

1. A pharmaceutical factory produces tablets of sodium chloride. What is the method of their production?

- a. Wet granulation prior to compression
- b. Direct compression without additional substances**
- c. Dry granulation prior to compression
- d. Direct compression with the addition of excipients
- e. Moulding

2. A pharmacist has prepared a Leonurus tincture with sodium bromide. How was sodium bromide introduced into the preparation in this case?

- a. Sodium bromide was mixed in a separate vessel with a part of the extract, then this mixture was added into the prepared tincture
- b. Sodium bromide was dissolved in the tincture in a vial for dispensing
- c. Concentrated solution was added into the prepared extract
- d. Dry substance was dissolved in the infusion apparatus
- e. Dry substance was dissolved in the filtered extract in a stand**

3. A pharmaceutical company that has been producing nasal drops begins to produce the same drug in a spray dosage form. What marketing approach does this company choose in its relationship with customers?

- a. Product improvement**
- b. Socioethical marketing
- c. Intensification of commercial effort
- d. Sales improvement
- e. Manufacture improvement

4. A phytochemical department of a factory produces Calendula tincture. What herbal raw material is used in the manufacturing process?

- a. Roots
- b. Leaves and essential oil
- c. Roots, rhizomes, and grass
- d. Grass
- e. Flowers**

5. 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. Acidimetry
- b. Bromometry
- c. Complexometric titration**
- d. Alkalimetry
- e. Nitritometric titration

6. Pharmacies can prepare medicines based on individual formulations. What makes up the retail price of such medicines?

- a. Cost of the ingredients that make up this dosage form
- b. Cost of ingredients and package
- c. Cost of labor and price markup
- d. Cost of ingredients
- e. Cost of ingredients, package, and labor**

7. A 62-year-old woman has been diagnosed with acute pyelonephritis. She was prescribed gentamicin. Additionally, she takes furosemide. What are the possible complications of such treatment?

- a. High risk of allergic reactions
- b. Increased ototoxicity of aminoglycosides**
- c. High risk of seizures
- d. Increased hepatotoxic action of aminoglycosides
- e. Increased hematotoxicity of gentamicin

8. An infusion and a liquid extract used as cardiotonics are obtained from *Crataegus oxyacantha* flowers and fruits. What active substance that is a component of this herbal raw material can be determined using spectrophotometry?

- a. Cytisine
- b. Atropine
- c. Papaverine
- d. Flavonoids**
- e. Lipids

9. A pharmacist has prepared an aqueous extract using the cold infusion method. What herbal raw material was it?

- a. Buckthorn bark
- b. Marshmallow roots**
- c. *Arctostaphylos* leaves
- d. Mint leaves
- e. *Thermopsis* grass

10. A company manager analyzes, how effectively the available material assets are used, and identifies and eliminates the deviations arising in the course of work. What type of control is it?

- a. -
- b. Current**
- c. Preliminary
- d. Financial
- e. Final

11. To identify a medicinal substance, an analytical chemist performed a reaction of azo dye formation. This reaction is characteristic of the following medicine:

- a. Acetylsalicylic acid
- b. Chlorpropamide
- c. Resorcinol
- d. Benzocaine**
- e. Phenyl salicylate

12. Bromatometry allows quantitative analysis of the following drug:

- a. Benzoic acid
- b. Potassium acetate
- c. beta-Alanine
- d. Sodium salicylate**
- e. Glutamic acid

13. What corticosteroid medicinal substance has two fluorine atoms in its chemical structure?

- a. Fluocinolone acetonide**
- b. Hydrocortisone acetate
- c. Dexamethasone
- d. Triamcinolone acetonide
- e. Prednisolone

14. According to the requirements of the State Pharmacopoeia of Ukraine, thin-layer chromatography is a mandatory method of identification of herbal raw materials. What zones must be detected on a chromatographic plate during the analysis of *Digitalis purpurea* herbal raw material?

- a. Purpurea glycosides A and B**
- b. Atropine and hyoscyamine
- c. Lanatosides A and B
- d. K-Strophanthin
- e. Convallatoxin

15. 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. Iodine
- b. Sodium hydroxide
- c. Perchloric acid**
- d. Sodium nitrite
- e. Potassium bromate

16. Simultaneous application of doxycycline hydrochloride and oral contraceptive causes:

- a. -
- b. Increase of oral contraceptives effectiveness
- c. Reduction of oral contraceptives effectiveness**
- d. Increase of the antibacterial effect of doxycycline
- e. Reduction of the antibacterial effect of doxycycline

17. 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. McGregor's Theory X and Theory Y
- b. McClelland's theory of needs
- c. Maslow's hierarchy of needs
- d. Vroom's expectancy theory**
- e. Herzberg's two-factor theory

18. To improve structural and mechanical properties of capsule shells, to ensure their proper elasticity and reduce their brittleness, the following substances are introduced into the gelatin mass:

- a. Plasticizers**
- b. Stabilizers
- c. Thickeners
- d. Preservatives
- e. Pigments

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

- a. Sodium nitroprusside solution
- b. Ammoniacal silver nitrate solution
- c. Thiocyanogen bromide
- d. Alkaline potassium tetraiodomercurate solution
- e. Copper-tartrate**

20. During the microscopy of a herbal raw material, the pharmacist noted its main diagnostic features: calcium oxalate druses in the mesophyll of the leaf and along the veins, simple unicellular hairs, covering stellate hairs with 4-8 thick-walled, porous and often lignified rays at their base, idioblast cells with slime. What herbal raw material can be characterized by the listed diagnostic features?

- a. *Digitalis purpurea* folium
- b. *Althaea officinalis* herba**
- c. *Urtica dioica* folium
- d. *Hyoscyamus niger* folium
- e. *Gnaphalium uliginosum* herba

21. An analytical chemist can quantitatively determine the thiamine bromide content in powders by means of:

- a. Nitritometric titration
- b. Alkalimetry**
- c. Bromometry
- d. Complexometric titration
- e. Permanganatometry

22. The "Medpharm" wholesale pharmaceutical firm employs a system that encourages its managers to achieve better results in sales by assigning them points for surpassing their sale goals. The points

then become converted into material remuneration. This way the company management carries out the following management function:

- a. Motivation**
- b. Organization
- c. Planning
- d. Delegation
- e. Control

23. What antibacterial agent is a part of the eradication therapy for H. pylori during the treatment of peptic ulcer disease of the stomach?

