
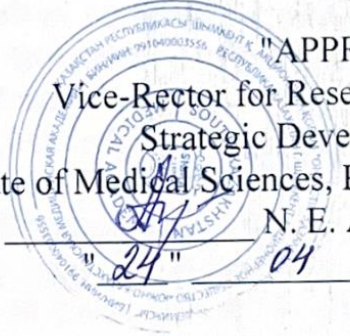



ОҢТҮСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казахстанская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 1	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		


  
**"APPROVED"**  
 Vice-Rector for Research and  
 Strategic Development,  
 Candidate of Medical Sciences, Professor  
 N. E. Aukenov  
 "24" 04 2026y.

**PROGRAM**  
**for the Entrance Examination for Admission to the Specialized Master's**  
**Program in the Educational Program 7M10104 "Pharmacy"**

**Shymkent, 2026**


ОҢТҮСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казakhstanская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 2	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		

The entrance examination program has been developed in accordance with the Order of the Minister of Health of the Republic of Kazakhstan dated July 4, 2022 No. KR DSM-63 "On Approval of the State Mandatory Standards of Education by Levels of Education in the Field of Healthcare" and the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 600 "On Approval of the Standard Rules for Admission to Educational Institutions Implementing Higher and Postgraduate Education Programs."


The entrance examination program was discussed at a meeting of the Scientific Committee in "Pharmacy".

Protocol № 8 06 04 2026y.

Chair of the Scientific Committee  
in "Pharmacy"


  
K. K. Orynbasarova

Secretary of the Scientific Committee  
in "Pharmacy"

  
A. A. Abilova

Approved by the Academic Council of JSC "SKMA"

Protocol № 4 24 04 2026y.

ОҢТҮСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казakhstanская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 3	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		

## Introduction

The purpose of the entrance examination for the specialized Master's program 7M10104 "Pharmacy" is to prepare competitive, competent scientific and pedagogical personnel who possess professional and research competencies and skills necessary for practical and scientific activities, in accordance with the needs of the science, education, and healthcare systems.

In the context of improving the healthcare system, there is a need to acquire knowledge and skills for managing the activities of medical organizations based on the achievements of modern science. Clinical mentorship is being implemented and developed. A highly qualified physician should not only possess professional skills but also be able to analyze, monitor, and manage activities, transfer knowledge to young specialists and students, and address issues related to the integration of practice, science, and knowledge.

### 1. Purpose of the Entrance Examination:

To assess the knowledge and competencies required for students to successfully complete the educational program and apply the acquired knowledge in professional activities in the fields of science, education, and healthcare.


### 2. Objectives of the Entrance Examination:

- To develop students' ability for self-improvement and self-development, as well as the need and skills for independent acquisition of new knowledge throughout their professional life;
- To formulate and solve modern scientific and practical problems and to successfully conduct research and managerial activities;
- To have knowledge of the current state and development prospects of the healthcare system;
- To have knowledge of modern research methods.


### 3. Entrance Examination Questions:

#### Educational Program 7M10104 "Pharmacy"

1. Name the main stages of pharmacokinetics.
2. What is bioavailability? Which factors influence it?
3. What are the main stages of tablet manufacturing?
4. What innovative methods are used for developing new pharmaceutical dosage forms?
5. What is a drug interaction? Provide an example.
6. What are the risks and special considerations of using medications during pregnancy?
7. Explain the mechanism of action of toxic substances on the body.
8. Provide examples of medicinal products made from medicinal plants.
9. Description of the process of drug registration in the Republic of Kazakhstan

ОҢТҰСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казахстанская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 4	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		

10. The role of GXP standards in pharmacy
11. Circulation of medicinal products in the Republic of Kazakhstan; organization of pharmaceutical management in the Republic of Kazakhstan; main principles of ensuring the population with medicines
12. The role of GXP standards in pharmacy; Good Pharmaceutical Practices; registration of medicinal products in the EAEU and the Republic of Kazakhstan; licensing of pharmaceutical activities
13. Key current orders and regulations governing the activities of pharmaceutical organizations and the quality of medicinal products
14. Elements of organization and management processes in pharmaceutical organizations (pharmacies, pharmacy warehouses, wholesale and retail companies)
15. Introduction to the fundamentals of pharmaceutical economics; specifics of pharmaceutical economics and consumer behavior in the pharmaceutical market; demand factors; law of supply in the pharmaceutical market; supply factors
16. Forecasting as a key tool of economics; methods of economic analysis; economic analysis in pharmacy institutions; main economic indicators of pharmacy organizations; methods of forecasting economic indicators; basics of drug pricing
17. Analysis and planning of the gross revenue of a pharmacy organization; inventory and its standardization; characteristics and classification of inventory; inventory analysis; methodological approaches to inventory planning
18. Main labor and wage indicators and their classification; analysis and planning of labor and wage indicators in pharmacy organizations; organization of a modern accounting system in pharmaceutical trade enterprises
19. Accounting for fixed assets of a pharmacy organization; assessment of value and accounting for the receipt of fixed assets; accounting for the movement of goods and other material assets
20. Marketing research of the pharmaceutical market; structure and essence of marketing research objects; characteristics of macro- and micro-environment factors; SWOT analysis; product positioning methodology; surveys, questionnaires, observations; conducting experiments
21. Management and administration; the concept of management; evolution of management theory and practice; modern management concepts
22. Content and types of managerial decisions; the process of decision-making, organization, and control of implementation; delegation of authority, power, and responsibility
23. Communications in the management of pharmaceutical organizations; the communication process, its elements and stages
24. Structure and essence of pharmacy human resources policy; concept and principles of personnel management; objectives of enterprise HR policy; strategic, tactical, and operational objectives of HR policy

ОҢТҮСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казахстанская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 5	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		

25. The concept of pharmaceutical care; distinctive features of the pharmaceutical care system; purpose of pharmaceutical care; competent pharmaceutical counseling as an integral part of quality service

26. Industrial production of solid dosage forms; main types of equipment, their functions, influence of technological parameters on drug quality; GMP requirements for process control and validation

27. Industrial production of liquid and sterile dosage forms; stages of raw material preparation, dissolution, filtration, sterilization, aseptic filling, and packaging; main types of equipment, their functions, influence of technological parameters on drug quality; GMP requirements for process control and validation

28. Industrial production of extractive preparations; stages of plant material preparation, grinding, extraction, purification, concentration, and drying; main types of equipment, their functions, influence of technological parameters on the quality of extractive preparations

29. Industrial production of semi-solid and rectal dosage forms; stages of raw material preparation, melting, mixing, homogenization, molding, and packaging; main types of equipment, their functions, influence of technological parameters on the quality of semi-solid preparations

30. Industrial production of medical aerosols, sprays, and foams; stages of raw material preparation, preparation of solutions or suspensions, container filling, propellant introduction, and sealing; main types of equipment, their functions, influence of technological parameters on drug quality

31. Medicinal plants and herbal raw materials containing primary plant metabolites

32. Medicinal plants and herbal raw materials containing terpenoid compounds

33. Medicinal plants and herbal raw materials containing alkaloids


34. Medicinal plants and herbal raw materials containing phenolic compounds

35. Medicinal raw materials of animal origin

36. General methods for studying medicinal products as a branch of pharmaceutical chemistry, examining general principles and approaches to pharmaceutical analysis methods; introduction to pharmaceutical chemistry; main issues and objects of pharmaceutical chemistry; terminology

37. State principles and provisions regulating the quality of medicinal products; standardization of medicinal products; state quality standards for medicinal products: general pharmacopoeial monograph (GPM) and pharmacopoeial monograph (PM)

38. Enterprise quality standards for medicinal products: Analytical Regulatory Document (ARD) and Temporary Analytical Regulatory Document (TARD); rules for drafting regulatory and technical documents for quality and safety control of medicinal products (ARD and TARD); State Pharmacopoeia

ОҢТҰСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казахстанская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 6	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		

39. System of certification of medicinal products; state certification system of the Republic of Kazakhstan; structure of the certification system for medicinal products in Kazakhstan; main objectives of medicinal product certification; procedures for issuing certificates of conformity for medicinal product manufacturing; organization and conduct of medicinal product certification

40. Quality assurance of medicinal products; control and permitting system in the Republic of Kazakhstan; structure and functions of the control and permitting system; Pharmacy Committee of the Ministry of Health of the Republic of Kazakhstan; RSE "National Center for Expertise of Medicines, Medical Devices, and Medical Equipment" of the Ministry of Health; Pharmacological Center and Pharmacopoeial Center; tasks and functions

41. Procedures for conducting preclinical and clinical trials of medicinal products; objectives of preclinical and clinical trials; rules for assessing general and specific pharmacological activity and safety of biologically active substances; role of ethics committees in clinical trials

42. Procedures for registration/re-registration and examination of medicinal products; quality assurance system for medicinal products; international standards ensuring medicinal product quality: Good Laboratory Practice (GLP), Good Clinical Practice (GCP), Good Distribution Practice (GDP), Good Pharmacy Practice (GPP), Good Manufacturing Practice (GMP); quality control system for medicinal products

43. Procedures for conducting preclinical and clinical trials of medicinal products; objectives of preclinical trials; rules for assessing general and specific pharmacological activity and safety of biologically active substances


44. Procedures for conducting preclinical and clinical trials of medicinal products; objectives of clinical trials; stages of clinical trials; role of ethics committees in clinical trials

