**State Final Exam. Test. Pharmaceutical chemistry**

1. A necessary condition for the titration of chlorides and bromides by the Mohr method is

1) medium should be close to neutral

2) alkaline medium;

3) the presence of nitric acid;

4) acidic medium;

2. The impurities of reducing substances in purified water is established

1) by preservation of the color of a solution of potassium permanganate in a sulfuric acid medium

2) by the appearance of a blue color from the addition of a solution of diphenylamine

3) by preservation of the color of a solution of potassium permanganate in an environment of hydrochloric acid

4) by discoloration of a solution of potassium permanganate in a sulfuric acid medium

3. State Pharmacopoeia discovering the impurities of nitrates and nitrites in purified water

1) by reaction with a solution of diphenylamine in a mixture of concentrated sulfuric acid

2) by reaction with concentrated sulfuric acid

3) by discoloration of a solution of potassium permanganate in a sulfuric acid medium

4) by reaction with a solution of diphenylamine

4. During analysis for chloride ions in the preparation, at the same time, we can identify:

1) bromide ion

2) phosphate ion

3) sulfide ion

4) carbonate ion

5. The general method for the quantitative determination of a solution of hydrogen peroxide, sodium nitrite, iron (II) sulfate, reduced iron is

1) permanganatometry

2) alkalimetry

3) refractometry

4) complexometry

6. You can distinguish a solution of sodium bicarbonate from a solution of sodium carbonate

1) according to the indicator phenolphthalein

2) according to the litmus indicator

3) according to the methyl red indicator

4) by reaction with acetic acid

7. Reagents that detect the acidic properties of medicinal substances include

1) AgNO3, NaOH,

2) NaNO2, CoCl2, AgNO3

3) FeCl3FeCl3, CuSO4, NaNO2

4) FeCl3, HCl, CoCl2

8. Reagents that detect the ability of medicinal substances to oxidize include

1) Fehling's reagent, iodine solution, AgNO3

2) FeCl3, Co(NO3)2, Fehling's reagent

3) AgNO3, FeCl3, NaOH

4) FeCl3, HCl, CoCl2

9. Calcium chloride is

1) colorless crystals, odorless, bitter-salty taste, very hygroscopic, float on the shore;

2) colorless prismatic weathering crystals;

3) white fine light powder, odorless;

4) white or white with a yellowish tint amorphous powder

10. Change in appearance when calcined is observing for

1) zinc oxide

2) sodium chloride

3) magnesium oxide

4) sodium bicarbonate

11. In chemical reactions, they exhibit the properties of an oxidizing agent and a reducing agent.

1) hydrogen peroxide

2) silver nitrate

3) copper sulfate

4) potassium iodide

12. When interacting with a solution of potassium iodide, it forms characteristic precipitates that is soluble in an excess of the reagent

1) bismuth nitrate basic

2) copper sulfate

3) sodium nitrite

4) silver nitrate

13. The State Pharmacopeia recommends a solution of iron (III) chloride as a reagent when carrying out general tests for authenticity for

1) acetates

2) sulfates

3) chlorides

4) phosphates

14. It has a crystallization water in its structure:

1) calcium chloride

2) magnesium oxide

3) sodium chloride

4) zinc oxide

15. Magnesium sulfate gives positive reactions with

1) barium chloride - BaCl2

2) silver nitrate - AgNO3

3) sodium sulfide - Na2S

4) ammonium oxalate - (NH4) 2C2O4

16. For which group of preparations can chloramine be used in a qualitative analysis as an oxidizing agent?

1) for iodides;

2) for chlorides;

3) for iodine preparations;

4) for sodium nitrite.

17. Chloride ions are detected by:

1) a solution of silver nitrate in the presence of nitric acid;

2) a solution of silver nitrate in the presence of ammonia;

3) an aqueous solution of silver nitrate;

4) a solution of silver nitrate in the presence of sulfuric acid.

18. What ion gives a white precipitate with a solution of barium chloride in the presence of hydrochloric acid?

1) sulfate ion;

2) nitrate ion;

3) phosphate ion;

4) sulfide ion.

19. The alkaline reaction of the aqueous solution medium has:

1) potassium acetate;

2) potassium bromide;

3) sodium chloride;

4) sodium bicarbonate.

20. The impurity of mineral acids in boric acid can be determined by:

1) methyl orange;

2) red litmus;

3) phenolphthalein;

4) litmus blue.

21. Quantitative determination of sodium bicarbonate is carried out by the method:

1) alkalimetry

2) acidimetry;

3) acidimetry (back titration);

4) complexometry.

22. It does not transmit x-rays and it is used in x-ray studies:

1) barium sulfate;

2) sodium tetraborate;

3) lithium carbonate;

4) boric acid.

23. The color of the solution at the equivalence point during direct complexometric titration is due to the formation

1) free indicator;

2) a metal complex with an indicator;

3) metal complex with trilon B

4) an excess of Trilon B;

24. Indicate the medium that is necessary for the determination of halides by the Fajans method.

1) slightly acidic

2) strongly acidic

3) neutral

4) alkaline

25. An indicator is used in the nitritometric method

1) starch iodine paper;

2) methyl orange;

3) crystal violet;

4) phenolphthalein.

26. Indicate the medium that is necessary for the determination of halides by the Folhard method

1) strongly acidic;

2) alkaline;

3) strongly alkaline;

4) neutral.

27. Crystalline hydrates, depending on storage conditions, can exhibit properties of

1) hygroscopic substances;

2) reducing agents;

3) oxidizers;

4) volatile substances.

