



**STATE ORGANIZATION
«TESTING BOARD FOR PROFESSIONAL COMPETENCE ASSESSMENT OF
HIGHER EDUCATION TRAINEES IN MEDICINE AND PHARMACY AT THE
MINISTRY OF HEALTH OF UKRAINE»**

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Variant 28

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**TEST ITEMS FOR THE EXAM
KROK 2
PHARMACY**

1. Camomile flowers are a popular medicinal substance in scientific medicine. What plant is the source of this herbal raw material?

- A. *Anthemis arvensis*
- B. *Tripleurospermum inodorum*
- C. *Chamomilla recutita*
- D. *Leucanthemum vulgare*
- E. *Anthemis cotula*

2. For authentication of a herbal raw material, several drops of an alcoholic solution of alpha-naphthol and concentrated sulfuric acid were applied to the root section of *Cichorium intybus* L. It resulted in pink-violet coloring that indicates the presence of the following in the herbal raw material:

- A. Inulin
- B. Pectin
- C. Fatty oils
- D. Slime
- E. Essential oils

3. An analytical chemist conducts a thiochrome formation reaction to identify thiamine bromide. What reagent should be used in this case?

- A. Iron(II) sulfate
- B. Potassium ferrocyanide
- C. Potassium bromide
- D. Calcium chloride
- E. Sodium hydroxide

4. A pharmaceutical company wants to strengthen its position in the competitive market environment. It decides to use brand names as a part of its trade policy. What is the purpose of a brand name?

- A. Eligibility for registration in the List of medicines and medical products with state-controlled prices
- B. Justification of a higher price for the medicine
- C. It is a mandatory condition to be able to sell medicines at a reduced price to certain population groups
- D. Differentiation between the competing medicines on the market
- E. Ensuring the necessary quality of medicines

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

6. 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. Labor productivity
- B. Price index
- C. Profitability
- D. Stock of goods
- E. Turnover

7. A pharmaceutical factory produces suppositories with hydrophilic bases. What parameter is measured during standardization of such suppositories?

- A. Dry residue
- B. Mechanical strength
- C. Boiling point
- D. Dissolution time
- E. Resuspension

8. Most types of herbal raw materials are stored dry. However, for juice production the factories receive fresh herbal material. Name one such plant that is processed fresh:

- A. *Capsella bursa-pastoris*
- B. *Althaea officinalis*
- C. *Rosa canina*
- D. *Urtica dioica*
- E. *Plantago major*

9. 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. 62 000 UAH
- B. 60 000 UAH
- C. 32 000 UAH
- D. 2 000 UAH
- E. 90 000 UAH

10. A pharmacist prepares a vaseline-

100

90-
70-
32

based ointment. The vehicle was heated to 40°C. What substance was introduced into the heated vehicle?

- A. Benzoic acid
- B. Camphor
- C. Vinilin (polyvinyl butyl ether)
- D. Anesthesin
- E. Streptocide

Correct
Noted
No prior
of answer
Direct
11. A pharmacy prepares sodium chloride solutions for injections or infusions. What are the additional requirements to the quality of sodium chloride for infusion solutions?

- A. No manganese salt admixtures
- B. Type «for injections»
- C. Anhydrous, analytical grade pure
- D. Chemically pure, depyrogenated
- E. Analytical grade pure

12. When examining a substance with an ester group, you can conduct a reaction that produces:

- A. Indophenol
- B. Diazonium salt
- C. Iron(III) hydroxamate
- D. Azo dye
- E. Berlin blue

13. Preparations of *Panax* roots have tonic and adaptogenic properties and improve mental and physical working ability. If there is no *Panax* tincture in the pharmacy, it can be substituted with preparations of:

- A. *Taraxaci radices*
- B. *Tormentillae radices*
- C. *Araliae mandshuricae radices*
- D. *Glycyrrhizae radices*
- E. *Calami radices*

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

- A. Monocyclic terpene
- B. Glycoside
- C. Bicyclic terpene
- D. Polypeptide
- E. Acyclic terpene

15. The head manager of a pharmacy calls the manager of a pharmaceutical wholesaler to clarify the terms of supply. What type of communication is it?

