CONTROL AND MEASURING DEVICES
Questions of the border control program 1-2

Discipline: Basics of scientific research
Discipline code: BSR 5201
Name and code of the OP: 6B10101 "General Medicine"
Amount of study hours/credits: 150/5
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2025

Program Questions for Midterm Control №1

1. Ability to clearly explain the difference between fundamental, applied, and exploratory research with examples.
2. Knowledge of main funding sources for scientific research available to medical students.
3. Ability to list all stages of research in chronological order.
4. Understanding the differences in content and objectives between preparatory and analytical stages.
5. Knowledge of key functions of a scientific supervisor at different stages of research.
6. Understanding the necessity of formulating a hypothesis as a separate element from the overall research aim.
7. Ability to distinguish between method and methodology in scientific research.
8. Ability to correctly formulate a research problem using the PICO scheme.
9. Understanding the differences between relevance, novelty, and practical significance of research.
10. Ability to provide examples of inductive and deductive reasoning in a medical context.
11. Understanding the essence of modeling and conditions for its application in biomedical research.
12. Understanding the limitations of analogy methods when interpreting biomedical data.
13. Ability to name and describe main types of observational studies (cohort, case–control, etc.).
14. Understanding why RCT is considered the "gold standard" and its ethical/practical limitations.
15. Ability to differentiate between theoretical and empirical research by goals and methods.
16. Knowledge of strengths and weaknesses of case-control study design.
17. Ability to translate a substantive hypothesis into an operational form (with variables and their relationships).
18. Understanding the difference between hypothesis, assumption, and thesis.
19. Ability to formulate aim and hypothesis for one topic while maintaining logical connection.
20. Ability to correctly determine the object and subject of research.
21. Knowledge of Bloom’s taxonomy verbs (levels 3–4) suitable for formulating research tasks.
22. Understanding the composition and logic of the preparatory stage, including pilot study and ethical aspects.
23. Awareness of the purpose of pilot testing before main data collection.
24. Knowledge of basic ethical requirements for human-involved research (including surveys).
25. Understanding the difference between MeSH term search and free-text search in PubMed.
26. Ability to use key filters in Scopus for precise selection of clinical/epidemiological studies.
27. Understanding differences between Google Scholar and Scopus/Web of Science in reliability and types of indexed sources.
28. Knowledge of citation assessment methods and its importance when selecting sources.
29. Ability to distinguish primary and secondary information using medical publications as examples.
30. Understanding literature review requirements: chronology, critique, synthesis—not mere summary.
31. Knowledge of the purpose of the four main sections of IMRaD structure.
32. Understanding the necessity of detailed description of methods for reproducibility.
33. Ability to distinguish monograph, dissertation, and scientific article by structure and function.
34. Knowledge of principles for selecting UDC/BBK codes for medical topics.
35. Ability to give examples of primary, secondary, and tertiary scientific information.
36. Understanding differences between systematic review and traditional literature review.

Test assignments for midterm assessment 1

Option 1

1. Determine which statement most accurately reflects the purpose of science as a means of cognition.
A. Forming beliefs based on personal experience.
B. Identifying the essential aspects and objective patterns of phenomena in nature, society, and thinking.
C. Creating artistic images to convey ideas.
D. Accumulating facts without systematizing them.
E. Confirming a predetermined point of view.
2. Indicate which group the research and development work financed by the university's educational and scientific center belongs to.
A. International financing
B. Republican financing
C. External financing
D. Internal financing
E. Private financing
3. Select the stage of research work at which data collection tools are developed, pilot tested, and ethically reviewed.
A. Analytical stage
B. Preparatory stage
C. Empirical stage
D. Final stage
E. Dissemination stage
4. Analyze the list of actions:
— formulation of goals and objectives,
— development of a “project passport,”
— selection of literature,
— drawing up a schedule.
Indicate which stage of research they belong to.
A. Analytical
B. Preparatory
C. Empirical
D. Final
E. Publication
5. Determine which of the following tasks is not included in the analytical stage of research.
A. Systematization of collected material
B. Interpretation of obtained data
C. Development of a questionnaire and interview protocol
D. Formulation of conclusions
E. Comparison of results with data from the literature
6. Choose the statement that most accurately reflects the difference between the method and methodology of scientific research.
A. The method is a section of the dissertation, the methodology is an appendix to it
B. Methodology is a set of methods used in research
C. A method is a specific technique, while methodology is the philosophical justification for the choice and application of methods.
D. Methodology is a set of statistical tests, while a method is their interpretation.