- a. Biseptol (Co-trimoxazole)**
- b. Clarithromycin**
- c. Meropenem
- d. Gentamicin
- e. Ceftriaxone

24. What means of demand stimulation can be applied by pharmacy management among its employees?

- a. Coupons
- b. Bonuses**
- c. In-store advertising
- d. Layout of medical products in shop-windows and on shelves
- e. -

25. As a result of heparin overdose, a patient developed bleeding. What medicine must be used as an antidote in this case?

- a. Unithiol (Dimercaptopropansulfonate sodium)
- b. Naloxone
- c. Protamine sulfate**
- d. Methionine
- e. Thiosulfate

26. Specify the drugs recommended for prevention and correction of dysbiotic problems caused by antibiotic therapy:

- a. Prokinetics
- b. Probiotics**
- c. Uroseptics
- d. Choloretics
- e. Antacids

27. What document must be added to the foreign-made medical products?

- a. Conclusion on the quality of the drug imported into Ukraine**
- b. Extract from the State Register of Medicines
- c. Technical regulations for the drug
- d. Written Control Passport
- e. Drug Quality Standard

28. The management of a pharmaceutical company performs an internal audit to check the compliance with proper work practices. What management function is used by the company's management in this case?

- a. Motivation
- b. Organization
- c. Planning
- d. Regulation
- e. Control**

29. A woman with chronic bronchitis was prescribed azithromycin. After a time, she developed complaints of abdominal pain and distension, diarrhea, nausea, and vomiting. What side effect is observed in this patient?

a. Dysbiosis

- b. Chondrotoxicity
- c. Photosensitization
- d. Nephrotoxicity
- e. Allergic response

30. Gastroduodenopathies are one of the most common complications of pharmacotherapy during treatment with nonsteroidal anti-inflammatory drugs. What statement correctly describes the cause of their development?

- a. Inhibition of platelet adhesion and aggregation
- b. Inhibition of neutrophil aggregation
- c. Inhibition of lipid peroxidation
- d. Inhibition of prostaglandin synthesis in the mucosa**
- e. Disturbed pain impulse conduction

31. The personal qualities of the head of a pharmaceutical company are attractive to the subordinates who want to emulate their boss in everything. What form of power of the manager is observed in this situation?

- a. Referent power**
- b. Power based on fear
- c. Coercive power
- d. -
- e. Legitimate power

32. What substance is most often used as a vehicle in triturations?

- a. Starch
- b. Sucrose
- c. Lactose**
- d. Talcum
- e. Glucose

33. A patient suffering from bronchial asthma was diagnosed with essential hypertension. What antihypertensive drug is contraindicated for this patient?

- a. Captopril
- b. Amlodipine
- c. Propranolol**
- d. Verapamil
- e. Hypothiazid (Hydrochlorothiazide)

34. A pharmacist has prepared a medicine, using the following formulation: Magnesii oxydi Natrii hydrocarbonatis ana 0.2 M. f. pulv. D. t. d. №12 S. Take one powder thrice a day. endtabular What is the optimal preparation technique in this case?

- a. Comminute sodium bicarbonate with alcohol, add magnesium oxide, mix the ingredients
- b. Comminute sodium bicarbonate, add magnesium oxide, mix the ingredients**
- c. Comminute magnesium oxide with alcohol, add sodium bicarbonate, mix the ingredients
- d. Comminute a part of magnesium oxide, add sodium bicarbonate, add the remaining magnesium oxide, mix the ingredients
- e. Comminute magnesium oxide, add sodium bicarbonate, mix the ingredients

35. A woman at the third trimester of her pregnancy fell ill with pneumonia. A doctor prescribed her a fluoroquinolone. What negative effect can it have on the fetus?

- a. Hematotoxic
- b. Nephrotoxic
- c. Hepatotoxic
- d. Neurotoxic
- e. Chondrotoxic**

36. A pharmaceutical company can use different types of marketing, depending on the demand for the medicinal products that it produces. What type of demand makes it advisable to implement

demarketing?

- a. Declining
- b. Absent
- c. Excessive**
- d. Satisfied
- e. Negative

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

- a. Dissolved in the saturated solution of potassium iodide**
- b. Comminuted with alcohol
- c. Dispersed with glycerine
- d. Reduced to fine powder
- e. Dissolved in the boiling water

38. *Berberis vulgaris* herbal raw material is a source of medicinal substances with cholagogic and hemostatic effect. What parts of this plant are harvested as a herbal raw material?

- a. Leaves and flowers
- b. Roots and leaves**
- c. Leaves and fruits
- d. Roots and fruits
- e. Leaves and seeds

39. A manufacturer plans to sell its new medicine directly to the consumers through its own network of pharmacies. What type of distribution channel is it?

- a. Direct distribution channel (zero channel)**
- b. Two-level distribution channel
- c. Three-level distribution channel
- d. One-level distribution channel
- e. Four-level distribution channel

40. What type of loan does the pharmacy receive in the form of goods, and returns mainly in monetary form?

- a. State loan
- b. Term loan
- c. Bank loan
- d. Prolonged loan
- e. Commercial loan**

41. 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. Hypernatremia
- b. Hypoglycemia
- c. Hypocalcemia
- d. Hyponatremia
- e. Hyperkalemia**

42. A herbal raw material that contains alkaloids is being identified using a freshly prepared tannin solution. What precipitate forms as a result of this reaction?