- A. Internal
- B. External
- C. Vertical
- D. Horizontal
- E. Interlevel

16. 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. Remarketing
- C. Conversion marketing
- D. Synchromarketing
- E. Stimulation marketing

17. Chemical analysis of *Helichrysum* flowers shows positive results of the cyanidin test. This reaction indicates the presence of the following class of compounds:

- A. Alkaloids
- B. Saponins
- C. Coumarins
- D. Polysaccharides
- E. Flavonoids

18. The chief manager of a pharmacy designs its organizational structure and draws up job descriptions for its employees. These arrangements correspond with the following management methods:

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

19. Microscopy of herbal raw material reveals the following diagnostic characters in the microslide: pseudostratified cork, large parenchyma cells, filled with inulin, clearly visible cambium layer, large vessels, schizogenous cavities with essential oil. These features confirm the authenticity of the following herbal raw material:

- A. *Radices Althaeae*
- B. *Rhizomata et radices Rubiae*
- C. *Radices Ononidis*
- D. *Rhizomata et radices Inulae*
- E. *Radices Taraxaci*

20. When activated charcoal is included

into the combined therapy, the sorption of other medicines:

- A. Increases
- B. Activates
- C. Accelerates
- D. Remains unchanged
- ✓ E. Decreases

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

- A. -
- B. Psychological characteristics of people that help them acquire certain types of knowledge
- C. A certain discomfort, a feeling that something is lacking ✗
- D. Something that is important for a person ✗
- E. A conscious incentive to act in a certain way

22. A pharmaceutical company plans to launch the production of a new medicine. What stage of product development includes making the cost estimates for its manufacturing and sales and preliminary calculations of the price and planned profits?

- A. Test marketing
- B. Generation of the ideas
- C. Filtration of the ideas
- D. Commercial manufacturing
- E. Economic analysis

23. Powders are a solid dosage form for internal or external use. What stage is not a part of powder production?

- A. Packaging E
- B. Granulation g
- C. Mixing
- D. Comminution D
- E. Sifting

24. A pharmacist needs to prepare a powder, using the following formulation:

Rp.: *Camphorae* 0.1
Sacchari 0.25
M.f.pulv.
D.t.d.N 10

S. Take one powder thrice a day.

What is the optimal preparation technique in this case?

- A. Fill the mortar pores with glucose and pour it out on a capsule, comminute camphor, mix the ingredients
- B. Fill the mortar pores with glucose and pour it out on a capsule, comminute camphor with alcohol, add glucose from the capsule, mix the ingredients
- C. Measure out camphor into the mortar, add glucose, mix the ingredients
- D. Comminute glucose with alcohol in a mortar, add camphor, mix the ingredients
- E. Put camphor between the layers of glucose, mix the ingredients

25. During merchandise analysis a dispensing chemist should reject herbal raw material if it:

- A. Contains other non-poisonous plants
- B. Contains excessive moisture
- C. Has first-degree vermin infestation
- D. Contains other parts of the target plant
- E. Contains poisonous plants

26. One of the numerical parameters of herbal raw material quality is the amount of extractive substances that can be measured using:

- A. Titrimetry
- B. Spectrophotometry
- C. Gravimetry
- D. Biological standardization
- E. Chromatography

27. The chemical structure of *Strophanthus cardiac* glycosides can be characterized by the presence of the following in position 10 of the steroid ring:

- A. Methoxy group
- B. Alcoholic hydroxyl
- C. Aldehyde group
- D. Ethoxy group
- E. Phenolic hydroxyl

28. The ampoule workshop of a factory produces a 5% oil-based solution of tocopherol acetate for injections. What filling technique should be used to fill the ampoules with this solution?

- A. Vapor condensation
- B. Syringe and vacuum
- C. Syringe
- D. Vacuum
- E. Syringe and vapor condensation

29. What reagent can confirm that

alanine is an α -amino acid?

- A. Barium hydroxide solution
- B. Sulfuric acid solution
- C. Saturated sodium bicarbonate solution
- D. Ninhydrin solution
- E. Sulfosalicylic acid solution

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

- ✓ A. Synoestrol (Hexestrol)
- B. Adrenalin
- C. Prednisolone
- D. Retabolil (Nandrolone)
- E. Progesterone

31. A man came to a pharmacy asking for a litholytic and diuretic drug «Marelin». If there is no such drug in the pharmacy, powdered roots and rhizomes of a certain plant can be recommended as a substitute. Name this plant:

- A. *Rhodiola rosea* ✕
- B. *Rubia tinctorum*
- C. *Dryopteris filix-mas*
- D. *Valeriana officinalis*
- E. *Sanguisorba officinalis*

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

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

33. Prescriptions for psychotropic drugs remain in the pharmacy after the sale. How long must they be kept?

- A. Three years
- B. One month
- C. The prescription must be returned to the patient
- D. One year
- E. Five years

34. A 44-year-old man was diagnosed with chronic hyperacid gastritis. What pharmacological group of drugs would be the most advisable in this case?