E. A method is theory, while methodology is practice.

7. Write a PICO statement for the clinical question: “Is daily use of a fluoride mouthwash effective in preventing tooth decay in children aged 6–10?” Indicate the correct option for Intervention.

A. Children aged 6–10 years without caries
B. No use of mouthwash
C. Daily rinsing with fluoride mouthwash for 6 months
D. Reduction in the number of affected tooth surfaces
E. Dental check-up once a month

8. Analyze the following two arguments and indicate which one is inductive.

A. It is known that hypertension is a risk factor for stroke; patient has blood pressure of 180/110 → urgent reduction of blood pressure is recommended
B. Fifteen adolescents with low vitamin D levels have been found to have increased fatigue → a connection between vitamin D deficiency and asthenia has been suggested
C. A study has proven that melatonin improves sleep → a patient with insomnia has been prescribed melatonin
D. The standard treatment for pneumonia includes antibiotics → a patient with pneumonia was prescribed amoxicillin
E. A patient with chest pain, shortness of breath, and elevated troponin → diagnosis: myocardial infarction

9. Indicate which feature is most characteristic of the modeling method in biomedical research.

A. Direct observation of patients in natural conditions
B. Use of a simplified system (mathematical, computer, animal) that simulates the real process
C. Comparison of two groups based on a single measurement at a single point in time
D. Conducting an in-depth interview with an expert
E. Analysis of archived medical records

10. Determine which of the following study designs is most appropriate if the goal is to study the relationship between smoking during pregnancy and low birth weight in newborns when randomization is not possible.

A. Cross-sectional study
B. Randomized controlled trial (RCT)
C. Prospective cohort study
D. Case-control study
E. Descriptive study

11. Indicate which of the following characteristics most accurately distinguishes empirical research from theoretical research.

A. The main tool is logical inference
B. The goal is to construct a conceptual model
C. The collection of primary data from participants or archives
D. Emphasis on formalizing concepts
E. Reliance exclusively on secondary sources

12. Analyze: in the study “The Effect of Physical Activity Level on Anxiety in Students,” the hypothesis is stated as follows: “Physical activity affects anxiety.” Indicate the main flaw in this statement.

A. There is no indication of the direction of the relationship
B. It is not specified how “physical activity” and “anxiety” are measured
C. There is no comparison group
D. All of the above
E. There is no ethical approval

13. Select an example of a case-control study.

A. 500 adolescents with depression and 500 without depression — retrospectively analyze sleep history and screen time
B. 1,000 newborns from smoking and non-smoking mothers — observe development for 1 year
C. Random assignment of students into 2 groups: intervention (training) and control (usual routine) — assessment of anxiety after 8 weeks
D. Survey of 200 students about sleep, stress, and academic performance on a single day
E. Analysis of 50 publications on the topic of "sleep and cognitive function"
14. Determine which of the following measures is most effective in minimizing systematic error when collecting medical history in an oral interview.
A. Use coded response options
B. Conduct the interview at a time convenient for the respondent
C. Train interviewers to use a standard script of questions and wording
D. Anonymize questionnaires
E. Use an online form
15. Indicate which of the following statements is most appropriate for the purpose of scientific research.
A. Study the effect of stress on blood pressure
B. Analyze the relationship between stress and blood pressure
C. Assess the association between stress levels (on the PSS scale) and systolic blood pressure in medical students during exam sessions
D. Conduct a survey of students and measure their blood pressure
E. Determine whether there is a link between stress and blood pressure
16. Analyze: the project specifies the object as adolescents aged 15–17 and the subject as the impact of social media on self-esteem. Identify the error.
A. The subject should be a specific property ("level of self-esteem") rather than a process ("influence")
B. The object is too broad
C. The geographical location is not specified
D. There is no hypothesis
E. There is no method for measuring self-esteem
17. Select the correct wording of the hypothesis in operational form.
A. Physical activity is beneficial for mental health.
B. Students who perform ≥150 minutes of aerobic exercise per week have lower STAI anxiety scores than sedentary students.
C. There is a link between physical activity and anxiety.
D. The effect of sport on mood needs to be studied.
E. Hypothesis: exercise reduces stress.
18. Determine which of the following tasks meets the "application level" requirement of Bloom's taxonomy and is suitable for a research project.
A. Study the literature on the topic
B. Describe the problem
C. Compare adherence before and after the introduction of reminders in the mobile app
D. Collect questionnaires
E. Write an introduction
19. Analyze the query in PubMed: (depression[Title/Abstract]) AND (adolescents). Indicate which error significantly reduces the sensitivity of the search.
A. The AND operator is used instead of OR
B. The term adolescents is not represented as MeSH (Adolescent[MeSH])
C. The language of publication is not specified
D. The "Humans" filter is not used