45. Validation of analytical methods; validation characteristics used in pharmaceutical analysis: accuracy, precision (repeatability, intermediate precision), specificity, limit of detection, limit of quantitation, linearity, working range, robustness

46. Pharmaceutical analysis; specific features and types of pharmaceutical analysis; criteria of pharmaceutical analysis depending on the object and objectives

47. General methods and techniques for studying medicinal products; unification and standardization of similar tests within groups of medicinal substances; general provisions, general and specific pharmacopoeial monographs, and their interrelation

48. System for applying general methods of analysis to inorganic medicinal products for quality assessment; specifics of regulatory and technical documentation (RTD) for inorganic medicinal substances; differences between pharmacopoeial monograph requirements and other normative documentation for inorganic substances (GOST or TU)

ОҢТҮСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казахстанская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026 Page 9 of 7	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		


49. Organic medicinal products; aromatic compounds; iodinated derivatives of aromatic and arylaliphatic compounds, arylalkylamines, oxyphenylalkylamines and their derivatives, benzenesulfonamides and their derivatives, heterocyclic compounds of natural and synthetic origin; relationship between biological activity and chemical properties; significance of stereoisomerism; quality requirements and analytical methods according to medical application

50. Steroid compounds; general quality requirements; relationship between structure and biological activity; quality requirements and analytical methods


#### 4. Recommended Literature

##### Core Literature:

1. Asanov A.Zh. Fundamentals of Epidemiology. – Almaty: Evero, 2021.
2. Vasilieva L.A., Briko N.I., et al. General and Clinical Epidemiology. – Moscow: GEOTAR-Media, 2020.
3. Tanat R.Dzh. Ismakhanova A.K. Epidemiology and Prevention of Infectious Diseases. – Almaty, 2022.
4. Kulbayeva G.Zh. Lecture Collection on Hygiene. – Almaty, 2020.
5. Shalygina I.F., Martinchik A.N. Hygiene – The Basis of Human Ecology. – Almaty: GEOTAR-Media, 2021.
6. Iskakova S.T. General Hygiene. – Almaty, 2019.
7. Sagatova A.K. Food Hygiene: Textbook. – Almaty, 2020.
8. Martinchik A.N. Human Nutrition Hygiene. – Moscow: GEOTAR-Media, 2019.
9. Zhamansarieva Zh.Zh. Fundamentals of Water and Air Hygiene. – Shymkent, 2021.
10. Bekturganova S.A. School Hygiene and Age Physiology. – Almaty, 2022.
11. Maksimova T.M. Hygiene of Children and Adolescents. – Moscow: Meditsina, 2020.
12. Serikbayeva R. Fundamentals of Housing Hygiene. – Semey, 2019.
13. Daniyarov A.S. Public Health: Theory and Practice. – Almaty, 2021.
14. Maksimova T.M., Alekseeva L.P. Public Health and Medical Services. – Moscow: MEDpress-inform, 2022.
15. WHO Documents – Public Health Guidelines and Core Functions of Public Health ([www.who.int](http://www.who.int))
16. Smagulov A.B. Fundamentals of Biostatistics in Medicine. – Nur-Sultan, 2020.
17. Glantz S. Medical-Biological Statistics. – Moscow: Praktika, 2019.
18. Sabirova N.Zh. Fundamentals of Evidence-Based Medicine. – Almaty, 2022.
19. Arystanov Zh.M., Akhelova Sh.L., Zulpykharova A.T. Management and Economics of Pharmacy with Fundamentals of Management and Marketing: Textbook. – Karaganda: Medet Group, 2023. – 588 p.

ОҢТҰСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ	 <b>SKMA</b> -1979-	SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казakhstanская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"	Page 9 of 8	