- a. Yellow
- b. White and amorphous**
- c. Creamy
- d. Red-brown
- e. Green

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

- a. Protargol (Silver proteinate)
- b. Glucose

c. Calcium chloride

d. Gelatin

e. Sodium chloride

44. The phytochemical department of a pharmaceutical manufacture produces maximally purified extracts. In the process, specific methods are used for the extract purification. Which description corresponds with the dialysis method?

a. The process of gas absorption

b. The characteristic of biopolymer molecules that does not allow them to pass through semi-permeable membranes

c. The process of heating the extract

d. The process of electrolyte action

e. The process of extraction from one liquid using another liquid

45. Which of the plants listed below contain inulin?

a. *Juniperus communis*, *Thymus serpyllum*

b. *Rhamnus cathartica*, *Sorbus aucuparia*

c. *Salvia officinalis*, *Artemisia absinthium*

d. *Inula helenium*, *Helianthus tuberosus*

e. *Ledum palustre*, *Acorus calamus*

46. At a pharmacy, during the visual inspection, an authorized person has doubts about the quality of medicines. What measures should be taken in this case?

a. Withdraw the medicines and send them back to the supplier

b. Withdraw the medicines and send them for disposal

c. Withdraw the medicines and send them for laboratory testing

d. Withdraw the medicines and send them to the quality assurance department of the manufacturing company

e. Withdraw the medicines and send them back to the manufacturing factory

47. Herbal mixtures contain several types of comminuted or non-comminuted herbal raw material. What stage is **NOT** a part of herbal mixture production?

a. Extraction

b. Sifting

c. Packing

d. Marking

e. Mixing

48. 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. Glutamic

d. Hexanic

e. Glutaconic

49. To reduce business risks, a pharmaceutical company expands its business by entering new areas and industries that are unrelated to the drug manufacturing. Name this process.

a. Diversification

b. Modernization

c. Conglomeration

d. Integration

e. Intensification

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

a. Ethyl alcohol

b. Brilliant green

- c. Hydrogen peroxide
- d. Ascorbic acid
- e. Glucose

51. 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 and capitate hairs
- b. Retor-shaped hairs
- c. Simple and capitate hairs
- d. Branched, simple and ciliated hairs

e. T-shaped hairs along the leaf edge

52. Bioactive substances of this plant have secretolytic, antispasmodic, antifatulent, and slight diuretic effect. Its essential oil is used in making of gripe water. What plant is it?

- a. *Crataegus sanguinea*
- b. *Calendula officinalis*
- c. *Betula pendula*

d. *Foeniculum vulgare*

- e. *Tanacetum vulgare*

53. Commercial and financial activity of the pharmacies can be measured using a system of parameters. What parameter can be described as the sum of sold goods per employee (taking the average number of employees during the analyzed period)?

- a. Profitability

b. Labor productivity

- c. Stock of goods
- d. Price index
- e. Turnover

54. *Rhamnus cathartica* fruits contain anthracene derivatives. What qualitative reaction is used to determine the presence of these substances in a herbal raw material?

- a. Reaction with iron(II) sulfate

b. Reaction with an alkali

- c. Reaction with Molisch reagent
- d. Reaction with Fehling reagent
- e. Reaction with ammonium iron(III) sulfate

55. A pharmacy has received a receipt for preparation of a dermatological ointment with a non-specified vehicle. What vehicle should be used in this case?

- a. Soap-glycerine base
- b. Lanolin

c. Vaseline

- d. Vaseline and lanolin
- e. Gelatin-glycerine gel

56. *Hypericum perforatum* grass contains hypericin. What is the pharmacological effect of this substance?

- a. Analgesic

b. Antidepressant

- c. Antiasthmatic
- d. Expectorant
- e. Anticonvulsant

57. 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. Identification
- b. Quantitative determination

c. pH

d. Sterility

e. Microbiological purity

58. The following herbal raw material is a source of tannin in pharmaceutical manufacture:

a. Rhizomata et radix Sanguisorbae

b. Rhizomata Bistortae

c. Fructus Viburni

d. Rhizomata Bergeniae

e. Folium Cotini coggygriae

59. The introduction of fluorine atoms into a glucocorticosteroid molecule results in a significant increase of the anti-inflammatory effect. What drug is a fluorine-derivative glucocorticoid?

a. Cortisone acetate

b. Prednisone

c. Prednisolone

d. Betamethasone dipropionate

e. Hydrocortisone acetate

60. 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. Antibiotic malabsorption

c. Inhibition of hepatic microsomal enzymes

d. Relative overdosage

e. Acceleration of metabolism and excretion

61. What substance forms a film coating of tablets and can be dissolved only in intestinal juice?

a. Sodium carboxymethyl cellulose

b. Diethylaminomethylcellulose

c. Acetylphthalylcellulose

d. Benzylaminocellulose

e. Paraaminobenzoate of sugars

62. The tablet workshop at a pharmaceutical factory manufactures tablets adding adjuvants into the tablet mass. What substances belong to taste correctors?

a. Purified water, starch glue, sugar syrup, gelatin, carboxymethylcellulose solution

b. Sugar, glucose, essential oils, menthol, fruit juice concentrates, indigo carmine, iron oxide, mannitol

c. Starch, glucose, kaolinite, magnesium oxide, sodium bicarbonate

d. Stearic acid, calcium and magnesium stearate, starch, talcum

e. Methylcellulose, polyvinylpyrrolidone, acetylphthalylcellulose

63. A dispensing chemist has a total insured work record of 10 years. It means that the dispensing chemist can expect the following amount of temporary disability benefits:

a. 80% of the average salary

b. 60% of the average salary

c. 70% of the average salary

d. 100% of the average salary

e. 50% of the average salary

64. A pharmacy prepares extemporaneous drugs. Who sets the retail prices and labor charges for these pharmacy-made medicines?

a. Local council

b. Pharmacy

c. Inspectorate for medicine quality control

d. Regional state administration

e. The Ministry of Health

65. What is the shortest goods distribution channel for medical products?

a. Zero-level

b. One-level

c. Three-level

d. Two-level

e. Four-level

66. 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. Methoxyphenylacetic acid

b. Hypophosphite

c. Sulfomolybdenum

d. Aminomethyl alizarin acetic acid

e. Thioacetamide

67. For targeted delivery of medicinal substances, a special dosage form is used. It is formed by a double lipid layer with the cavities, within which the formation sphere is located. What is the name of this dosage form?