E. The synonym teen* is missing
20. Select the correct sequence of actions when searching Scopus for the topic “the effect of sleep on cognitive functions in adolescents.”
A. Enter free text → click Search → open the first article
B. Use “Advanced search” → TITLE-ABS-KEY (sleep AND cognition AND adolescent*) → apply filters: Article, 2020–2025, Medicine
C. Go to “Author search” → find a well-known scientist → view their publications
D. Enter the topic in Google Scholar → open links → copy citations
E. Use “Document search” → enter sleep cognition → sort by date
21. Indicate which characteristic most accurately distinguishes Scopus from Google Scholar.
A. Scopus is free, Google Scholar requires a subscription
B. Scopus has a strict selection of journals (based on CiteScore, SJR), Google Scholar also indexes preprints, dissertations, reports
C. Google Scholar does not allow sorting by citation
D. Scopus does not support export to EndNote
E. Google Scholar provides h-index only for articles, Scopus — for authors.
22. Determine which of the following publications is primary scientific information.
A. Systematic review on vaccination (Cochrane, 2024).
B. Meta-analysis of BMI and depression (JAMA, 2023).
C. Original article: “RCT of melatonin's effect on sleep quality in adolescents” (Sleep Med, 2025)
D. Textbook “Adolescent Hygiene” (2024)
E. Chapter in the monograph “Sleep and the Brain”
23. Indicate which section of the IMRaD structure must contain sufficient detail to allow another study to be replicated.
A. Introduction
B. Methods
C. Results
D. Discussion
E. Conclusion
24. Select the correct UDC code for the topic: “Social determinants of HPV vaccination among adolescent girls in rural areas.”
A. 616-001
B. 614.4
C. 316.334
D. 614.47+316.334
E. 616.995
25. Determine which of the following characteristics most accurately distinguishes a dissertation from a scientific article.
A. A dissertation is published only in electronic form
B. An article always contains a “Discussion” section, while a dissertation does not
C. A dissertation is a comprehensive study with theoretical and methodological justification, an empirical part, and novelty; an article is a fragment of the results
D. An article does not require ethical approval, while a dissertation does
E. A dissertation is not indexed, while an article always is

Test assignments for midterm assessment No. 1
Option 2

1. Determine which of the following statements most accurately reflects the essence of science as a form of knowledge.
A. Science is a collection of expert opinions on current issues
B. Science is a system of knowledge obtained empirically and not requiring verification
C. Science is a system of objective knowledge based on the identification of patterns through observation, experimentation, and logical reasoning
D. Science is a tool for convincing society of the correctness of a particular ideology
E. Science is the accumulation of facts without generalizations
2. Indicate which category the research and development project funded by a grant from the Ministry of Science and Higher Education of the Republic of Kazakhstan belongs to.
A. Internal funding
B. International funding
C. Republican funding
D. Private funding
E. Local funding
3. Select the stage of research work at which statistical data processing, interpretation of results, and formulation of conclusions are carried out.
A. Preparatory stage
B. Empirical stage
C. Analytical stage
D. Final stage
E. Implementation stage
4. Analyze the list of actions:
— conducting a survey,
— measuring indicators,
— collecting medical history,
— recording data in protocols.
Indicate which stage of the research they belong to.
A. Preparatory
B. Analytical
C. Empirical
D. Final
E. Publication stage
5. Determine which of the following tasks is not included in the preparatory stage of the research.
A. Formulating the objective and hypothesis
B. Developing a questionnaire and data collection protocol
C. Conducting a pilot study
D. Assessing the statistical significance of differences between groups
E. Obtaining ethical approval
6. Select an example of deductive reasoning in medical practice.
A. Twelve obese patients have high insulin levels → assumption: obesity is associated with hyperinsulinism
B. It is known that iron deficiency causes anemia; the patient has microcytic anemia and low ferritin → diagnosis: iron deficiency anemia

