. 100 mg**
- c. 300 mg
- d. 200 mg
- e. 400 mg

1894. 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. Mutagenic
- b. Teratogenic**
- c. Fetotoxic
- d. Embryotoxic
- e. Carcinogenic

1895. 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. Reaction of sublimation
- b. Dragendorff's test
- c. Stahl's reaction
- d. Mayer's test
- e. Legal's test**

1896. A 43-year-old woman has come to a pharmacy with complaints of sharp headache in the occipital area, palpitations, "visual snow" in her eyes, nausea; her BP is 180/110 mm Hg. These symptoms correspond with:

- a. Acute conjunctivitis
- b. Hypertensive crisis**
- c. Exertional angina pectoris attack
- d. Migraine attack
- e. Cervical osteochondrosis

1897. What fatty oil is nondrying due to its oleic acid glyceride content?

- a. Helianthi oleum
- b. Cucurbitae oleum
- c. Lini oleum
- d. Ricini oleum**
- e. Maydis oleum

1898. 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. Levo?oxacin
- c. Amikacin
- d. Metronidazole
- e. Fluconazole

1899. 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. Acyclovir
- b. Doxycycline hydrochloride
- c. Benzylpenicillin (Penicillin G)
- d. Isoniazid**
- e. Metronidazole

1900. 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. Filter the tincture through adsorbent
- c. This kind of deviation is not important
- d. The tincture is a non-recoverable reject material
- e. Precipitate excessive active substances

1901. The phytochemical workshop of a factory produces liquid extracts. What extractants are used in this manufacturing process?

- a. Dichloroethane
- b. Water
- c. Chloroform
- d. Ammonia solution
- e. Aqueous-alcoholic solutions**

1902. 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. Socioeconomic
- b. Geographic
- c. Demographic**
- d. Psychographic
- e. Behavioral

1903. 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. Integration
- b. Diversification**
- c. Conglomeration
- d. Intensification
- e. Modernization

1904. 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. Potentiation
- b. Summation
- c. Tolerance
- d. Cumulation
- e. Dependence**

1905. 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. Red coloring of urine
- b. Increased blood pressure
- c. Decreased blood pressure
- d. Ototoxicity**
- e. Vomiting

1906. Considering thermostability of most animal-derived injection preparations, they are sterilized by means of:

- a. High frequency current
- b. Addition of buffer solutions
- c. Filtration through membrane**
- d. Autoclave chamber with high-pressure saturated steam
- e. Ultrasound

1907. An analytical chemist conducts quantitative determination of ibuprofen (substance) by means of direct alkalimetry. The following solution will be an indicator in this case:

- a. Phenolphthalein**
- b. Mordant black
- c. Ammonium iron (III) sulfate
- d. Potassium chromate
- e. Tropaeolin OO

1908. During anti-Helicobacter quadritherapy patient's feces colored black. What drug could have caused this effect?

- a. Clarithromycin
- b. Metronidazole
- c. Omeprazole
- d. Amoxicillin
- e. Bismuth subcitrate**

1909. 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. Vicasol (Menadione)
- b. Clopidogrel
- c. Acetylsalicylic acid
- d. Protamine sulfate**
- e. Streptokinase

1910. 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. Conflict between individual and group
- b. Interpersonal conflict**
- c. Dysfunctional conflict
- d. Intrapersonal conflict
- e. Intergroup conflict

1911. 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. Receipt
- b. Remains unregistered documentarily
- c. Cash income order
- d. Invoice
- e. Cash expense order**

1912. Hyoscyamine and scopolamine are typically contained in the plants of the following family:

- a. Papaveraceae
- b. Asteraceae
- c. Solanaceae**
- d. Apocynaceae
- e. Fabaceae

1913. A pharmaceutical company produces suppositories made from thermolabile medicinal substances. What method is used in their production?

- a. Rolling
- b. Dispersion
- c. Steeping
- d. Pouring
- e. Pressing**

1914. A pharmaceutical company produces liquid dosage forms. What principle is used in rotary pulsation apparatus to obtain an emulsion?

- a. Mechanical dispersion**
- b. Solubilization
- c. Maceration
- d. Coacervation
- e. Ultrasonic dispersion

1915. 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. Identification
- c. Quantitative determination
- d. Microbiological purity
- e. pH

1916. A pharmaceutical company produces various medicines. Name the dosage form consisting of separate hard dry particles disintegrated to varying degree:

- a. Dried extract
- b. Powders**
- c. Suspensions
- d. Tablets
- e. Emulsions

1917. According to the State Pharmacopoeia of Ukraine, the herbal raw material used in production of plantaglucide should be tested by means of thinlayer chromatography. The resulting chromatogram will have a weak blue zone, which will indicate the presence of:

- a. Acorone**

- b. Azulene
- c. Atropine
- d. Aucubin**
- e. Acteoside

1918. 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. Sorbents
- b. Immunosuppressants
- c. Antacids
- d. Enzymatic agents
- e. Probiotics**

