**AL-FARABI KAZAKH NATIONAL UNIVERSITY**

**Faculty of Chemistry and Chemical Technology**

**Department of Chemistry and Technology of**

**Organic Substances, Natural Compounds and Polymers**

### Final exam program for the discipline

Educational program:

6B07201 – Pharmaceutical technology

**Almaty 2021.**

The final exam program is drawn up by Senior Lecturer at the Department of chemistry and technology of оrganic substances, natural compounds and polymers, PhD Kipchakbayeva A.K.

Considered and recommended at a meeting of the Department of сhemistry and technology of organic substances, natural compounds and polymers

from «\_23\_\_ » \_\_\_\_\_02\_\_\_\_ 2021 г., protocol № 32

Head chair \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mun G.A.

 (signature)

**Introduction**

Oral exam: traditional - answers to questions. The exam format is synchronous.

The oral exam is conducted in a service on the corporate platform Microsoft Teams of Al-Farabi KazNU

**Duration:**

Preparation time is 7-10 minutes.

The response time is 15-20 minutes.

**Topics for which assignments will be compiled**

1. Main tasks of Chemistry of natural polyphenols.

Classification of natural *polyphenols*, their chirality, configuration, chemical and biological properties.

3. Polyphenol compound and their classification. Flavonoids

4. Chromatography of polyphenols by BC and TLC using standard samples.

5. The key role of polyphenols, their classification, methods of isolation and identification.

6. Comparative analysis of determination of polyphenols content in plant raw materials and in substances. Chemical properties of polyphenols.

7. Carbohydrates. Examination of monographs in the SP RK on pharmacopoeial samples of monosaccharides, disaccharides and polysaccharides.

8. Phenols Acids. Aromatic carboxylic acids. Chemical properties of phenols and phenolic acids.

9. Chromatography of polyphenols by BC using standard samples. 1М and 2M

10. Carbohydrate mutarotation. Fisher Haworth projection.

11 Pirans. Catechins Classification, structure, physiological role.

12: γ- Pyrones or Coumarins. Chemical structure, properties and physiological role in the body

13. Quantification of anthraquinones and coumarins

14. Isocoumarins. Chemical structure, properties and physiological role

15: Flavones, Flavonols, Flavones. Their classification, obtaining and technology

16. Isoflavones, Dihydroflavanols, Anthocyanidins. Classification, structure, preparation, chemical properties, physiological role.

17. Separation, Identification and Analysis of Polyphenols

18. Physico-chemical analysis of polyphenols.

19. The biological role of natural polyphenols

20. Comparative analysis of the relationship between structures, chemical and biological properties of a number of obtained natural biologically active compounds.

**Recommended literature sources for exam preparation**

1.Analysis of medicinal mixtures / A.P. Arzamastsev, V.M. Pechennikov, G.M. Rodionova et al. - M.: Sputnik + Company, 2000. - 275 p.

2. Glushchenko NN Pharmaceutical Chemistry: A Textbook for Stud. wednesday prof. textbook. institutions / N.N. Glushchenko, T.V. Pleteneva, V.A. Popkov; Ed. T.V. Wicker. - M.: Publishing Center "Academy", 2004. - 384 p.

3. Loginova N. V., Polozov G. I. Introduction to pharmaceutical chemistry: Textbook. - Mn .: BSU, 2003.-250 p.

4. The State Pharmacopoeia of the USSR, X edition. - M.: Medicine, 1968.

5. The State Register of Medicines, 1998, 1999, 2000.

6. Pharmaceutical chemistry: Textbook. allowance / Ed. L.P. Arzamastseva. - M.: GEOTAR-MED, 2004 .-- 640 p.

**Internet resources:**

1. Information portal. - Access mode: http://www.xumuk.ru;

2. Information portal. - Access mode: http://www.alhimikov.net;

3. Information portal. - Access mode: http://www.chemport.ru;

4. Russian State Library. - Access mode: www.rsl.ru;

5. Information and reference portal. - Access mode: [www.librari.ru](http://www.librari.ru);