C. A group of adolescents with frequent headaches use smartphones more often → hypothesis: screen time affects the frequency of headaches
D. A comparison of 200 students with different levels of sleep showed a correlation with anxiety
E. Observation: in a classroom with poor ventilation, headaches are reported more often
7. Formulate a PICO statement for the clinical question: “Does daily vitamin D supplementation reduce the incidence of colds in adolescents aged 14–17 years?” Select the correct outcome.
A. Adolescents aged 14–17
B. Daily intake of 1000 IU of vitamin D
C. No intake of vitamin D
D. Number of episodes of acute respiratory viral infection (ARVI) over 6 months
E. Measurement of 25(OH)D levels in the blood
8. Indicate which feature most accurately characterizes the induction method.
A. Moving from a general law to a specific case
B. Using a mathematical model for prediction
C. Forming a general conclusion based on observation of specific cases
D. Using an analogy with a known phenomenon
E. Testing a hypothesis through experimentation
9. Determine in which case the use of analogy in medical research is most justified.
A. When evaluating the effectiveness of a new drug in humans — based on data from mice
B. When formulating a diagnosis for a patient — based on similarity to a clinical case from the literature
C. When planning vaccination — by analogy with an epidemic in another country 10 years ago
D. When interpreting an MRI — comparison with standard images
E. When developing a hypothesis about the mechanism of action of a drug — based on structural similarity to another drug
10. Determine which of the following study designs is most appropriate if the goal is to identify possible risk factors for a rare disease (e.g., Guillain-Barré syndrome) in adolescents.
A. Randomized controlled trial
B. Prospective cohort study
C. Cross-sectional study
D. Case-control study
E. Descriptive study
11. Indicate which of the following characteristics most accurately distinguishes theoretical research from empirical research.
A. Use of statistical analysis
B. Collection of primary data from participants
C. Main goal is to develop or refine a conceptual model
D. Conducting a survey or measurements
E. Presence of a control group
12. Analyze the following statement: “Hypothesis: adolescents who spend >4 hours a day on social media have lower self-esteem than those who spend <1 hour.” Indicate which criterion is most important for recognizing this hypothesis as correct.
A. Comparison of two groups
B. Ability to measure “time spent on social media” and “self-esteem” using objective/validated tools
C. Indication of age (adolescents)
D. Direction of the relationship (“lower”)
E. All of the above
13. Select an example of a cohort study.

A. 300 adolescents with low vitamin D levels and 300 with normal levels were observed for 1 year for the frequency of colds
B. 200 students had their stress levels and blood pressure measured on the same day
C. 400 students were randomly divided into 2 groups: training vs. control — anxiety was assessed after 8 weeks
D. 100 adolescents with depression and 100 without depression were compared in terms of sleep history (retrospectively)
E. Analyzed 15 publications on the topic of "sleep and immunity."
14. Identify the most likely error when using a crossover design to study the relationship between a factor and an outcome.
A. It is impossible to establish a temporal sequence (which came first — the factor or the outcome).
B. High cost and duration
C. Ethical unacceptability of intervention
D. Difficulty of randomization
E. Low statistical power
15. Indicate which of the following formulations is most correct for a scientific project hypothesis.
A. Study the effect of nutrition on adolescent health
B. Nutrition affects health
C. Adolescents who consume ≥5 servings of vegetables and fruits per day have higher hemoglobin levels than those who consume <2 servings per day
D. Conduct a nutrition survey and perform blood tests
E. Identify the relationship between nutrition and hemoglobin
16. Analyze: the project states the goal as "To assess the relationship between stress levels and blood pressure in medical students," and the tasks include:
1. reviewing the literature,
2. conducting a survey,
3. measuring blood pressure,
4. drawing conclusions.
Indicate the main drawback of the formulation of the objectives.
A. No data analysis
B. Verbs of the "memorization/understanding" level are used instead of "application/analysis"
C. The number of participants is not specified
D. No ethical approval
E. No time frame is specified
17. Select the correct definition of the object of scientific research.
A. That which undergoes change during the experiment
B. A specific property, process, or phenomenon studied in the work
C. That on which the research is conducted (the carrier of the property being studied)
D. The expected result of the research
E. The method by which the data is obtained
18. Determine which of the following elements is required in the "project passport" of scientific research.
A. A list of all sources used
B. A complete statistical analysis protocol
C. The goal, objectives, object, subject, hypothesis, and expected result
D. A copy of the ethical conclusion
E. The biography of the research supervisor
19. Analyze the query in Scopus: TITLE-ABS-KEY (sleep AND cognition) AND PUBYEAR > 2020.
Indicate which modification will most increase the relevance of the search for the topic "adolescents."

