

**Assessment tools for certification
in the discipline " Medical and pharmaceutical commodity science "
for students of the educational program specialist
in the specialty 33.05.01 Pharmacy,
direction (profile) Pharmacy,
full-time of study
for the 2023-2024 academic year**

1. Evaluation tools for conducting current certification in the discipline

The current certification includes the following types of tasks: testing, assessment of the development of practical skills (abilities), solving situational tasks, control work, interview on control issues.

1.1. Examples of test tasks

1. The ability of a commodity to satisfy specific human needs is called:

- a) exchange value
- b) consumption
- c) use value
- d) need
- e) quality
- e) monetary value.

2. The parallel method of coding goods is used:

- a) hierarchical classification
- b) faceted
- c) faceted-hierarchical
- d) all answers are incorrect.

3. The consumer (according to the international standard) is:

- a) the recipient of the products presented by the supplier
- b) the pharmacy visitor who came for the medicine
- c) the patient who came to the doctor
- d) a patient admitted to the clinic.

4. Specify the state quality standard of a medicinal product under an international nonproprietary name approved for medicinal products that have the greatest therapeutic value and are widely used in medical practice:

- a) GOST
- b) OST
- c) STP
- d) TU
- e) OFC
- f) FS
- g) FSP.

5. The quality standard of a medicinal product is:

- a) a regulatory document of the manufacturer
- b) a regulatory document approved by the Ministry of Health of the Russian Federation
- c) the conclusion of the control and analytical laboratory
- d) a regulatory document containing exclusively the requirements for LP
- e) a regulatory document containing a list of normalized indicators and control methods approved by the Ministry of Health of the Russian Federation.

6. According to the stages of the production process, the control is:

- a) input, intermediate and final
- b) continuous and selective

- c) continuous and periodic
 - d) stationary and sliding.
7. The main function of commodity analysis is:
- a) establishing the conformity of the received goods to the ordered quantity
 - b) ensuring the protection of the rights of the consumer (patient) to receive timely and high-quality medical and pharmaceutical care
 - c) establishing compliance of the consumer properties of this product with a set of requirements and indicators that collectively determine its quality
 - d) filing a claim to the supplier
 - e) all of the above.
8. The scheme of commodity analysis for specialists working in pharmacy institutions includes the following stages:
- a) selection of goods for analysis
 - b) selection of consumer properties and indicators to be analyzed
 - c) analysis of consumer properties and indicators
 - d) presentation of a claim to the supplier
 - e) consumer survey.
9. The organoleptic method of analyzing consumer properties and technical indicators includes:
- a) evaluation of packaging and labeling of goods
 - b) determination and decoding of the goods code
 - c) establishment of technological characteristics of the goods
 - d) verification of the correctness of storage of goods
 - e) determination of the type of goods.
10. Acceptance of goods by quality consists in:
- a) weighing of goods
 - b) checking the conformity of products with accompanying documents
 - c) measuring of goods
 - d) evaluation of organoleptic properties.

1.2. Example(s) of situational tasks(s)

1. You are an employee of a pharmacy organization, conduct a marketing and commodity analysis of the packaging.

1.3. Examples of tasks for assessing the development of practical skills

Task 1: "Decoding the codes of goods according to anatomical - therapeutic - chemical classification (ATC)"

Using the reference book "Vidal. Medicines of Russia" decipher the codes of medicines according to the ATC classification.

Task 2:

Establishment and characterization of materials used for the manufacture of medical and pharmaceutical products.

Goal. Development of the ability to recognize the signs of materials, analyze their properties, work with the literature necessary to clarify these issues; development of the ability to determine the method of obtaining products based on their external inspection and the use of appropriate documentation; development of the ability to systematize materials according to their inherent characteristics, work with appropriate literature.

Description of the task.

- 1) Determine the materials from which the medical and pharmaceutical products issued to you by the teacher are made, describe the properties of the installed materials. Write it down in a notebook.
- 2) Draw in the form of a diagram and describe the method of production of products based on established materials, determine its effect on the properties of products. Write it down in a notebook.
- 3) Establish the classification of the source materials and the scope of their application in medicine and pharmacy. Write it down in a notebook.

Task 3:

Establishment and characterization of materials used for the manufacture of medical and pharmaceutical products.

Goal. Development of the ability to recognize the signs of materials, analyze their properties, work with the literature necessary to clarify these issues; development of the ability to determine the method of obtaining products based on their external inspection and the use of appropriate documentation; development of the ability to systematize materials according to their inherent characteristics, work with appropriate literature.

Description of the task.