- A. Inhibitors of proteolytic enzymes
- ✓ B. Proton pump inhibitors
- C. Alpha-blockers
- D. Glucocorticosteroids
- E. Beta-blockers

35. A formaldehyde solution was received for analysis. What reagent should be used to identify this substance?

- A. Acetic acid
- B. Benzoic acid
- C. Tartaric acid
- D. Chromotropic acid
- E. Hydrochloric acid

36. A pharmacist prepares an oil emulsion with menthol. How should menthol be introduced in this case?

- A. Menthol should be comminuted in a mortar with several drops of ethanol and then mixed with the primary emulsion
- B. Menthol should be comminuted with the emulsifier and then with a part of water, prepared for the dilution of the primary emulsion
- C. Menthol should be dissolved in the purified water
- D. Menthol should be dissolved in oil before preparing the primary emulsion
- E. Menthol should be introduced as a suspension into the prepared emulsion

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

- A. Dimexid (Dimethylsulfoxide)
- B. Glycerine-water solution
- C. Purified water
- D. Glycerine
- E. Vaseline oil (liquid paraffin)

38. During identification these active substances form precipitates in gelatin and alkaloid solutions and produce precipitates with heavy metal salts. These active substances are:

- A. Glycosides
- B. Iridoids
- C. Carbohydrates
- D. Lipids
- E. Tannins

39. In production of extraction drugs with maximum purity level, the extracts are purified using the method of liquid-

liquid extraction, which is the process of:

- A. Heating the extract
- B. Ultrasound exposure
- C. Extraction from one liquid using another
- D. Electrolyte action
- E. Dialysis

40. What adjuvants can increase the viscosity and melting temperature of an ointment base?

- A. Propylene glycol, gelatin
- B. Sodium lauryl sulfate
- C. Benzalkonium chloride
- D. Paraffin, spermaceti
- E. Ethanol, purified water

41. Advertising is the most popular and widely used part of marketing communications system. What cannot be included into the advertisements for medicines?

- A. Recommendation to always read the instructions for the medicines ✓
- B. Objective information about the medicines, presented in such a way that the advertising nature of the message is obvious to the consumers ✓
- C. Claims that the effect of the medicines is guaranteed
- D. General warnings about the usage of medicines and medical products ✓
- E. Full pharmacological name of the medicine and the name of its manufacturer ✓

42. A pharmaceutical company has launched a number of cold relief medicines in the form of syrups and lozenges for kids. What type of market segmentation was used by this company?

- A. -
- B. Geographical
- C. Psychographic
- D. Behavioral
- E. Demographic

43. 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. Biseptol (Co-trimoxazole)
- B. Streptomycin
- C. Tetracycline
- D. Amoxicillin ✓
- E. Rifampicin

44. An analytical chemist uses nitritometry for quantitative determination of procainamide hydrochloride. What indicator is used in this case to determine the titration endpoint?

- A. Methyl red
- B. Phenolphthalein
- C. Methyl orange
- D. Xylenol orange
- E. Tropeolin 00

45. 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 prostaglandin synthesis in the mucosa ✓
- D. Inhibition of lipid peroxidation
- E. Disturbed pain impulse conduction

46. How long must a pharmacy keep the documents that confirm the fact of sale of medicines and medical products?

- A. 5 years
- B. 1 year
- C. 3 months
- D. 3 years
- E. 10 years

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

- A. Recuperation
- B. Sublimation
- C. Rectification
- D. Extraction
- E. Lyophilization

48. Microscopy of transverse section of a bark sample shows a wide dark red cork layer, lamellar collenchyma, druses, bast fibers with a crystal sheath, and medullary rays. What herbal raw material is it?

- A. Birch bark
- B. Willow bark
- C. Buckthorn bark
- D. Oak bark
- E. Ash bark

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

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

50. A pharmacy makes aqueous extracts. What extractant is used in preparation of infusions and decoctions?

- A. Peach oil
- B. Glycerin
- C. Purified water
- D. Mint oil
- E. Ethyl alcohol

Valerian

Ethanol

Alcohol

51. A pharmacy has received a batch of herbal raw material – caraway fruits. What medicinal plant is cultivated for harvesting of this herbal raw material?

- A. *Anisum vulgare*
- B. *Anethum graveolens*
- C. *Foeniculum vulgare*
- D. *Coriandrum sativum*
- E. *Carum carvi*

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

- A. Ceftriaxone
- B. Meropenem
- C. Gentamicin
- D. Biseptol (Co-trimoxazole)
- ✓ E. Clarithromycin

53. 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. Three-level distribution channel
- B. Four-level distribution channel
- C. Two-level distribution channel
- D. One-level distribution channel
- E. Direct distribution channel (zero channel)

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

- A. Glandular «spots»
- B. Glandular hairs
- C. Secretory cells
- D. Essential oil glandules
- E. Essential oil cavities

55. An alkaloid drug has the chemical name of 1,3,7-Trimethyl-3,7-dihydro-1H-purine-2,6-dione. Name this compound:

- A. Chloramphenicol
- B. Caffeine
- C. Phenazone
- D. Ampicillin
- E. Norfloxacin