A. Add AND (teen* OR adolescent*)
B. Remove PUBYEAR
C. Replace AND with OR before sleep
D. Add AND (review)
E. Remove cognition
20. Select the correct statement about MeSH terms in PubMed.
A. MeSH are free keywords entered by authors
B. MeSH terms are assigned to articles manually by editors after publication and reflect the main content
C. MeSH can only be used in the title of an article
D. Searching by MeSH is less accurate than searching by free text
E. MeSH does not cover medical topics
21. Indicate which of the following features is not implemented in the Zotero bibliography manager.
A. Importing references from PubMed and Scopus
B. Automatic generation of a bibliography according to GOST/APA
C. Real-time collaborative editing of the library (without a cloud subscription)
D. Inserting citations into Word via a plugin
E. Attaching PDF files to records
22. Determine which of the following publications is secondary scientific information.
A. Original article on the RCT of yoga's effect on anxiety
B. Dissertation on “Risk factors for depression in adolescents”
C. Systematic review “The effect of physical activity on cognitive function in adolescents”
D. Patient medical record
E. Textbook “Fundamentals of Public Health”
23. Indicate which section of the IMRaD scientific article structure contains the interpretation of results, their comparison with data from other studies, and the limitations of the work.
A. Introduction
B. Methods
C. Results
D. Discussion
E. Abstract
24. Select the correct UDC code for the topic: “Factors affecting adherence to treatment in patients with bronchial asthma.”
A. 616.23
B. 616.23-006.1
C. 616.23+316.8
D. 616.23:615.8
E. 614.47
25. Determine which of the following characteristics most accurately distinguishes a monograph from a textbook.
A. A monograph always contains color illustrations
B. A textbook is written by a single author, while a monograph is written by a group of authors
C. A monograph is devoted to a narrow scientific problem and contains the results of original research by the author(s); a textbook is a systematic presentation of an academic discipline
D. A monograph is published only abroad
E. A textbook does not undergo editorial revision

Test assignments for midterm assessment No. 1
Option 3

1. Determine which of the statements most accurately reflects the purpose of science as a form of cognition.
A. Formation of conviction in the truth of traditional ideas
B. Systematization of the personal experience of individual specialists
C. Identification of objective patterns of natural phenomena, society and thinking based on empirical data and logical reasoning
D. Creation of artistic images to popularize knowledge
E. Accumulation of empirical observations without generalization
2. Specify the category of research funded by a grant from the National Science Foundation.
A. Domestic financing
B. National financing
C. International financing
D. Local financing
E. Private financing
3. Select the stage of research work at which the data obtained is interpreted, compared with literary sources and conclusions are formulated.
A. Preparatory stage
B. Empirical stage
C. Analytical stage
D. Final stage
E. Dissemination stage
4. Analyze the list of actions:
— conducting statistical analysis,
— plotting graphs and tables,
— interpreting the results,
— formulation of conclusions.
Specify which stage of research they belong to.
A. Preparatory
B. Empirical
C. Analytical
D. Final
E. Publication stage
5. Determine which of the listed tasks is not included in the content of the empirical stage of research.
A. Conducting a survey of participants
B. Measuring physiological parameters
C. Entering data into an electronic database
D. Developing a questionnaire and data collection protocol
E. Recording observations in standardized forms
6. Choose an example of inductive reasoning in the context of scientific research.
A. It is known that vitamin D deficiency is associated with osteoporosis; the patient has low vitamin D and osteopenia → replenishment is prescribed.
High anxiety was found in 18 adolescents with low levels of physical activity → a possible connection between physical inactivity and anxiety was suggested
. RCT has proven that cognitive behavioral therapy reduces anxiety → CBT is offered to the patient.
The HPV screening standard includes PCR → the woman underwent a PCR test

E. Patient with fever, cough and infiltrate → diagnosis: pneumonia
7. Create a PICO formulation for the question: "Does participation in the school curriculum for healthy lifestyle reduce the level of obesity in adolescents aged 13-15?" Specify the correct Population option.
A. School curriculum for healthy lifestyle
B. Lack of participation in the program
C. Adolescents aged 13-15 years studying in secondary schools
D. Body mass index ≥95th percentile
E. Duration of the program — 1 academic year
8. Indicate which feature most accurately characterizes the modeling method in biomedical research.
A. Direct observation of participants in vivo
B. Using a simplified system (mathematical, computer or animal) that simulates the key parameters of the process under study
C. Comparing two groups by one dimension at one time
D. In-depth interviews with key informants
E. Analysis of archived statistical reports
9. Determine in which case the application of the deduction method is most correct at the stage of research planning.
A. When generating a hypothesis based on observations of 10 patients
B. When building a logical chain: "If X is a risk factor and Y is a marker of X, then Y should correlate with outcome Z."
C. When interpreting an unexpected result that does not match the literature
D. When describing a clinical case without generalizations
E. When compiling a list of literature on free search
10. Determine which of the listed study designs is most appropriate for assessing the causal relationship between vaccination and a rare complication (for example, myocarditis in adolescents), subject to the ethical inadmissibility of randomization.
A. Cross-sectional study
B. Randomized controlled trial
C. Cohort prospective study
D. Case–control study
E. Descriptive research
11. Indicate which of the listed characteristics distinguishes theoretical research most accurately.
A. Using validated questionnaires
B. Collecting primary data from participants
C. Building or developing a conceptual model based on the analysis of existing theories and empirical data
D. Applying statistical criteria
E. Having a control group
12. Analyze the hypothesis: "Adolescents who get <6 hours of sleep per night have lower scores on the short-term memory test than those who sleep ≥8 hours." Specify which element makes this hypothesis operational.
A. The age range (adolescents)
is indicated. B. The variables and the way they are measured (sleep duration, test scores) are clearly defined
. C. There is a comparison of the two groups
. D. The direction of the relationship ("lower")
is indicated. E. All of the above
13. Select an example of a cross-sectional study.