- 1) Determine the materials from which the medical and pharmaceutical products issued to you by the teacher are made (see the table), describe the properties of the installed materials. Write it down in a notebook.
- 2) Draw in the form of a diagram and describe the method of production of products based on established materials, determine its effect on the properties of products. Write it down in a notebook.
- 3) Establish the classification of the source materials and the scope of their application in medicine and pharmacy. Write it down in a notebook.

1.4. Example of a variant of the control work

1. Entrance control on the topic:

Option No. 1.

1. Non-metallic materials. Concept, types.
2. Glass, types of glasses used in the manufacture of medical devices.

Option No. 2.

1. Non-metallic materials. Concept, types.
2. Stages of technological production of rubber products.

Questions for the final control work No. 2:

1. Materials Science. Purpose and objectives. Classification of materials. General characteristics of materials.
2. Composites. Modern materials.
3. Properties of materials: mechanical, chemical, technological, optical, electrical, etc.
4. Classification of the main types of raw materials for the production of medical and pharmaceutical products. Requirements for materials for medical devices.
5. Metal materials. General characteristics. Classification.
6. Alloys of iron with carbon. General characteristics. Classification.
7. General characteristics and classification of steels. Carbon steel. Properties and application of carbon steels.
8. General characteristics and classification of alloy steels. Marking of steels.

9. Cast iron. General characteristics, types.
10. Non-ferrous metals.
11. Corrosion and protective and decorative coatings.
12. Steel smelting processes. The processes of obtaining copper, aluminum, magnesium.
13. Methods of manufacturing products from metal materials. Types of production processes in relation to the product.
14. The main production processes and methods of obtaining blanks from metal materials. The technological process of manufacturing metal products.
15. Non-metallic materials. Concept, types. General characteristics.
16. Glass, characteristics of properties.
17. Glass cooking and production of glass products.
18. Types of glasses used in the manufacture of medical devices.
19. Ceramic materials. Sitalls. General characteristics of properties and applications.
20. Corrosion and anticorrosive protection. Types of corrosion. Characteristics of anticorrosive protection methods.
21. Polymer materials. Concept, classification, application. Requirements for polymers used in medicine.
22. Elastomers. Rubber (natural and synthetic) and rubber.
23. Stages of technological production of rubber products. Rubber testing.
24. Latexes and products made of them. Consumer properties of latexes. The process of obtaining latex products.
25. Silicone rubbers. Properties, application in medicine.
26. Plastic masses. Kinds. Advantages and disadvantages.
27. Thermoplastic masses. Thermosetting materials.
28. Methods of manufacturing plastic products.
29. Factors preserving the consumer properties of medical and pharmaceutical goods
30. Storage of medicines as a factor preserving the consumer properties of medical and pharmaceutical goods.
31. The main functions and significance of packaging. Classification of packaging.
32. Packaging, as an element of packaging. Types of packaging classification.
33. Classification, types of packaging of medicines in accordance with the GF.
34. Characteristics of the main elements of the package. Packaging materials for the production of packaging and packaging elements of medicines.
35. Classification of packaging of medicines by type and type, characteristics of types and types of packaging (ampoule, balloon, aerosol can, syringe, strip, blister, etc.)
36. General requirements for packaging of medicines.
37. Labeling of medical pharmaceutical products: characteristics, types, basic elements, marking media.
38. Environmental aspects. Requirements for environmental safety of packaging.
39. Basic principles of storage of medicines
40. Transportation of medicines and medical products.

1.5. Examples of control questions for the interview

1. What is the role of the pharmacist in the organization of the supply of health services and the population with the necessary medical equipment?
2. Consumer properties of pharmaceutical products. Their classification.
3. Features of commodity analysis of medical and pharmaceutical products.
4. Structure of the contract for the supply of goods. Organization of pharmaceutical supplies.
5. General requirements for the organization of storage of medicines depending on the pharmacotherapeutic group, application, aggregate state, dosage form, expiration dates.

2. Evaluation tools for conducting intermediate certification in the discipline

Intermediate certification is carried out in the form of a credit with an assessment.

Intermediate certification includes the following types of tasks: interview, assessment of the development of practical skills (abilities).

2.1. Example of a practical skill (skill)

1. Conduct a marketing and commodity analysis of the secondary packaging of the medicinal product, determine whether the labeling meets the existing requirements.