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

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

57. What structure is authorized to issue permits for individual or collective provision of audit services in Ukraine?

- A. The State Regulatory Service of Ukraine
- B. The Audit Chamber of Ukraine
- C. The Control and Revision Office
- D. The State Service of Ukraine for Drug Control
- E. The State Service of Ukraine for Medicines

58. Merchandising is a complex of communication techniques that aim to increase the sales in the pharmacies. The main goal of merchandising is:

- A. Quick sales of the whole range of goods on offer in the pharmacies and an overall increase of sales
- B. Decrease of the competition between the drug analogues
- C. Expanding the range of pharmaceutical goods
- D. -
- ✗ E. Price-cutting for unpopular medicines

59. What medicinal substance must fill only 2/3 of the vial before sterilization?

- A. Euphyllin (Aminophylline)
- B. Sodium bicarbonate
- C. Calcium chloride
- D. Sodium chloride
- E. Hexamethylenetetramine

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

- A. Calconcarbonic acid
- B. Methylene blue
- C. Phenolphthalein
- D. Sodium eosinate
- E. Potassium chromate

61. According to a decree 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. Zopiklon
- C. Tramadol
- D. Atropine sulfate
- E. Nitrous oxide

62. A man has bought nitroglycerine for sublingual administration in a pharmacy. He wants to know, what side effect might develop after taking this medicine:

- A. Urinary retention
- B. Drowsiness
- C. Increased blood pressure
- ✓ D. Headache
- E. Dry cough

63. A dispensing chemist was hired to work a night shift at a pharmacy. What time is considered to be a night time according to the Ukrainian legislation currently in force?

- A. From 22:00 to 6:00
- B. From 22:00 to 10:00
- C. From 22:00 to 7:00
- D. From 00:00 to 8:00
- E. From 21:00 to 6:00

64. What imidazole derivative affects anaerobic microorganisms and protozoa and is effective against mixed infections?

- A. Dibazol (Bendazol)
- B. Caffeine
- ✓ C. Metronidazole
- D. Asparcam (Potassium aspartate and magnesium aspartate)
- E. Camphor

65. A man with arterial hypertension was taking a beta blocker (bisoprolol) for a long time. When his condition improved, he suddenly stopped taking this drug and it resulted in an acute increase of his blood pressure. What complication of the therapy is it?

- A. Dysbacteriosis
- B. Bradycardia
- ✓ C. Withdrawal syndrome
- D. Bronchospasm
- E. Reduced sensitivity

66. A pharmacist has prepared a medicine, using the following formulation:

*Rp.: Magnesii oxydi
Natrii hydrocarbonatis ana 0.2
M. f. pulv.
D. t. d. №12
S. Take one powder thrice a day.*

What is the optimal preparation technique in this case?

- A. Comminute a part of magnesium oxide, add sodium bicarbonate, add the remaining magnesium oxide, mix the ingredients
- B. Comminute sodium bicarbonate with alcohol, add magnesium oxide, mix the ingredients
- C. Comminute sodium bicarbonate, add magnesium oxide, mix the ingredients
- D. Comminute magnesium oxide with alcohol, add sodium bicarbonate, mix the ingredients
- E. Comminute magnesium oxide, add sodium bicarbonate, mix the ingredients

67. A patient, who has been taking an expectorant, has developed complaints of hypersalivation, rhinitis, and itching skin rash (signs of iodism). What medicine can cause these side effects?

- A. Ambroxol syrup
- B. Ammonium chloride
- ✓ C. Potassium iodide
- D. Infusion of *Thermopsis* grass
- E. Mucaltin

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

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

69. Name the ready-to-use dosage form that is a gelatin capsule, filled with microcapsules that have an oil shell:

- A. Spansule
- B. Pearl
- C. Tubatine
- D. Microcapsule
- E. OROS tablet

70. *Origanum vulgare* herbal raw material is harvested during the flowering. How is it harvested?

- A. The whole plant is dug up
- B. Only the tips of the inflorescences are cut
- C. The grass is cut with a knife or sickle at a distance of 20–30 cm from the ground
- D. The leaves are plucked with the stem
- E. The whole plant with a root is pulled out from the soil

71. Soft gelatin capsules with an elongated neck are called:

- A. Rectal capsules
- B. Tubatines
- C. Medules
- D. Spansules
- E. Microcapsules

72. A pharmacy has received a prescription, written in an incorrect format. In this case, the dispensing chemist, tasked with the incoming control of the prescriptions, must do the following:

- A. Register the prescription in the log book and sell this medicine to the patient
- B. Notify the head manager of the pharmacy
- C. Give the patient a copy of the prescription
- D. Sell this medicine to the patient
- E. Affix the «Invalid prescription» stamp to the prescription and return it to the patient

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

- A. Antioxidants
- B. Thickeners
- C. Lubricants
- D. Disintegrants
- E. Fillers

74. A man came to the ophthalmologist complaining of poor twilight vision. Having collected the patient's medical history, the doctor suspected that these signs could be caused by the lack of a certain vitamin. What vitamin is likely to be deficient in this case?