1919. Where on the shop floor of a pharmacy should various nutritional supplements and health food be placed?

- a. By their pharmacotherapy group
- b. Alongside medicines
- c. By their Anatomical Therapeutic Chemical Classification
- d. On separate shelves and in separate shopwindows**
- e. By their application

1920. 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. Herzberg's two-factor theory
- b. Maslow's hierarchy of needs
- c. Vroom's expectancy theory**
- d. McClelland's theory of needs
- e. McGregor's Theory X and Theory Y

1921. The management plans to open a new pharmacy in one of the local villages. Such activity can be identified as:

- a. Growth strategy**
- b. Horizontal integration
- c. Horizontal diversification
- d. Conglomerate diversification
- e. Vertical integration

1922. 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. Production development
- b. Integrated marketing
- c. Product development
- d. Intensification of commercial effort
- e. Socio-ethical marketing**

1923. Publicly-owned "Isotope" factory is the only manufacturer of radiopharmaceuticals in Ukraine. What type of distribution is characteristic of radioactive drugs?

- a. Exclusive**
- b. Intensive
- c. Bulk
- d. Sample
- e. Selective

1924. 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. Consolidation
- b. Market development**
- c. Product development
- d. Market penetration
- e. Diversification

1925. 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. Calcium carbonate
- c. Ranitidine
- d. Simethicone
- e. Magnesium-containing drugs

1926. What antacid can cause constipations, osteoporosis, and encephalopathy when taken for a long period of time?

- a. Sodium bicarbonate
- b. Sodium alginate
- c. Magnesium oxide
- d. Aluminium hydroxide**
- e. Calcium carbonate

1927. 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. Vicasol (Menadione)
- b. Ascorbic acid
- c. Tocopherol acetate
- d. Ergocalciferol
- e. Retinol acetate**

1928. 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. Nitrofurantoin
- b. Resorcinol
- c. Tyrosine**
- d. Sulfamethoxazole
- e. Retinol acetate

1929. 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. Cold
- b. Headache
- c. Diabetes mellitus**
- d. Muscle pain
- e. Cuts and abrasions

1930. Spectrophotometric analysis of anthracene derivatives contained in buckthorn bark is based on the following reaction:

- a. Salt precipitation
- b. Sublimation
- c. Oxidation of anthracene derivatives
- d. Anthraquinone reduction
- e. Production of phenolates with alkaliammonia solution**

1931. 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. Hyponatremia
- c. Hypernatremia
- d. Hypoglycemia
- e. Hypocalcemia

1932. 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. Mutual potentiation
- b. Acceleration of metabolism and excretion
- c. Relative overdosage
- d. Inhibition of hepatic microsomal enzymes

e. Antibiotic malabsorption

1933. Medicinal dyes should be stored in a special cabinet. Which of the listed medical products is a dye:

- a. Hydrogen peroxide
- b. Glucose
- c. Ascorbic acid
- d. Brilliant green
- e. Ethyl alcohol

1934. Core tablets that are to be made into dragees must not have a ?at shape. Why such requirement is necessary?

- a. To avoid prolonged contact with overlaying suspension
- b. They are not durable enough
- c. To prevent them from adhesion to each other
- d. To improve their appearance
- e. To speed up the process of applying the coating

1935. 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. Synthetic penicillins
- b. Natural penicillins
- c. Aminoglycosides
- d. Macrolides
- e. Combined penicillins

1936. Specify the formula of extractant calculation in the process of creating a tincture:

- a.  $\mu = \text{mmreanwdpmraotdeuricatl} \times 100\%$
- b.  $V = V_{\text{tincture}} \times n + m_{\text{rawmaterial}} \times K_{\text{alcoholabsorption}}$
- c.  $m_{\text{rawmaterial}} = m_{\text{endproduct}} + m_{\text{losses}}$
- d.  $E = m_{\text{ramwlomsasteesrial}} \times 100\%$
- e.  $V = V_{\text{tincture}} + m_{\text{rawmaterial}} \times K_{\text{alcoholabsorption}}$

1937. 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. Flavonoids
- b. Slime
- c. Saponins
- d. Alkaloids
- e. Anthracene derivatives

1938. Atropa belladonna grass extract is a component of compound antispasmodic drugs. Select such drug from the list:

- a. Urolesan



- b. Herbogastrine
- c. Olimetinum
- d. Solutan

**e. Bellasthesin**

1939. 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. Panaxosides
- b. Ginkgosides
- c. Purpurea glycosides

**d. Glucofrangulins**

e. Lanatosides

1940. Name the optimal vehicle for soluble vaginal suppositories:

- a. Glycerine
- b. Cocoa butter

**c. Polyethylene oxide**

- d. Fat
- e. Hard fat

1941. Weibel's liquid is necessary to stabilize the solution of a certain substance. Name this substance:

- a. Novocaine
- b. Sodium chloride
- c. Magnesium sulfate

**d. Glucose**

e. Potassium chloride

1942. 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. Legal
- c. Psychosocial
- d. Simulation
- e. Economic