2.2. List of interview questions

№	List of interview questions
1.	Commodity science as a scientific discipline. Subject, purpose, tasks. Historical stages of commodity science development.
2.	Concepts: goods, consumer value, medical commodity science.
3.	The use value and utility of the product. Individual and public use value. Definition of the concept of "consumer".
4.	Consumer properties, characteristics. Consumer properties that determine the quality of medical and pharmaceutical products.
5.	Characteristics of groups of consumer properties – social, functional, reliability, safety, ergonomic, aesthetic, environmental.
6.	Classification of goods. Basic definitions, concepts. The purpose of classification. The concept of classification. Classification methods.
7.	Trade classification of goods. Characteristic. The place of medical and pharmaceutical products in the trade classification. Anatomical-therapeutic-chemical classification of medicines.
8.	Coding of goods. The structure of the code, its main elements. Characteristics of sequential, ordinal, serial-ordinal and parallel coding methods (methods). Application in commodity analysis of medicines. Bar coding of goods.
9.	Quality, definition of the concept. The quality of medical and pharmaceutical products. Comprehensive quality assessment. Groups of quality indicators.
10.	Quality indicators of medicines and medical products.
11.	The role of standards in preserving the use value and quality of goods. Types of standards and regulatory documentation. Types of ND used for medicines and LRS.
12.	Standardization. General provisions. The system of standardization of medical and pharmaceutical products.
13.	Certification. General provisions. Certification of medical and pharmaceutical products.
14.	Materials science. Purpose and objectives. Classification of materials. General characteristics of materials. Properties of materials: mechanical, chemical, technological, optical, electrical, etc.
15.	Classification of the main types of raw materials for the production of medical and pharmaceutical products. Requirements for materials for medical devices.
16.	Metal materials. General characteristics. Classification. Alloys of iron with carbon.
17.	Metal materials. Non-ferrous metals. General characteristics. Classification. Application for the manufacture of medical devices.
18.	Non-metallic materials. Concept, types. General characteristics.
19.	Glass, characteristics of properties. Glass cooking and production of glass products. Types of glasses used in the manufacture of medical devices.
20.	Corrosion and anticorrosive protection. Types of corrosion. Characteristics of anticorrosive protection methods.
21.	Polymer materials. Concept, classification, application. Requirements for polymers used in medicine.
22.	Elastomers. Rubber (natural and synthetic) and rubber. Stages of technological production of rubber products. Rubber testing. Latexes and products made of them. Consumer properties of

	medical products made of rubber and latex.
23.	Plastic masses. Kinds. Thermoplastic masses. Thermosetting materials. The use of plastics for the manufacture of medical devices.
24.	Storage of medicines as a factor preserving the consumer properties of medical and pharmaceutical products. Basic principles of storage of medicines and medical devices.
25.	The main functions and significance of packaging. Classification of packaging.
26.	Characteristics of the main elements of the package. Packaging, as an element of packaging. Classification, types of packaging of medicines in accordance with the GF.
27.	General requirements for the packaging of medicines. Labeling of medical pharmaceutical products: characteristics, types, basic elements, marking media.
28.	Definition of the terms "commodity analysis" and "commodity expertise". The function, goals and objectives of commodity analysis in healthcare. Principles, information basis of commodity analysis.
29.	Methods of commodity analysis. Classification. General characteristics. Types of commodity analysis.
30.	Organization of commodity analysis. Methodology of commodity analysis.
31.	General characteristics, classification, assortment of dressings and means. Commodity analysis of dressings.
32.	Commodity characteristics of medicines used in the treatment of diseases of the digestive system. The algorithm of commodity analysis of medicines used in the treatment of gastrointestinal diseases.
33.	y Commodity movement, sales, definition of concepts. Classification of sales methods. Distribution channels and product distribution channels, their characteristics.
34.	Trade organizations as sales channels. Characteristics, types of wholesale intermediaries, their functions. Organization of pharmaceutical supplies.
35.	Types and structure of the contract for the supply of goods. Pre-trial dispute settlement procedure. Rules for filing claims.
36.	Organization of acceptance of goods by quantity and quality to the pharmacy organization.
37.	Characteristics and main consumer properties of sanitary and hygienic products and means of caring for sick children. Commodity analysis of sanitary and hygienic products.
38.	Characteristics and main consumer properties of biologically active additives, Commodity analysis of biologically active additives.
39.	Characteristics and main consumer properties of specialized food products, perfumery and cosmetic products. Commodity analysis of specialized food products.
40.	Characteristics and main consumer properties of perfumery and cosmetic products. Commodity analysis of perfumery and cosmetic products.

The full fund of assessment tools for discipline / practice is available in the EIES of VolgSMU at the link:

<https://elearning.volgmed.ru/course/view.php?id=8222>

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