- A. Phylloquinone (Phytomenadione)
- B. Tocopherol
- C. Retinol
- D. Ergocalciferol
- E. Cholecalciferol

75. A pharmacist has prepared an oak bark decoction. What is the ratio of the herbal raw material to extractant?

- A. 1:5
- B. 1:30
- C. 1:10
- D. 1:20
- E. 1:400

76. Among the various types of tablet coating there are enterosoluble coatings. Where in the body are they dissolved?

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

77. When making ampoules, certain admixtures are introduced into the glass to change its properties. Why is boron oxide added into the glass?

- A. To lower its melting temperature
- B. To change its color
- C. To increase its thermal resistance
- D. To increase its mechanical strength
- E. To improve its chemical resistance

78. What reagent should be used by a dispensing chemist-analyst in a reaction for pyridine ring identification?

- A. Silver nitrate solution
- B. Cyanogen bromide reagent
- C. Chromotropic acid disodium salt
- D. Cobalt nitrate solution
- E. Hydrochloric acid

79. A folic acid molecule has a heterocyclic system, consisting of two condensed heterocycles – pyrimidine and pyrazine. Name this system:

- A. Isoalloxazine
- B. Pteridine
- C. Phenothiazine
- D. Corrin
- E. Purine

80. The analytical laboratory has received calcium chloride. What volumetric solution should be used for quantitative determination of this medicinal substance?

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

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

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

82. Name the drug of choice for treatment of arterial hypertension during pregnancy:

- ✓ A. Alpha-methyldopa
- B. Propranolol
- C. Furosemide
- D. Sodium nitroprusside
- E. Captopril

83. 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 amount of table salt in the diet
- C. Increase the amount of liquids in the diet
- D. Increase the physical exertion
- E. Decrease the physical exertion

84. A regional pharmaceutical market has a large number of pharmaceutical companies, none of which is able to control the market prices. The companies offer interchangeable medicines. What type of market is it?

- A. –
- B. Market with pure (free) competition
- C. Oligopolistic market
- D. Limited monopoly market
- E. Pure monopoly market

85. In the course of its commercial activity, a pharmacy performs cashless transactions. What type of account must be opened in this case in a banking establishment for the purpose of storing the monetary funds and performing all types of transactions with such accounts, according to the current Ukrainian legislation?

- A. Currency account
- B. Deposit account
- C. Temporary account
- D. Card account
- E. Current account

86. *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. Leaves and seeds
- E. Roots and fruits

87. A pharmacist has prepared a vehicle for eye ointments. What method of vehicle sterilization should be chosen in this case?

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

88. The marketing team of a pharmaceutical company has performed a comparative analysis of internal environment and external conditions. They have analyzed strengths and weaknesses, opportunities and threats. The marketing team has performed:

- A. SWOT analysis
- B. VEN analysis
- C. -
- D. ABC analysis
- E. PEST analysis

89. A pharmacist has prepared suppositories with novocaine (procaine) hydrochloride using a rolling technique. The novocaine hydrochloride content is less than 5%. How is this substance introduced into the base in this case?

- A. Dissolution in the minimal amount of alcohol-water-glycerin mixture
- B. Dissolution in the minimal amount of castor oil
- C. Dissolution in ethyl alcohol
- D. Dissolution in the melted base
- E. Dissolution in the minimal amount of water

90. During a practical session in pharmaceutical chemistry, a pharmaceutical student performs quantitative determination of caffeine substance. What method according to the State Pharmacopoeia of Ukraine should be used for this purpose?

- A. Acid-base titration in a nonaqueous medium
- B. Permanganatometry
- C. Bromometry
- D. Cerimetry
- E. Complexometric titration

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

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

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

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

93. A woman wants to stock the home first aid kit for her 4-month-old baby. She asked a dispensing chemist to recommend her an antipyretic for this purpose. What medicine and what dosage form would you recommend in this case?

- A. Acetylsalicylic acid powder ✗
- B. Ibuprofen tablets ✗
- C. Diclofenac sodium tablets ✗
- ✓ D. Paracetamol rectal suppositories
- E. Acetylsalicylic acid tablets ✗

94. The «Pharmastar» pharmaceutical company develops new dosage forms for its medicines. What type of product policy in marketing is it?