A. 500 adolescents were interviewed about their level of physical activity and anxiety levels were measured on one day
B. 300 students were randomly assigned to 2 groups: intervention vs control — stress was assessed after 8 weeks
C. 400 newborns from smoking and non-smoking mothers were monitored for the frequency of acute respiratory viral infections for 1 year
D. We compared 150 adolescents with bronchial asthma and 150 without it according to the history of exposure to allergens (retrospectively)
and analyzed 12 systematic reviews on the topic "sleep and immunity"
14. Determine which of the listed measures is most effective for minimizing recall bias (memory errors) when collecting medical history.
A. Using anonymous questionnaires
B. Conducting a survey at a time convenient for the respondent
C. Using event/symptom diaries with daily completion
D. Teaching interviewers to formulate questions neutrally
E. Using coded answers
15. Indicate which of the listed formulations is the least acceptable for the task of scientific research according to the criterion of "level of application" (Bloom's taxonomy).
A. Compare the level of adhesion before and after the introduction of mobile reminders
B. Evaluate the correlation between BMI and stress levels
C. Study the impact of social media on sleep
D. Analyze differences in cognitive tests between groups with different sleep duration
E. Test the validity of the adapted questionnaire in a pilot sample
16. Analyze: the project states — subject: stress level of medical students, object: medical students. Please indicate whether the categories are correctly defined.
A. Yes, the object is the carrier of the property, the object is the property itself
B. No, the object should be "stress level", the subject should be "students"
C. No, the object and subject should match
D. No, the subject should be "stress effect on academic performance"
E. Yes, but you need to add "during the exam session"
17. Choose the correct formulation of the expected result of the scientific project.
A. Conducting a survey of 100 students
B. Collecting data on the STAI scale
C. Identification of a statistically significant negative correlation ($r \leq -0.4$, $p < 0.05$) between sleep duration and anxiety level in medical students
D. Writing a report
E. Preparation of the presentation
18. Determine which of the listed elements is not included in the mandatory content of the "project passport".
A. Purpose of the study
B. Hypothesis
C. Publication plan
D. Expected result
E. Object and subject
19. Analyze the query in PubMed: (vitamin D[MeSH]) AND (adolescent[MeSH]) AND (respiratory tract infections). Specify which modification will increase the sensitivity of the search.
A. Replace AND with OR before respiratory tract infections
B. Add synonyms: (OR respiratory infection* OR RTI)

C. Remove vitamin D[MeSH]
D. Limit the "Review" filter
E. Add NOT adult
20. Specify which of the listed operations is not supported in the basic PubMed interface without using Advanced Search.
A. Search by author
B. Search by journal name
C. Combining MeSH and free text in a single query with logical operators
D. Limitation by publication year
E. Sorting by date
21. Choose the correct statement about a literary review in a scientific project.
A. A literary review is a retelling of 5-10 articles in the order of publication
B. The main purpose is to show that the topic has not yet been studied
C. The review should include a critical analysis, identification of gaps, and a logical justification for the novelty of one's own research.
D. The review does not need to specify the methods of literature search
E. It is enough to refer to the textbook and one article
22. Determine which of the listed publications relates to tertiary scientific information.
A. Original article in The Lancet
B. Systematic review in The Cochrane Library
C. Chapter in the handbook "Adolescent Hygiene" (2025)
D. Dissertation on "Risk factors for depression"
E. Research report submitted to the grantee
23. Specify which section of the IMRaD structure contains a description of the purpose of the study, justification of relevance and a brief review of the literature.
A. Methods
B. Results
C. Discussion
D. Introduction
E. Abstract
24. Select the correct UDC code for the theme.: "Psychosocial factors affecting adherence to treatment for bronchial asthma in adolescents.
" A. 616.23
B. 616.23-053.9
C. 616.23+159.94
D. 616.23:159.9
E. 614.47
25. Determine which of the listed characteristics most accurately distinguishes a scientific article from conference abstracts.
A. The article is always published in English
B. Abstracts do not pass review, the article passes
C. The article contains a full description of the methods, results and discussions; abstracts are a summary (usually < 1 page)
D. Abstracts are published only in electronic form
E. The article cannot be presented at the conference