a. OROS tablet

b. Liposome

c. Infusion therapeutic system

d. Transdermal therapeutic system

e. Matrix tablet

68. Eucalyptus essential oil is used as an antiseptic. What excretory structures of a leaf accumulate this substance?

a. Secretory cells

b. Glandular <<spots>>

c. Glandular hairs

d. Essential oil glandules

e. Essential oil cavities

69. 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. Line and staff

b. Functional

c. Line

d. Matrix

e. Divisional

70. 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. Apricot

b. Tragacanth

c. Cherry

d. Plum

e. Acacia

71. A pharmacy has submitted its financial report for the first quarter of 2021. It contains the following information: turnover - 92 000 UAH, cost price of the goods sold - 60 000 UAH. Therefore, the price markup for this period amounts to:

a. 32 000 UAH

b. 2 000 UAH

c. 90 000 UAH

d. 60 000 UAH

e. 62 000 UAH

72. Alkaloids are used in medical practice for treatment of various diseases. Based on its chemical composition, the following substance can be classified as a quinolizidine alkaloid:

- a. Codeine phosphate
- b. Pachycarpine hydroiodide**
- c. Quinine sulfate
- d. Caffeine monohydrate
- e. Scopolamine hydrobromide

73. What adjuvants are added to a tablet mass to promote its breakup?

- a. Disintegrants**
- b. Thickeners
- c. Antioxidants
- d. Lubricants
- e. Fillers

74. Profitability is an economic parameter that characterizes the effectiveness of the pharmacy's commercial, financial, and manufacturing activity. What parameters are used to determine the profitability of sales?

- a. Turnover of goods wages
- b. Turnover of goods cost price of products
- c. Profit turnover of goods**
- d. Cost price of products liquidity
- e. Liquidity solvency

75. An analytical pharmacist of the quality control department analyzes the phenol substance. What method of quantification is used for this purpose?

- a. Bromatometry**
- b. Permanganatometry
- c. Complexonometry
- d. Argentometry
- e. Mercurimetry

76. 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. Myocardial infarction
- b. Progressing ischemic heart disease
- c. Development of nitrate tolerance**
- d. Impairment of coronary circulation
- e. Progressing coronary atherosclerosis

77. *Sanguisorba officinalis* herbal raw material contains tannins. What method must be used to determine their content according to the State Pharmacopoeia of Ukraine?

- a. Spectrophotometry
- b. Chromatography
- c. Nephelometry
- d. Photoelectrocolorimetry
- e. Permanganatometry**

78. According to Decree №360 issued by the Ministry of Health of Ukraine, there is a list of medicines that cannot be prescribed to outpatients. Select one such drug from the list below:

- a. Tetracaine
- b. Nitrous oxide**
- c. Zopiklon
- d. Tramadol
- e. Atropine sulfate

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

a. Antimicrobial agents

- b. Antiarrhythmic drugs
- c. Nonsteroidal antiinflammatory drugs
- d. Glucocorticoids
- e. Anticholinesterase drugs

80. What stabilizer is used to stabilize ascorbic acid solutions for injections?

- a. 0.1 M hydrochloric acid solution
- b. Weibel stabilizer
- c. 0.1 M sodium hydroxide solution
- d. Sodium thiosulfate

e. Sodium bicarbonate with sodium sulfite

81. A pharmaceutical wholesaler has suffered commercial losses because of unpaid debts of a pharmacy network. What type of commercial losses is it?

- a. Special
- b. -
- c. Labor

d. Financial

e. Material

82. The head managers of the pharmacy's over-the-counter department and ready-to-use drugs department exchange information on the demand for medicines. What type of communication is it?

a. Vertical ascending

b. Horizontal

- c. Interlevel
- d. External
- e. Vertical descending

83. An employee of an analytical and quality control laboratory performs a rapid analysis of morphine hydrochloride. In this case, the presence of phenolic hydroxyl can be confirmed by a reaction with a solution of:

a. AgNO_3

b. FeCl_3

- c. Concentrated HNO_3
- d. NH_3
- e. $\text{K}_3[\text{Fe}(\text{CN})_6]$

84. A patient, who for the last three weeks was taking a laxative - a decoction of Frangula bark, has noticed a significant decrease in its clinical effect. What is the name of this phenomenon?

a. Idiosyncrasy

b. Tolerance

- c. Withdrawal syndrome
- d. Sensitization
- e. Cumulation

85. A pharmacist prepares a compound powder. What medicinal substance must be comminuted without adding an adjuvant liquid (alcohol or ether)?

a. Streptocide (Sulfanilamide)

b. Zinc oxide

- c. Menthol
- d. Thymol
- e. Camphor

86. Pharmaceutical workers decided to organize a business. What is the basis of the concept of "limited liability company"?

- a. A company, the members of which bear additional solidary liability for the company's obligations with all their property, while the company's investors bear liability only in the amount of their investments

b. A company, the members of which bear the liability for the company's debts within the amount of their contributions

c. A company, the members of which bear the liability for the company's debts within the amount of their contributions, and if these amounts are insufficient, all the members are equally liable to cover the debt with their personal property

d. A company, the members of which bear additional solidary liability for the company's obligations with all their property

e. A company, the members of which bear full liability

87. 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. External

b. Horizontal

c. Intra-level

d. Vertical descending

e. Vertical ascending

88. What method of analysis takes into account the strengths and weaknesses of a pharmaceutical company, as well as opportunities and threats at the pharmaceutical market, in order to determine marketing goals, strategies, and specific measures that would make it possible to adapt the company's potential to market trends and conditions?

a. SWOT analysis

b. XYZ analysis

c. ABC analysis

d. Meta-analysis

e. VEN analysis

89. A pharmacy has received a prescription for the preparation of powders. What substance must be added after sterilizing the powder?

a. Streptomycin sulfate

b. Streptocide (Sulfanilamide)

c. Osarsolum

d. Ephedrine hydrochloride

e. Magnesium oxide

90. 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. Purpurea glycosides

b. Ginkgosides

c. Panaxosides

d. Lanatosides

e. Glucofrangulins

91. A man with arterial hypertension was recommended the following to increase the antihypertensive effect of a diuretic:

a. Decrease the amount of table salt in the diet

b. Increase the physical exertion

c. Increase the amount of liquids in the diet

d. Decrease the physical exertion

e. Increase the amount of table salt in the diet

92. Pharmacy assets can be divided into current and non-current. What should be classified as non-current assets when drawing up the balance sheet?

a. Goods

b. Packaging

c. Monetary funds

d. Buildings

e. Herbal raw materials

93. During macroscopic analysis of rhizomes with roots, a pharmacist notes that rhizomes often have a cavity in their center. The color of the raw material is reddish-brown on the outside, while on section reddish-brown bark and orange-red wood are visible. The taste is sweet at first, but becomes slightly astringent and bitter later. What plant is the source of this herbal raw material?