- A. Modernization
- B. Reduction
- C. Product modification
- D. Differentiation
- E. Diversification

95. What lubricants are used in tablet manufacturing?

- A. Calcium stearate, stearic acid ✗
- B. Water, ethanol ✗
- C. Solutions of high-molecular compounds ✗
- D. Tween 80, Aerosil ✗
- E. Starch paste ✗

96. There are certain legal requirements to the format of a prescription. Physicians that have a private practice must state the following in the upper left corner of a prescription form:

- A. License number
- B. Own address, license number and its date of issue
- C. Medical facility seal
- D. Surname and initials of the doctor
- E. Own address

97. 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. Torpedo
- B. Cylinder
- C. Ovoid
- D. Pessary,
- E. Sphere

98. When preparing suspensions, the medicinal substance is ground with a small amount of liquid. What is the optimal amount of liquid for comminution of 20 mg of zinc oxide according to the Deriagin's rule?

- A. 0.5 mL
- B. 2 mL
- C. 5 mL
- D. 1 mL
- E. 10 mL

99. In the course of the pharmacotherapy for exacerbation of chronic bronchitis, the patient developed dyspeptic disorders, photodermatitis, and disturbed hepatic function. Which of the prescribed drugs could have caused these signs?

- A. Ambroxol
- B. Acetylcysteine
- C. Doxycycline
- D. Ascorbic acid
- E. Codeine phosphate

100. How many mL of nitrofurazone (furacilin) is it necessary to measure out for preparation of 250 mL of nitrofurazone solution (1:5000)?

- A. 0.5
- B. 5.0
- C. 0.05
- D. 0.025
- E. 0.25

$$250 \div 5000 =$$

101. *Achillea* grass is harvested during a certain stage of plant growth. Name this stage:

- A. During the shoot growth
- B. Before the flowering
- C. During the fruiting
- D. During the budding
- E. During mass flowering

102. An accountant performs necessary calculations for remuneration of labor. Name the type of remuneration that is due for the work, carried out according to the work standards, and is to be paid in the amount determined by the basic or piece wages (for factory workers) and salaries (for office workers):

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

103. A marketing consultancy was comparing various drugs containing salbutamol. It was using such parameters as the cost of a treatment course, width of a distribution channel, frequency of medications, etc. The consultancy was determining the:

- A. Market stability
- B. Novelty of the drugs
- C. Competitiveness of the drugs
- D. Quality of the drugs
- E. Life cycle stage of the drugs

104. The head manager of Pharmacy №5 that belongs to the «Hippocrates» company was transferred to be the head manager of Pharmacy №1 within the same network. What type of human resources movement is it?

- A. Horizontal rotation
- B. Mixed rotation
- C. Vertical rotation
- D. Diagonal rotation
- E. Employee turnover

105. The medicinal plants of the *Fabaceae* family contain various groups of bioactive substances. What representative of this family contains flavonoids and is used as an industrial source of rutin?

- A. *Thermopsis alterniflora*
- B. *Glycyrrhiza glabra*
- C. *Styphnolobium japonicum*
- D. *Ononis arvensis*
- E. *Bidens tripartita*

106. The mother of a child came to a pharmacy to buy an anti-inflammatory medicine that can relieve the muscle pain in her 10-year-old son. What medicine would you recommend her?

- A. Naproxen,
- B. Diclofenac x
- C. Acetylsalicylic acid x
- D. Nimesulide x
- ✓ E. Ibuprofen x

107. Profitability is one of the economic indicators of the pharmacy's trading activity. It is calculated as a:

- A. Ratio of the sum of profits to the sum of cost price of the goods x100%
- B. Ratio of the sum of profits to the sum of turnover x100%
- C. -
- D. Ratio of the sum of profits to the sum of expences x100%
- E. Ratio of the sum of profits to the total cost of fixed assets x100%

108. 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. Commission agents
- C. Brokers
- D. Agents
- ✓ E. Dealers

109. What medicinal substance has an imidazole fragment in its structure?

- A. Pilocarpine hydrochloride
- B. Nitrofuraf
- C. Thiamine bromide
- D. Nicotinic acid
- E. Phenazone

110. 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. Fetotoxic
- B. Carcinogenic
- C. Embryotoxic
- D. Mutagenic
- ✓ E. Teratogenic

111. Pharmacy workers can receive an extra pay, if they combine several professions or positions, take upon themselves the duties of a temporarily absent employee, or have to manage an increased workload. In this case, the maximum possible bonus constitutes the following percentage of the employee's salary:

- A. 40%
- B. 20%
- C. 10%
- D. 30%
- E. 50%

112. A pharmacy has received a formulation for eye drops with protargol (silver proteinate). What substance will be used to make the eye drops isotonic?