20. Shertaeva K.D., Utegenova G.I. Economics of Pharmacy: Textbook. – Shymkent, 2025. – 220 p.
21. Management and Economics of Pharmacy: Textbook / edited by I.A. Narkevich. – Moscow: GEOTAR-Media, 2021. – 928 p.
22. Krasnyuk I.I., Pharmaceutical Technology. Industrial Production of Medicinal Products. Two volumes. Volume 1 [Electronic resource]: Textbook / I.I. Krasnyuk et al.; Moscow: GEOTAR-Media, 2020. – 352 p. – ISBN 978-5-9704-5535-7. Available: <http://www.studmedlib.ru/book/ISBN9785970455357.html>
23. Krasnyuk I.I., Pharmaceutical Technology. Industrial Production of Medicinal Products. Volume 2 [Electronic resource]: Textbook / I.I. Krasnyuk et al.; Moscow: GEOTAR-Media, 2022. – 448 p. – ISBN 978-5-9704-5535-7. Available: <http://www.studmedlib.ru/book/ISBN9785970455357.html>
24. Dzhangozina D.M., Loseva I.V., Ivleva L.P., Derbush S.N. Medicinal Plants, Herbal Raw Materials, and Some Animal-Derived Products. Textbook on Pharmacognosy, 2nd edition, Part I: Plants and herbal raw materials containing carbohydrates, fats, fat-like substances, vitamins, terpenoids. – Almaty: Evero, 2018. – 206 p. [https://www.elib.kz/ru/search/read\\_book/744/](https://www.elib.kz/ru/search/read_book/744/)
25. Dzhangozina D.M., Loseva I.V., Ivleva L.P., Derbush S.N. Pharmacognosy, 2nd edition, Part II: Plants and herbal raw materials containing cardiac glycosides, saponins, alkaloids. – Almaty: Evero, 2020. – 194 p. [https://www.elib.kz/ru/search/read\\_book/746/](https://www.elib.kz/ru/search/read_book/746/)
26. Dzhangozina D.M., Loseva I.V., Ivleva L.P., Derbush S.N. Pharmacognosy, 2nd edition, Part III: Plants and herbal raw materials containing phenolic compounds and their glycosides; coumarins, chromones, lignans, anthracene derivatives, flavonoids, tannins, biologically active substances of poorly studied composition, and animal-derived medicinal raw materials. – Almaty: Evero, 2020. – 220 p. [https://www.elib.kz/ru/search/read\\_book/748/](https://www.elib.kz/ru/search/read_book/748/)
27. Arystanova T.A. General Pharmaceutical Chemistry: Textbook. – Almaty: Evero, 2013. – 238 p.
28. Arystanova T.A. Pharmaceutical Chemistry, Volume I. – Almaty: Evero, 2015. – 572 p.
29. Arystanova T.A. Pharmaceutical Chemistry, Volume II. – Almaty: Evero, 2015. – 640 p.
30. State Pharmacopoeia of the Republic of Kazakhstan, Volume 1. – Almaty: Zhibek Zholy Publishing House, 2008. – 592 p.
31. State Pharmacopoeia of the Republic of Kazakhstan, Volume 2. – Almaty: Zhibek Zholy Publishing House, 2009. – 804 p.
32. State Pharmacopoeia of the Republic of Kazakhstan, Volume 3. – Almaty: Zhibek Zholy Publishing House, 2014. – 729 p.

ОҢТҮСТІК-ҚАЗАҚСТАН <b>MEDISINA</b> <b>AKADEMIASY</b> «Оңтүстік Қазақстан медицина академиясы» АҚ		SOUTH KAZAKHSTAN <b>MEDICAL</b> <b>ACADEMY</b> АО «Южно-Казakhstanская медицинская академия»
Scientific Committee "Pharmacy"	58-« »- 2026	
Program for the Entrance Examination for Admission to the Specialized Master's Program in the Educational Program 7M10104 "Pharmacy"		Page 9 of 9

33. Ordabaeva S.K. Analysis of Medicinal Products Derived from Aromatic Compounds: Textbook. – 2012. – 250 p.
34. Ramenskaya G.V. Pharmaceutical Chemistry: Textbook. – Moscow: BINOM. Knowledge Laboratory, 2015. – 467 p.
35. Laboratory Manual for Pharmaceutical Chemistry under G.V. Ramenskaya. – Moscow: Pilot, 2016. – 352 p.
36. The British Pharmacopoeia (BP 2016). – London: The Stationery Office, 2016.
37. The European Pharmacopoeia, 8.4. – EDQM, 2015.
38. The Japanese Pharmacopoeia, 16th edition. – 2013.
39. The International Pharmacopoeia, 5th edition. – Geneva: WHO, 2015.
40. The United States Pharmacopeia, 38 National Formulary 33. – 2015.

#### **Additional Literature:**

1. Arystanova T.A., Arystanov Zh.M. Innovative Technologies in Pharmaceutical Education: Teaching and Assessment. Methodological Guide. – Shymkent, 2012. – 175 p.
2. Ordabaeva S.K., Nadirova S.N. Unified Chromatographic Analysis Methods of Metronidazole Dosage Forms: Scientific-Methodical Recommendations. – Shymkent: Alem, 2015. – 84 p.
3. Georgiyants V.A., Bezugly P.O., Burian G.O., Abu Sharkh A.I., Taran K.A. Pharmaceutical Chemistry. Lectures for English-Speaking Students: Study Guide for Higher Education Students. – Kharkiv: NUPh, 2013. – 527 p.

#### **Online Resources:**

- WHO.int – Official website of the World Health Organization
- Kaznmu.kz – Educational materials of Kazakh National Medical University
- Medelement.com – Clinical protocols and reference materials of the Republic of Kazakhstan
- Elibrary.ru – Database of Russian medical articles
- Nla.kz – National Library of Kazakhstan (electronic resources)