- a. *Mentha piperita*
- b. *Thymus serpyllum*
- c. *Melissa officinalis*

d. *Rubia tinctorum*

e. *Sambucus nigra*

94. Phytochemical workshop of a factory manufactures pancreatin. What is the source material for obtaining pancreatin?

- a. Lungs of cattle
- b. Gastric mucosa of pigs
- c. Egg white
- d. Heart of cattle

e. Pancreas of pigs or cattle

95. A group of independent intermediaries operates on a regional market. They sell medicines on their own behalf and at their own cost. Such intermediaries are called:

- a. Consignees
- b. Agents

c. Dealers

- d. Brokers
- e. Commission agents

96. A 12-year-old girl has been diagnosed with acute pyelonephritis. What antibacterial agent has an age limit for its prescription to a patient?

a. Amoxicillin

b. Levofloxacin

- c. Cefuroxime
- d. Clarithromycin
- e. Benzylpenicillin sodium salt

97. Menthol medicinal substance can be chemically classified as a:

- a. Glycoside
- b. Bicyclic terpene
- c. Polypeptide
- d. Acyclic terpene

e. Monocyclic terpene

98. A pharmacy has received a prescription for colloid solution. Name this solution:

a. Collargol solution

- b. Sodium chloride solution
- c. Burow's solution
- d. 5% glucose solution
- e. Nonaqueous solution

99. 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. Broker
- b. Consignee
- c. Commission agent
- d. Agent
- e. Dealer**

100. Acyclovir is a drug with the nucleoside structure, effective against herpes virus. What reaction of its transformation in the body is associated with its antiviral effect?

- a. Reduction
- b. Hydrolysis
- c. Hydroxylation
- d. Oxidation
- e. Phosphorylation**

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

- a. To improve disintegration
- b. To create necessary adhesive force between particles
- c. To improve the taste
- d. To improve the flowability of granular material
- e. To make pills of a certain weight**

102. 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. Glassware
- d. Glass-stoppered bottles
- e. Metal cylinders**

103. Phenyl salicylate can be identified by the smell of phenol that is produced when the following is added into the preparation:

- a. CoCl_2
- b. AgNO_3
- c. CuSO_4
- d. H_2SO_4**
- e. NaCl

104. Information on the pharmacy's actual stock of narcotic drugs, psychotropic substances, and precursors must be checked against the balance records made in the relevant logbook. How often must it be done?

- a. Monthly**
- b. Annually
- c. -
- d. Daily
- e. Quarterly

105. What drug facilitates dissolution of cholesterol stones in the gallbladder?

- a. Magnesium sulfate
- b. Silybum dry extract
- c. Cynara dry extract
- d. Ademetionine
- e. Ursodeoxycholic acid**

106. What medicine is used for anesthesia and cannot be prescribed to outpatients, according to Decree №360?

- a. Midecamycin
- b. Anaesthesin (Benzocaine)
- c. Suprastin (Chloropyramine)
- d. Metoprolol
- e. Sodium thiopental**

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

- a. Dandelion roots

- b. Plantain foliage
- c. Wormwood grass

d. Lily-of-the-valley grass

- e. Buckthorn bark

108. Iridoids can be divided into four main groups. What is the common name for the iridoids obtained from the Valerianaceae family plants?

a. Valepotriates

- b. Common iridoids
- c. Cyclopentane iridoids
- d. Complex iridoid alkaloids
- e. Secoiridoids

109. At the end of each month a pharmacy accountant draws up a balance. What indicator characterizes liabilities of a pharmaceutical company?

- a. Reserves and expenses
- b. Work-in-process inventory
- c. Circulating assets
- d. Accounts receivable

e. Equity capital

110. All the values, traditions, behavioral norms, and views that are characteristic of the employees of a pharmaceutical company together form its:

a. Culture

- b. Integration
- c. -
- d. Diversification
- e. Etiquette

111. What fatty oil should be used to make an ointment with reparative properties?

- a. Oleum Cucurbitae
- b. Oleum Cacao
- c. Oleum Jecoris
- d. Oleum Persicorum

e. Oleum Lini

112. A doctor has written the following prescription for the preparation of a dosage form: Unguenti Benzylpenicillini-natrii 10.0 Misce. Da. Signa: Apply under the eyelid 3 times a day endtabular. What base should be used to make this ointment?

a. A mixture of paraffin and sunflower oil (3:7)

b. A mixture of vaseline (petroleum jelly) "for eye ointments" and anhydrous lanolin (6:4)

c. A mixture of vaseline (petroleum jelly) "for eye ointments" and anhydrous lanolin (7:3)

d. 10.0 of vaseline (petroleum jelly) "for eye ointments"

e. A mixture of vaseline (petroleum jelly) "for eye ointments" and anhydrous lanolin (5:5)

113. The chemical name of 2-benzyl-1H-benzimidazole hydrochloride corresponds with the following medicinal substance:

- a. Indometacin
- b. Phenazepam
- c. Vicasol (Menadione)
- d. Omeprazole

e. Dibazol (Bendazolum)

114. A pharmacy pays considerable attention to the technique of medicine placement in the glass cabinets and on the shelves to create favorable conditions for sales and attracting the attention of consumers. Name this set of measures:

- a. Lobbying
- b. Public relations
- c. Advertising

d. Personal sale

e. Merchandising

115. Passiflora incarnata grass contains a complex of indole alkaloids. What pharmacological group do Passiflora preparations belong to?