28. The separation of substances in the adsorption version in thin layer chromatography is based on the process:

1) sorption-desorption;

2) crystallization;

3) filtration;

4) precipitation.

29. Indicate which of the following requirements for analysis methods is not essential for obtaining the result?

1) analysis time

2) correctness

3) sensitivity

4) reproducibility

30. Indicate which type of reaction from the following can be chosen to detect an unsaturated double bond.

1) oxidation

2) precipitation

3) substitution

4) polymerization

31. Indicate the accuracy of weighing on an analytical balance when taking an "accurate sample"

1) 0.0002 g

2) 0.00002 g

3) 0.0001 g

4) 0.001 g

32. Specify the upper limit of the content of individual drugs

1) 100.5%

2) 100.3%

3) 100.4%

4) 100.2%

33. Specify the amount of solvent (ml) needed to dissolve 1 g of the substance. Conditional term "very easily soluble" (State Pharmacopeia)

1) up to 1 ml

2) 1 to 10 ml

3) 10 to 30 ml

4) 30 to 100 ml

34. Which of the following methods is based on measuring the absorption of electromagnetic radiation?

1) photometry

2) polarimetry

3) polarography

4) refractometry

35. Which of the following methods is based on a visual comparison of the color intensity of solutions of different concentrations?

1) colorimetry

2) photometry

3) spectrophotometry

4) fluorimetry

36. The concentration of titrated solutions according to State Pharmacopeia is expressed through

1) molar concentration equivalent

2) molar concentration

3) percentage concentration

4) molar concentration

37. The titer of the analyzing substance is the amount of g of the substance

1) in 1 ml of solution

2) in 1000 ml of solution

3) in 1000 ml of solvent

4) in 100 ml of solution

5) corresponding to 1 ml of titrant

38. In the quantitative determination of paracetamol by nitritometry, a preliminary acid hydrolysis step is necessary because:

1) acid hydrolysis is carried out to deblock the primary amino group;

2) the chemical structure of paracetamol includes an ester group;

3) the chemical structure of paracetamol includes a simple ether group;

4) with nitritometric quantitative determination of paracetamol preliminary acid hydrolysis is not carried out.

39. The amide group is present in the chemical structure:

1) oxafenamide;

2) anesthesin;

3) sodium citrate;

4) thymol

40. Hydroxam test can be used to identify:

1) acetylsalicylic acid;

2) thymol;

3) sodium benzoate;

4) resorcinol.

41. Unsubstituted phenolic hydroxyl in the chemical structure has a medicinal substance:

1) paracetamol;

2) acetylsalicylic acid;

3) sodium benzoate;

4) menthol.

42. The reagent that allows to differentiate steroid hormones is:

1) concentrated sulfuric acid;

2) Fehling's reagent;

3) concentrated nitric acid solution;

4) hydroxylamine solution.

43. Cortisone interacts with hydroxylamine due to:

1) keto groups in the 3rd position;

2) steroid cycle;

3) alcohol hydroxyl;

4) the osketo group.

44. The reaction of formation of 2,4-dinitrophenylhydrazone is used to quantify:

1) progesterone;

2) prednisone;

3) ethinylestradiol;

4) cortisone acetate.

45. Prednisolone acetate can be distinguished from cortisone acetate by reaction with:

1) concentrated sulfuric acid;

2) hydroxylamine solution;

3) Fehling's reagent;

4) a solution of phenylhydrazine.

46. Desoxycorticosterone gives an orange-yellow precipitate with:

1) Fehling's reagent;

2) silver nitrate solution;

3) acetic anhydride;

4) hydroxylamine solution.

47. When identifying impurities in cortisone acetate, the following method is used:

1) TLC;

2) gravimetry;

3) photoelectric colorimetry;

4) UV spectrophotometry;

48. The reaction of the formation of an ester, followed by the determination of its melting point is used for identification:

1) sinestrol;

2) testosterone propionate;

3) cortisone acetate;

4) methyltestosterone

49. The acidic properties of ascorbic acid are due to the presence in the structure of:

1) two enol hydroxyls;

2) one enol hydroxyl;

3) phenolic hydroxyls;

4) lactone ring.

50. In the quantitative determination of methionine by the iodometric method, the following substance is formed:

1) methionine sulfoxide;

2) methionine disulfide;

3) hydrogen sulfide;

4) methionine sulfate.

51. The presence of peroxide compounds as an unacceptable impurity in ether for anesthesia is determined by reaction with:

1) potassium iodide;

2) sodium hydroxide;

3) potassium permanganate in an acidic medium;

4) chromotropic acid.

52. Both ammonium salts and paraforms are determined in one of the medicines:

1) hexamethylenetetramine;

2) formaldehyde solution;

3) ethyl alcohol;

4) glucose.

53. To detect aldehydes as impurities in other drugs, the most sensitive reaction is used with:

1) Nessler's reagent;

2) Tollens' reagent;

3) salicylic acid in the presence of sulfuric acid;

4) Fehling's reagent;

54. During storage a formaldehyde solution, a white precipitate formed in it. This is due to:

1) storage at temperatures below 9 °C;

2) storage of the drug at a temperature above 9 °C;

3) storage with moisture access;

4) storage in a light glass container.

55. The value of M (1 / z) ascorbic acid in iodatometric quantitative determination is:

1) 1/2 M ascorbic acid;

2) 1 M ascorbic acid;

3) 1/3 M ascorbic acid;

4) 1/4 M ascorbic acid.