Test tasks for border control No. 1
Option-4

1. Determine which of the statements most accurately reflects the classification of sciences by research object.
A. Theoretical and applied
B. Natural Sciences, Social sciences, Humanities
C. Fundamental and exploratory
D. Experimental and descriptive
E. Interdisciplinary and highly specialized
2. Specify the category of research and development funded by the Erasmus+ (EU) program.
A. Domestic financing
B. National financing
C. International financing
D. Local financing
E. Private financing
3. Select the stage of the research work at which the development of a schedule plan, the preparation of a "project passport" and the receipt of ethical approval are carried out.
A. Analytical stage
B. Preparatory stage
C. Empirical stage
D. Final stage
E. Dissemination stage
4. Analyze the list of actions:
— development of a questionnaire,
— pilot testing of tools,
— preparation of a research protocol,
— submission of an application to the ethics committee.
Specify which stage of research they belong to.
A. Analytical
B. Preparatory
C. Empirical
D. The final
E. Stage of the report
5. Determine which of the listed tasks is not included in the content of the final stage of research.
A. Preparation of a scientific article
B. Preparation of a report for the grantee
C. Conducting a survey of participants
D. Preparing a report for the conference
E. Reflection on the results of the project
6. Choose the correct definition of scientific research methodology.
A. A set of specific methods of data collection and analysis
B. A scientific discipline that studies the methods of another science
C. A system of principles, approaches and justifications for the choice of methods, ensuring the achievement of the research goal
D. Dissertation section, which describes the methods
E. Algorithm of statistical processing

7. Create a PICO formulation for the question: "Does the school's smoking prevention program reduce the frequency of tobacco experiments in adolescents aged 12-14?" Specify the correct version of the Comparison.
A. Adolescents aged 12-14 years
B. School smoking prevention program
C. Lack of participation in the program (regular education)
D. Number of smoking attempts in 6 months
E. Self-report on a cigarette sample
8. Analyze: the researcher, observing a group of teenagers, noticed that those who spend a lot of time on social networks are more likely to complain of anxiety. Based on this, he hypothesized a possible connection. Specify which method is used.
A. Deduction
B. Induction
C. Modeling
D. Analogy
E. Formalization
9. Indicate which feature most accurately characterizes the method of analogy in scientific research.
A. Transition from a general law to a special case
B. Building a simplified system that simulates a real process
C. Inferring the properties of one object based on similarity to another
D. Generalization based on a series of observations
E. Using mathematical equations to describe a phenomenon
10. Determine which of the listed designs is most suitable for assessing the frequency of chronic fatigue syndrome in medical students at the time of examination.
A. Randomized controlled trial
B. Cohort prospective study
C. Case-control
study D. Cross–sectional study
E. Case report
11. Indicate which of the listed characteristics distinguishes empirical research most accurately.
A. The main goal is to develop a new concept
B. Using only secondary data
C. Collecting primary data through observation, experiment, survey, or measurement
D. No statistical analysis
E. Relying solely on philosophical texts
12. Analyze the hypothesis: "Medical students who sleep <6 hours a day during exams have a higher frequency of headache episodes per week than those who sleep ≥7 hours." Specify which element is missing and makes the hypothesis less operational.
A. The comparison groups
are indicated. B. There is a direction of communication
. C. The method of measuring the "frequency of headache episodes" is not specified (for example: diary, questionnaire)
D. The population
of E. is indicated. The time context is indicated
13. Choose an example of a randomized controlled trial (RCT).
A. 200 adolescents were randomly assigned to 2 groups: yoga 3 times/week vs control — anxiety assessment after 8 weeks
B. 300 students were interviewed about sleep and stress on one day

C. 250 newborns from smoking and non-smoking mothers were observed growing for 1 year
D. 100 were compared
10 systematic reviews on "sleep and academic performance" were analyzed (retrospectively) in adolescents with anemia and 100 without it.
14. Determine which of the listed measures is most effective in reducing selection bias when forming groups in an observational study.
A. Using anonymous questionnaires
B. Random selection from the general population with clear inclusion/exclusion criteria
C. Conducting a survey at a time convenient for the respondent
D. Training interviewers in a standard scenario
E. Using a validated questionnaire
15. Indicate which of the listed formulations is most consistent with the requirement of "concreteness and measurability" in the formulation of the research objective.
A. To study the effect of sleep on students' health
B. To evaluate the relationship between sleep duration (in hours/day) and anxiety level (STAI scores) among medical students during the exam session
C. Conduct a survey and measure blood pressure
D. Identify what influences students' well-being and analyze stress factors