- a. Antibacterial agents
- b. Wound healing agents
- c. Laxatives

d. Sedatives

e. Diuretics

116. What parameter is measured using a drum friability tester during tablet quality control?

a. Abrasion resistance

- b. Disintegration
- c. Impurities
- d. Dissolution
- e. Uniformity of dosage

117. What medicinal substance during interaction with a silver nitrate solution forms a white precipitate that quickly colors yellowish and then turns black?

- a. Hydrogen peroxide
- b. Sodium bromide

c. Sodium thiosulfate

- d. Sodium iodide
- e. Sodium chloride

118. 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 molten cocoa butter
- b. Dissolve in vaseline oil
- c. Dissolve in Dimexid (Dimethylsulfoxide)
- d. Dissolve in alcohol

e. Dissolve in minimal quantity of purified water

119. To identify vicasol (menadione), an analytical chemist places this substance moistened with hydrochloric acid into a colorless burner flame. The yellow flame coloring that develops as a result indicates the presence of the following cations in the molecule:

- a. Magnesium
- b. Calcium

c. Sodium

- d. Zinc
- e. Potassium

120. A man with arterial hypertension has blood pressure of 160/100 mm Hg and heart rate of 64/min. and presents with signs of fluid retention (pastose shins, dyspnea, etc.). What hypotensive agent is the drug of choice in case of edema syndrome?

- a. Metoprolol
- b. Amlodipine
- c. Losartan
- d. Enalapril

e. Hydrochlorothiazide

121. 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. Retinol acetate
- b. Nitrofuril

c. Tyrosine

- d. Resorcin
- e. Sulfamethoxazole

122. 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. Referent
- b. -
- c. Centralized
- d. Decentralized
- e. Mixed**

123. Medicinal substance had been received for chemical analysis. Biuret test was performed for identification. Name this substance:

- a. Bromisoval**
- b. Dipyrone (Metamizole)
- c. Diphenhydramine
- d. Iodoform
- e. Benzoic acid

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

- a. Grade reagent
- b. Thioacetamide reagent
- c. Copper-tartrate solution
- d. Thioglycolic acid solution
- e. Cyanogen bromide reagent**

125. What packaging should the pharmacist use for a baby powder?

- a. Parchment
- b. Container with a lid that has holes in it**
- c. Wax paper
- d. Gelatin capsules
- e. Ordinary paper capsules

126. What is the name of the ability to restore the properties of a heterogenous system by perturbation?

- a. Granulation
- b. Resuspension**
- c. Emulsification
- d. Extraction
- e. Dispersion

127. A pharmacy warehouse has received a shipment of drugs. During quality control by an authorized person, there were some drugs of questionable quality detected. What measures should be taken by the authorized person in this case?

- a. Return the shipment to the manufacturer
- b. Dispose of the shipment that contains questionable drugs
- c. Samples of questionable drugs should be sent to the local inspectorate department; the rest of the drug shipment should be quarantined with marking "Do not sell until further notice"**
- d. Draw up a Quality Assessment Report with the defects listed and allow sale of the drug shipment
- e. Allow sale of the drug shipment

128. 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. Calcium antagonists
- c. Nitrates**
- d. beta-adrenergic blockers
- e. Anticoagulants

129. What herbal raw material contains alkaloid glaucine that has a strong antitussive effect?

- a. Chelidonium grass**

- b. Macleaya grass
- c. Vinca minor grass

d. Glaucium flavum grass

- e. Belladonna grass

130. The manager of a pharmacy chain has drawn up a document, in which he asks a pharmaceutical factory to provide him with the information about the assortment of ointments manufactured by this factory. What document was drawn up by the manager?

a. Request

- b. Statement
- c. Complaint
- d. Contract
- e. Offer

131. 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. 0.5 g
- b. 0.3 g
- c. 0.2 g

d. 0.25 g

- e. 0.1 g

132. What factor enables the extraction of maximum amount of alkaloids from the herbal raw material?

- a. Preliminary processing of raw materials for their saturation with 96% alcohol
- b. Slight heating
- c. Intense heating
- d. Herbal raw material should be fresh

e. Certain value of the solution pH

133. A patient with ischemic heart disease and chronic circulatory failure had been taking for a long time one of the drugs listed below. He developed hypokalemia, which resulted in cardiac rhythm disturbance and muscle weakness. What drug can lead to this complication as a side effect?

- a. Nifedipine

b. Furosemide

- c. Lisinopril
- d. Spironolactone
- e. Propranolol

134. A new medicine has appeared on the Ukrainian pharmaceutical market. It is characterized by low sales, low profits, and large marketing expenses for advertising. What stage of the product life cycle is it?

- a. Decline

b. Introduction

- c. Maturity
- d. Saturation
- e. Growth

135. Various types of glass are used in production of parenteral drugs. What type of glass is used for photosensitive substances?

- a. Neutral glass "HC-2"
- b. Alkaline glass "AB-1"
- c. Neutral glass "HC-2A"
- d. Borosilicate neutral glass "УСП -1"

e. Light-resistant neutral glass "CHC-1"

136. 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. Lozenges

b. Suppositories

- c. Spray
- d. Capsules
- e. Tablets

137. Motivation is one of the management functions. A motive can be described as:

- a. Something that is important for a person

b. A conscious incentive to act in a certain way

- c. A certain discomfort, a feeling that something is lacking
- d. -
- e. Psychological characteristics of people that help them acquire certain types of knowledge

138. Various groups of propellants are used in production of aerosols. What group does carbon dioxide CO₂ belong to?

- a. Liquefied gases
- b. Volatile gases
- c. Non-volatile gases
- d. Rarefied gases

e. Compressed gases

139. A pharmaceutical factory uses dragee machines to apply multiple layers of active substances and adjuvants to sugar granules. The end product of this process is the following dosage form:

- a. Dragee tablets
- b. Granules
- c. Microcapsules
- d. Spansules with polymer coating

e. Dragee

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

- a. Dichloroethane
- b. Acetone

c. Ethanol

- d. Chloroform
- e. Glycerine

141. A patient measures out a necessary dose of a mixture, using a tablespoon. How many milliliters of liquid does one tablespoon contain?