- A. Boric acid
- B. Sodium nitrate
- C. No isotonation is needed
- D. Sodium sulfate
- ✓ E. Sodium chloride

113. 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. Sociopolitical
- B. Economic
- C. Psychosocial
- D. Administrative
- ✓ E. Technological

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

- A. Potassium permanganate solution
- B. Potassium thiocyanate solution
- C. Ammonium chloride solution
- D. Ammonia solution
- ✓ E. Sodium nitrite solution

115. A pharmacist has prepared an ascorbic acid solution for injections. What stabilizer was used in this case?

- A. Boric acid
- B. Sodium sulfite
- C. 0.1 M solution of sodium hydroxide
- D. 0.1 M solution of hydrochloric acid
- E. Weibel stabilizer

116. 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. *Foeniculum vulgare*
- B. *Crataegus sanguinea*
- C. *Tanacetum vulgare*
- D. *Betula pendula*
- E. *Calendula officinalis*

117. 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. Tax Inspectorate
- C. Chief physician of a medical facility
- D. Local authorities
- E. -

118. What drug should be used first in case of anaphylactic shock?

- A. Dibazol (Bendazol)
- B. Prednisolone
- C. Euphyllin (Aminophylline)
- D. Fexofenadine
- E. Loratadine

119. According to the State Pharmacopoeia of Ukraine, cerimetry should be used to determine the quantitative content of paracetamol. What solution is used as a titrant in this case?

- A. Iodine monochloride
- B. Silver nitrate
- C. Cerium sulfate
- D. Potassium permanganate
- E. Hydrochloric acid

120. A pharmaceutical factory prepares syrups for taste-masking of medicines. What substance must be removed from such syrups to prevent jellification of the end product?

- A. Fructose
- B. Starch
- C. Glucose
- D. Pectin
- E. Sucrose

121. A pharmacy must be closed during inventory-taking. How long can this process take?

- A. No more than 10 days
- B. No more than 14 days
- C. No more than 6 days
- D. No more than 3 days
- E. No more than 7 days

122. 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. Enalapril
- B. Amlodipine
- C. Losartan
- D. Metoprolol
- E. Hydrochlorothiazide

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

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

124. The marketing department of a pharmaceutical factory determined that the demand for the echinacea syrup for kids greatly fluctuates in response to the smallest changes in its price. What type of demand is it?

- A. Inelastic demand
- B. Elastic demand
- C. Unitary demand
- D. Perfectly inelastic demand
- E. Universal demand

125. A pharmacy has received the following formulation:

Rp.: *Spiritus aethylici* 20 ml
Resorcini 0.2

M.D.S. Wipe the affected skin areas twice a day.

What is the optimal preparation technique in this case?

- A. Measure out the substance into a stand, measure out the solvent
- B. Comminute the substance in a mortar, add the solvent
- C. Measure out the solvent into a stand, measure out the substance
- D. Measure out ethyl alcohol into a vial for dispensing, measure out salicylic acid
- E. Measure out the substance into a vial for dispensing, measure out ethyl alcohol, shake the vial

~~126.~~ A pharmacy prepares extemporaneous drugs. Who sets the retail prices and labor charges for these pharmacy-made medicines?

- A. Local council
- B. Inspectorate for medicine quality control
- C. Pharmacy
- D. The Ministry of Health
- E. Regional state administration

127. 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 process of electrolyte action
- C. The process of heating the extract
- D. The characteristic of biopolymer molecules that does not allow them to pass through semi-permeable membranes
- E. The process of extraction from one liquid using another liquid

128. What medicinal substance has benzimidazole in its structure?

- A. Metamizole sodium salt (Analgin)
- B. Dibazol (Bendazol)
- C. Nitrofuril (Furacilin)
- D. Mercazolil (Thiamazole)
- E. Diphenhydramine hydrochloride (Dimedrol)

~~129.~~ An analytical chemist has conducted a qualitative reaction to confirm the presence of a steroid ring in the prednisolone molecule. For this purpose the following reagent was used:

- A. Hydroxylamine hydrochloride
- B. Concentrated sulfuric acid
- C. Acetic anhydride
- D. Copper tartrate reagent
- E. Phenylhydrazine sulfate

~~130.~~ Licorice roots contain saponins. What reaction can prove their presence in the herbal raw material?

- A. Fehling's test
- B. Molisch's test
- C. Reaction with iron(III) chloride
- D. Foaming reaction
- E. Dragendorff's test

131. A dispensing chemist uses iodometry (back titration) for quantitative determination of caffeine medicinal substance. What indicator is used in this case?

- A. Eriochrome black
- B. Litmus paper
- C. Starch
- D. Phenolphthalein
- E. Phenol red

132. Erythromycin belongs to the following type of antibiotics, based on its chemical structure:

- A. Aromatic antibiotics
- B. β -lactams
- C. Polyene antibiotics
- D. Macrolides
- E. Polypeptides

~~133.~~ The head manager of a pharmacy has decided to apply various management methods as a means of influencing separate employees and the staff as a whole. What management methods can be classified as psychosocial?

- A. The process of salary calculation for the sales department employees
- B. Plan for improvement of the working conditions at the pharmaceutical facility
- C. The process of distribution of duties between the technical level managers
- D. -
- E. Material stimuli that include salary rates, extra pay, increments, bonuses, etc.

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

black?

