CONTROL AND MEASURING TOOLS

Questions of the program for the midterm control 1

Educational program	6B07201 «Technology of pharmaceutical production»
Discipline code	MOFA 4301
Discipline	Methods and equipment for pharmaceutical analysis
Number of credits (ECTS):	120 hours/4 credits
Course	4
Semester	VII

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Protocol №21, 10.06.2024

Questions for the midterm assessment program 1

1. What is the absorption spectrum of a substance? What do absorption spectra in the visible region represent?
2. The device and operating principle of a refractometer. Rules for working with refractometers.
3. The fundamental law of light absorption.
4. What is the refractive index, what factors does it depend on, and how is it calculated?
5. What causes the selective absorption of light by molecules?
6. Define interpolation and provide a specific example.
7. How is a monochromatic light flux obtained in a spectrophotometer?
8. Application of IR spectroscopy methods in determining the authenticity of drugs. The role of the detector.
9. What is the role of chromophore and auxochrome groups in a molecule when recording absorption spectra?
10. Methods for calculating the concentration of a solution using the refractometric method of analysis.
11. Equipment for conducting polarimetry.
12. Define the following terms: chromophore, bathochromic, hypsochromic, hyperchromic, hypochromic effects.
13. On what is the determination of the concentration of solutions using photometric analysis methods based?
14. Features of the analysis of tablet dosage forms.
15. The device of a spectrophotometer and its operating principle.
16. List the main characteristics of spectral instruments.
17. Rules for working with KFK and SF-2000.
18. How are components on paper and thin-layer chromatograms detected and identified?
19. Features of the analysis of capsule dosage forms?
20. What quantities does the Beer-Lambert-Bouguer law relate?
21. Mechanisms of sorption (adsorption, absorption), desorption.
22. What is optical density?
23. Classification of chromatography by execution technique.
24. List the main components of a photoelectrocolorimeter and indicate their purpose.
25. Requirements for the quality of dragees.
26. What are light filters? What is their purpose?
27. How is the uniformity of dosage in tablets tested?

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Questions of the program for the midterm control 2

1. Methods based on the use of dependence of physical properties on chemical composition of analyzed substances.
2. Chromatogram. Methods of detection of substances on chromatogram in TLC.
3. Possibilities and limitations of application of TLC method in pharmacy.
4. Name three methods of detection in gas and liquid chromatography.
5. Main stages (steps) of chromatography in thin layer of sorbent.
6. Potentiometric titration.
7. Validation of methods of test "Dissolution".
8. Polarimetry.
9. Instrumental methods of testing solid dosage forms.
10. Chromatographic methods in pharmaceutical analysis.
11. Refractometry
12. Disintegration test of solid dosage forms.
13. Optical methods of research in pharmaceutical analysis.
14. Strength and abrasion test of solid dosage forms.
15. Application of IR spectroscopy in pharmaceutical analysis.
16. Definitions of the capsule dissolution test?
17. Theoretical foundations of liquid chromatography. Classification. Advantages and disadvantages.
18. Instrumental testing methods for individual quality indicators.
19. Definitions of capsule disintegration?
20. Theoretical foundations of gas chromatography.
21. Validation characteristics and requirements.
22. Application of mass spectroscopy in pharmaceutical analysis.
23. Potentiometry.
24. Mass spectroscopy.
25. Liquid chromatography in drug quality control.
26. Methods based on the use of a magnetic field. Application of NMR spectroscopy in pharmaceutical analysis.
27. Near IR spectroscopy. Theoretical foundations of methods. Basic concepts.
28. Anodic polarography.
29. Cathode polarography.
30. Equipment for liquid chromatography in pharmaceutical analysis.
31. Gas chromatography in quality control of medicines.
32. Equipment for gas chromatography.
33. Optical research methods in pharmaceutical analysis.
34. Instrumental methods for testing solid dosage forms.
35. Liquid chromatography in quality control of medicines.

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22. What is optical density?
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26. What are light filters? What is their purpose?
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28. Methods based on the use of the dependence of physical properties on the chemical composition of the analyzed substances.
29. Chromatogram. Methods for detecting substances on a chromatogram in TLC.
30. Possibilities and limitations of using the TLC method in pharmacy.
31. Name three detection methods in gas and liquid chromatography.
32. The main stages of thin-layer chromatography.
33. Potentiometric titration.
34. Validation of the "Dissolution" test methods.
35. Polarimetry.
36. Instrumental methods for testing solid dosage forms.
37. Chromatographic methods in pharmaceutical analysis.
38. Refractometry.
39. The disintegration test for solid dosage forms.
40. Optical methods of investigation in pharmaceutical analysis.
41. The test for the strength and abrasion of solid dosage forms.
42. Application of IR spectroscopy in pharmaceutical analysis.
43. Definitions of the "Dissolution" test for capsules?
44. Theoretical foundations of liquid chromatography. Classification. Advantages and disadvantages.
45. Instrumental methods for testing individual quality indicators.
46. Definitions of the disintegration of capsules?
47. Theoretical foundations of gas chromatography.
48. Validation characteristics and requirements.
49. Application of Mass spectrometry in pharmaceutical analysis.
50. Potentiometry.
51. Mass spectrometry.
52. Liquid chromatography in quality control of drugs.
53. Methods based on the use of a magnetic field. Application of NMR spectroscopy in pharmaceutical analysis.
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55. Anodic polarography.
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