- a. 20
- b. 25
- c. 5
- d. 10

e. 15

142. What should be used by an analytical chemist in the pharmacopoeial analysis of medicinal substances that contain iron(III)?

- a. Sodium nitrite solution

b. Potassium thiocyanate solution

- c. Ammonia solution
- d. Potassium permanganate solution
- e. Ammonium chloride solution

143. The essential oil of which plant contains chamazulene, which is formed during steam distillation from matricin?

- a. Inula helenium

b. Chamomila recutita

- c. Melissa officinalis
- d. Valeriana officinalis
- e. Arnica montana

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

a. Valerian rootstock

b. Arrow-wood bark

c. Rhubarb roots

d. Oak bark

e. Buckthorn bark

145. A marketer of a pharmaceutical enterprise uses primary and secondary marketing information for market analysis. What information is considered to be primary?

a. Published in the company's annual report

b. Obtained from publications in scientific magazines

c. Published in mass media

d. Published in statistical reference books

e. Collected for the first time for a specific purpose

146. During visual inspection of a product, the authorized person developed doubts about the quality of the received medicines. What should the authorized person do, to initiate the laboratory testing of the medicine quality?

a. Send the medicines to the Ministry of Health of Ukraine

b. Send the medicines to the nearest compounding pharmacy that employs a dispensing chemist

c. Send the medicines back to the manufacturer

d. Send the medicines to a local laboratory of the State Drugs and Medications Control Service

e. Send the medicines back to the supplier

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

a. Debt settlement with the creditors

b. Monetary funds

c. Salaries payment

d. Bank loans

e. Equity capital

148. If a pharmacy plans to temporarily close for repairs or re-equipment, the State Service of Ukraine on Medicines and Drugs Control must be notified in advance no later than:

a. 3 months before the closure

b. 20 working days before the closure

c. Notification is optional

d. 1 month before the closure

e. 10 working days before the closure

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

a. Purified water

b. Glycerine

c. Glycerine-water solution

d. Vaseline (petroleum jelly)

e. Dimethylsulfoxide

150. An 18-year-old girl was hospitalized with complaints of polyuria, dry skin, loss of weight, and general weakness. She was diagnosed with diabetes mellitus type I, first diagnosed. What drug should be taken first in the course of the therapy?

a. Exenatide

b. Insulin

c. Arphasetin

d. Glibenclamid

e. Metformin

151. The price of a medicine depends on many factors. Which of the listed below is an internal factor of price formation for a pharmaceutical manufacturer?

- a. Customer preferences
- b. Demand for the product
- c. Pricing policy of the competitors
- d. Middleman markup
- e. Manufacturing costs

152. The head manager of a pharmacy has determined the salary of a dispensing chemist for the work performed according to the labor norms. What type of payment is it?

- a. Pension benefit
- b. Base salary
- c. Additional salary
- d. Incentive pay
- e. Reimbursement

153. 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. Theobromine
- b. Caffeine
- c. Theophylline ethylenediamine
- d. Caffeine and sodium benzoate
- e. Theophylline

154. The head manager of a pharmacy uses influence methods that concern property and financial interests of the employees. What management methods are used by the head manager?

- a. Social and political
- b. Social and psychological
- c. Technological
- d. Administrative
- e. Economic

155. 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. Apigenin and luteolin
- b. Quercetin and rutin
- c. Atropine and hyoscyamine
- d. Thymol and carvacrol
- e. Arbutin and methyl arbutin

156. Pharmacy as a healthcare facility fulfills three main functions. Its manufacturing function includes:

- a. Health education of the population
- b. Storage of medical products
- c. Preparation of individual formulations
- d. Pharmaceutical care
- e. Providing access to pharmaceutical information

157. The chemical name of 2,2-(diphenylmethoxy)-N,N-dimethyl-ethanamine hydrochloride corresponds with the following medicinal substance:

- a. Diphenhydramine hydrochloride
- b. Papaverine hydrochloride
- c. Ciprofloxacin hydrochloride
- d. Lidocaine hydrochloride
- e. Ethylmorphine hydrochloride

158. A 6-year-old child developed pneumonia and was prescribed an antibiotic for its treatment. After the treatment the child's hearing deteriorated. What drug could have caused this complication?

- a. Gentamicin

- b. Azithromycin
- c. Ceftriaxone
- d. Penicillin
- e. Ampicillin

159. According to the State Pharmacopoeia of Ukraine monograph, alkalimetry should be used for the quantitative determination of the nicotinic acid. What is used as an indicator in this case?

- a. Calconcarboxylic acid
- b. Phenolphthalein
- c. Sodium eosinate
- d. Potassium chromate
- e. Methylene blue

160. The quantification of acetylsalicylic acid using the method of direct alkalimetry is recommended to be carried out at the temperature no higher than 20°C to prevent a certain process from occurring. What process is it?

- a. Hydrolysis of the ester group
- b. Oxidation of the medicinal substance
- c. Decarboxylation of the medicinal substance
- d. Reduction of the medicinal substance
- e. Precipitation of the formed salt

161. During drug identification, a sample of the substance was moistened with concentrated sulfuric acid and the bottom of the test tube was carefully heated. A white plaque appeared that coated the test tube walls from the inside. What substance can be detected using this reaction?

- a. Theophylline monohydrate
- b. Sodium benzoate
- c. Nitrofurantoin (Nitrofurazone)
- d. Benzocaine
- e. Morphine hydrochloride

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

- a. Ultrasonic dispersion
- b. Coacervation
- c. Maceration
- d. Mechanical dispersion
- e. Solubilization

163. A pharmaceutical company lacks the manufacturing power to satisfy the demand for certain medicines. The company increased the price of these medicines and stopped advertising them. What type of marketing is it?

- a. Demarketing
- b. Synchromarketing
- c. Conversion marketing
- d. Remarketing
- e. Stimulation marketing

164. There are six types of intra-pharmacy control. Which of them requires determination of total mass or volume of a dosage form, as well as the number of doses and the mass of each dose?