- A. Sodium chloride
- B. Sodium iodide
- C. Hydrogen peroxide
- D. Sodium bromide
- E. Sodium thiosulfate

135. What should be used by a dispensing chemist-analyst for identification of bismuth-containing medicinal substances?

- A. Potassium permanganate solution
- B. Cobalt nitrate solution
- C. Beta-naphthol solution
- D. Thiourea solution
- E. Iron(III) sulfate solution

136. A dispensing chemist-technologist has accepted a prescription for eye drops with adrenaline hydrochloride. What characteristic of adrenaline hydrochloride must be taken into account, when preparing the eye drops?

- A. Low solubility in water
- B. Poor solubility in water
- C. Thermolability
- D. Volatility
- E. Thermal stability

137. After a surgery, a man was receiving promedol (trimeperidine) for a long time. When this drug was discontinued, the patient developed psychic and somatic disturbances. What phenomenon is it?

- A. Tachyphylaxis
- B. Steal syndrome
- C. Rebound effect
- D. Idiosyncrasy
- E. Withdrawal syndrome

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

- A. *Arctostaphylos* leaves
- B. Mint leaves
- C. Buckthorn bark
- D. *Thermopsis* grass
- E. Marshmallow roots

139. A pharmacist prepares rectal suppositories in the pharmacy. Name the acceptable range, within which the average weight of such suppositories may vary:

- A. 1.0–4.0
- B. 2.0–5.0
- C. 5.0–8.0
- D. 3.0–6.0
- E. 4.0–7.0

140. A pharmacy has decided to obtain a license to make extemporaneous preparations. For this purpose it purchased a refrigerator, a cabinet dryer, and other industrial equipment. The purchased equipment belongs to the following type of assets:

- A. Goods
- B. Fixed assets
- C. Package
- D. Non-negotiable tangible assets
- E. Not accounted as assets

141. A pharmacy has received a prescription written on an F-3 form. The dispensing chemist, tasked with the incoming control of the prescription, noted that it was missing certain mandatory details. Such prescription forms must always have the following:

- A. Medical facility stamp, doctor's seal and signature, signature of the head manager of the medical facility, seal of the medical facility
- B. Doctor's personal seal and signature
- C. Medical facility stamp, doctor's seal and signature, signature of the head manager of the medical facility
- D. Medical facility stamp, signature of the head manager of the medical facility, seal of the medical facility
- E. Signature of the head manager of the medical facility or signature of the deputy head manager for medical work

142. If potassium salts are put into the colorless flame of a gas burner, the flame colors:

- A. Green
- B. Violet
- C. Brick-red
- D. Red
- E. Yellow

143. A woman with diabetes mellitus has developed hypoglycemia after insulin overdose. What measures should be taken at the first signs of hypoglycemia?

Senyng
Hwy
Artes

- A. Make an insulin injection
- B. Introduce 0.1% adrenaline solution subcutaneously
- C. Give nitroglycerine sublingually
- D. Make an intramuscular injection of caffeine
- ✓ E. Give the patient a sugar lump to eat and a cup of warm sweetened tea

144. A pharmaceutical factory produces various types of tablets. What is the purpose of *Solublettae* tablets?

- A. Implantation
- B. Rectal administration ✗
- C. Preparation of solutions for various pharmaceutical purposes
- D. Sublingual administration ✗
- E. Preparation of solutions for injections

145. 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. Penicillin
- ✓ B. Gentamicin
- C. Ampicillin
- D. Azithromycin
- E. Ceftriaxone

146. Money received for the goods sold are being transferred to the pharmacy from its outlet. What document must be drawn up by a cashier for the receipt of this monetary sum?

- A. Cash withdrawal order
- B. Payment order
- C. Cash receipt order .
- D. Bank statement
- E. Cashier's check

147. The quality control analytical laboratory analyzes a medicine with sodium benzoate. What reagent will form a pink-yellow precipitate with the medicine being analyzed?

- A. Sodium nitrate solution
- B. Iron(III) chloride solution
- C. Sodium bicarbonate solution
- D. Potassium permanganate solution
- E. Magnesium sulfate solution

148. When obtaining individual substances, the choice of an extractant is determined mainly by its:

- A. Selectivity toward active substances
- B. Thermostability
- C. Anti-hydrolysis effect
- D. Cost
- E. Pharmacological inertness

149. A dispensing chemist-analyst identifies phenol, using a phenolic hydroxyl reaction. What reagent is necessary for this reaction?

- A. Sulfuric acid
- B. Sodium sulfate
- C. Calcium chloride
- D. Iron(III) chloride
- E. Potassium chloride

150. Mandatory payroll deductions are withheld from the salary of pharmacy workers. Specify the tax rate on income of natural persons:

- A. 18%
- B. 5%
- C. 20%
- D. 15%
- E. 0%