1943. 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 descending
- b. Intra-level
- c. Horizontal

**d. Vertical ascending**

e. External

1944. What tablet coating protects stomach from harmful influence of active ingredients?

- a. Gastrically absorbed
- b. Water-soluble

**c. Intestinally absorbed**

- d. Fat-soluble
- e. —

1945. 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. Full material liability contract
- b. Balance sheet
- c. Auditor's conclusion

**d. Credit contract**

e. License

1946. A pharmacy supplies the surgical ward of a hospital. What document enables the dispensing chemist to supply the goods:

a. Report on the movement of packaging

b. Product revaluation notice

**c. Purchase order**

d. Consolidated register

e. Receipt log book

1947. 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. Middle-level

**b. Technical**

c. Institutional

d. Administrative

e. Top-level

1948. 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. Survey

b. Panel

**c. Experiment**

d. Observation

e. —

1949. 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. —

**b. To ensure business survival**

c. To create the image of high-quality medicine manufacturer

d. To maximize profits

e. To gain leadership due to high quality of manufactured medicines

1950. 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. Ibuprofen

b. Celecoxib

**c. Acetylsalicylic acid**

d. Metamizole sodium

e. Paracetamol

1951. According to the law regulating labour remuneration, the businesses must establish their compensation plan in the following document:

**a. Collective agreement**

b. Decree

c. Job description

d. Statement

e. Contract of delivery

1952. 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. Charity

**b. Social responsibility**

c. Financial activity

- d. Commercial activity
- e. Industrial activity

1953. 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. —

**b. Organic**

- c. Combined
- d. Mechanistic
- e. Informal

1954. 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. Tasks

b. Mission

**c. Technologies**

- d. Structure
- e. Human resources

1955. 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. Benzene

b. Chloroform

c. Anhydrous acetic acid

d. Ethyl alcohol

**e. Dimethyl formamide**

1956. When dispensing an antacid agent and oloxacin 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. Increases antacid effectiveness

b. Increases oloxacin absorption

**c. Decreases oloxacin absorption**

d. Decreases antacid effectiveness

e. Increases risk of dysbiosis

1957. In the process of industrial production 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 an emulsion

b. Melt a part of fatty vehicle and dissolve the substances there

c. Melt all of fatty vehicle and dissolve the substances there

**d. Introduce the substances as a suspension**

e. Dissolve the substances in the water heated to 45°C

1958. 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. Ganglionic blockers

b. Diuretics

c. Calcium antagonists

d.  $\alpha$ -adrenergic blockers

**e.  $\beta$ -adrenergic blockers**

1959. 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. Solpadeine
- c. Analgin (Metamizole)
- d. Digoxin
- e. Novocaine

1960. Helichrysum arenarium herbal raw material has anti-inflammatory and choleretic effect. What parts of this plant are harvested?

- a. Flowers
- b. Rhizomes
- c. Roots
- d. Fruits
- e. Grass

1961. 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. Ninhydrin test
- b. Biuret test
- c. Thiochrome test

d. Maltol test

- e. Vitali-Morin reaction

1962. 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. Protamine
- b. Vicasol (Menadione)

c. Unithiol (DMPS)

- d. Naloxone
- e. Methionine

1963. 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. Furacilin (Nitrofurantoin)
- b. Furadonin (Nitrofurantoin)
- c. Nalidixic acid

d. Nifuroxazide

- e. Nitroxoline

1964. 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. Check payable in account
- b. Cash register receipt
- c. Cash order

d. Payment order

- e. Accounting form

1965. In the process of industrial production, certain adjuvants are included in the soft dosage forms as pH regulators. Name these adjuvants:

- a. Benzalkonium chloride, benzyl alcohol

b. Citric acid, sodium phosphate salts

- c. Glycerine, dimethyl sulfoxide
- d. Paraffin, spermaceti
- e. Sodium lauryl sulfate, tween emulsifiers

1966. What effect will anthracene derivatives have, if -OH- groups are located in both benzene rings

of anthraquinone?

- a. Laxative
- b. Litholytic
- c. Choleric
- d. Sedative
- e. Diuretic

1967. Polyethylene oxide base belongs to the following group:

- a. Fat
- b. Hydrophilic
- c. Amphiphilic
- d. Hydrophobic
- e. Emulsion

1968. Choose the solvent necessary to prepare a concentrated solution of sodium bicarbonate in the pharmacy:

- a. Peach-kernel oil
- b. Vaseline (petroleum jelly)
- c. Ethanol
- d. Purified water
- e. Chloroform

1969. 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. Technological
- b. Sociocultural
- c. Economic
- d. Political
- e. Legal