- a. Organoleptic control
- b. Chemical control
- c. Survey control
- d. Physical control
- e. Written control

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

- a. 2% collargol solution for infants

- b. Liquid ingestible antibiotics
- c. Injection solutions with thermostable substances
- d. Injection solutions with thermolabile substances
- e. Concentrated solutions for burette systems

166. During storage, suspension instability manifests itself as:

- a. Flocculation of particles
- b. Caking of particles
- c. Sedimentation of particles
- d. Change of particles shape
- e. Dissolution of particles

167. A pharmacist prepares a suspension with a hydrophobic substance. What stabilizer is necessary for this dispersion system?

- a. Boric acid
- b. Glucose
- c. Sodium chloride
- d. Nipagin (Methylparaben)
- e. Methyl cellulose

168. What drug is used to treat hyperthyroidism?

- a. Prednisolone
- b. Oxytocin
- c. Mercazolil (Thiamazole)
- d. Metformin
- e. Insulin

169. What medicinal substance can be mixed with the powder mass without an additional comminution?

- a. Menthol
- b. Camphor
- c. Salicylic acid
- d. Starch
- e. Streptocide (Sulfanilamide)

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

- a. Radices Berberidis
- b. Fructus Capsici
- c. Herba Chelidonii
- d. Folia Belladonnae
- e. Herba Thermopsisidis lanceolatae

171. The duty of a cash desk operator is to perform cash receipt and withdrawal transactions on the grounds of the relevant cash orders. Select from the list below a receipt transaction.

- a. Salary payments
- b. Payment for the goods purchased for the business needs
- c. Issuing a cash sum to be accounted for
- d. Receipt of funds for advance salary payments
- e. Withdrawing sales proceeds for the transfer to the current account

172. What economic parameter characterizes the effectiveness of the pharmacy's commercial, financial, and manufacturing activity?

- a. Circulation of goods
- b. Work productivity
- c. Inventory turnover
- d. Profitability
- e. Stock of goods

173. A 48-year-old woman, who undergoes a prolonged treatment for chronic hepatitis, was diagnosed with pneumonia. What antibacterial agent should she be prescribed in this case?

- a. Rifampicin
- b. Biseptol (Co-trimoxazole)
- c. Tetracycline
- d. Streptomycin
- e. Amoxicillin

174. A 65-year-old patient diagnosed with ischemic heart disease was prescribed acetylsalicylic acid as an antiplatelet agent. What daily dose of this drug will have an antiplatelet effect?

- a. 400 mg
- b. 500 mg
- c. 200 mg
- d. 100 mg
- e. 300 mg

175. When dispensing an iron supplement to be taken orally, the pharmacist must warn the patient that this preparation should not be taken with milk or dairy products. What might happen otherwise, if the patient is not warned?

- a. Prolongation of the effect of iron preparations
- b. Faster absorption of the drug
- c. Formation of poorly soluble chelate complexes
- d. Increased activity of the drug
- e. Accelerated elimination of the drug

176. Select a non-steroid estrogen from the list below:

- a. Prednisolone
- b. Progesterone
- c. Synoestrol (Hexestrol)
- d. Adrenalin
- e. Retabolil (Nandrolone)

177. For 2 weeks, a pharmacy network has been holding a lottery among its visitors who have purchased over 200 UAH worth of medicines. What set of marketing activities does the pharmacy network use in this case?

- a. Advertising
- b. Personal selling
- c. Lobbying
- d. Public relations
- e. Sales promotion

178. According to the State Pharmacopoeia of Ukraine, chemical identification of *Atropa belladonna* grass must be carried out using thin-layer chromatography. What substance is identified on a chromatographic plate after treatment with a reagent?

- a. Hyoscyamine
- b. Gallic acid
- c. Vinblastine
- d. Arbutin
- e. Rutin

179. What type of tax is the Individual Income Tax?

- a. Nationwide, direct
- b. Special
- c. Local, direct
- d. Local, indirect
- e. Nationwide, indirect

180. A herbal raw material was sent for analysis: rounded cordate leaves with incised margins that are irregularly, coarsely, and finely toothed; the upper leaf surface is naked, while its lower surface is

covered in white down. Leaf petioles are thin, with a groove on the upper part, often downy. Leaf blade length is usually 8-15 cm, a petiole is approximately 5 cm long. The upper leaf surface is green, while the lower leaf surface is whitish-gray. No odor. The taste is slightly bitter with a slimy texture.

What herbal raw material is it?

- a. Folia Urticae
- b. Folia Farfarae
- c. Folia Uvae-ursi
- d. Folia Eucalypti
- e. Folia Menthae

181. In production of phytodrugs, the extractant that remains in the herbal raw material is removed and used again in manufacturing. Name this process:

- a. Lyophilization
- b. Sublimation
- c. Rectification
- d. Recuperation
- e. Extraction

182. What amount of the standard pharmacopoeial fluid of aluminum acetate must be taken to prepare 100 mL of 10% Burov's solution?

- a. 6.25 mL
- b. 3 mL
- c. 7.5 mL
- d. 12.5 mL
- e. 10 mL

183. A prescription does not specify the shape of rectal suppositories. What shape would be optimal in such case and therefore should be used by the pharmacist?

- a. Sphere
- b. Torpedo
- c. Ovoid
- d. Cylinder
- e. Pessary

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

- a. Euphylline (Aminophylline)
- b. Papaverine hydrochloride
- c. Ambroxol
- d. Suprastin (Chloropyramine)
- e. Prednisolone

185. A patient, who is undergoing treatment for ischemic heart disease, after physical exertion felt an acute pain in the cardiac area. What drug can be prescribed in this case for quick relief of the pain syndrome?

- a. Nitroglycerine
- b. Prazosin
- c. Captopril
- d. Corglycon (convallatoxin)
- e. Enalapril

186. The calculation of isotonic concentration using the cryoscopic method is based on the following law:

- a. Boyle-Mariotte law
- b. Clapeyron-Mendeleev equation
- c. Dalton's law
- d. Raoult's law

e. -

187. What amount of the standard pharmacopoeial formaldehyde solution must be taken to prepare 100 mL of a 20% formalin solution?

- a. 20 mL
- b. 30 mL
- c. 5 mL
- d. 54 mL
- e. 10 mL