16. Analyze: the project states the hypothesis: "Vitamin D deficiency is associated with the frequency of acute respiratory viral infections in adolescents." Specify which element needs to be added in order for the hypothesis to become operational.
A. Age (adolescents)
B. Direction of communication (for example: "the lower the vitamin D level, the higher the frequency of acute respiratory viral infections")
C. Measurement method (level 25(OH)D in nmol/l; the number of ARVI episodes in 6 months according to the diary)
D. All of the above
E. Only B and C
17. Choose the correct definition of the subject of scientific research.
A. On whom/ on what the research
is being conducted B. A specific property, process or phenomenon being studied within the framework of the object
C. Expected result of the work
D. The method by which the data is obtained
E. Scientific supervisor
18. Determine which of the listed elements must be indicated in the "project passport" at the planning stage.
A. Full list of references
B. The results of the statistical analysis
C. The hypothesis of the study
D. A copy of the ethical conclusion
E. Photographs of participants
19. Analyze the query in Scopus: TITLE-ABS-KEY ("physical activity" AND anxiety AND adolescence*). Specify which modification will increase the relevance due to the accuracy of the terms.
A. Replace anxiety with anxiety disorders OR stress OR "mental health"
B. Add AND (2020-2025)
C. Replace adolescent* with Adolescent[MeSH]

D. Add AND (review)
E. Remove the quotation marks around physical activity
20. Specify which of the listed operations is impossible in PubMed without switching to Advanced Search.
A. Search by specific journal (JAMA[Journal])
B. Search by author (Smith JA[Author])
C. Combination of MeSH term and free text in one field with logical operators
D. Restriction on publication type (Randomized Controlled Trial[pt])
E. Sort by "Best Match"
21. Select the correct statement about the search using MeSH in PubMed.
A. MeSH terms are entered only in Russian
B. When searching for MeSH, narrower and narrower terms are automatically included (for example, Adolescent includes Child, Adolescent)
. MeSH does not cover behavioral and social topics.
D. MeSH search is less sensitive than free text, but more specific
to E. Both B and D
22. Determine which of the listed characteristics most accurately distinguishes a traditional literary review from a systematic one.
A. A traditional review is always longer
B. A traditional review does not have a predefined search and selection protocol
C. A systematic review does not require ethical approval
D. The traditional review is published only in books
E. The systematic review does not include a meta-analysis
23. Specify which section of the scientific article in the IMRaD format contains raw data (tables, graphs) without their interpretation.
A. Introduction
B. Methods
C. Results
D. Discussion
E. Abstract
24. Select the correct UDC code for the theme.: "The role of sleep in the formation of cognitive functions in adolescents.
" A. 159.9.01
B. 612.821
C. 159.9:612.821
D. 614.8
E. 373.5
25. Determine which of the listed publications is not a scientific document based on research results.
A. Original article in the peer-reviewed journal
B. Dissertation
C. Abstracts of the international conference
D. Educational and methodical manual on the history of medicine
E. Research report for the grant recipient

Questions of the border control program 2

1. What does the IMRaD structure mean in a scientific paper?
2. What sections does the IMRaD structure include?
3. What are the goals of the "Introduction" section in a scientific article?
4. What should be described in the "Methods" section?
5. How to determine the reliability of research results?
6. What data is usually included in the "Results" section?
7. What is analyzed in the "Discussion" section of a scientific article?
8. What are the main errors encountered in interpreting the p-value, OR, RR tables?
9. How is the confidence interval calculated and what is it for?
10. What are the rules for the design of the list of references according to GOST and Vancouver style?
11. Define the concept of "scientific ethics".
12. What are the main principles of ethics of the scientific community?
13. What types of scientific results do you know?
14. What is the purpose of the anti-plagiarism check?
15. What is Turnitin and
antiplagiat.ru 16. Why is it important to publish scientific results?
17. What are the consequences of violating scientific ethics?
18. Give examples of copyright violations in scientific activities.
19. What is considered a false statement in a scientific publication?
20. How can I protect my rights and intellectual property when publishing?
21. What regulatory and legal aspects regulate scientific activity in universities?
22. What is the management structure in research institutions?
23. What responsibilities do the heads of research organizations perform?
24. What forms of organization of research work exist in universities?
25. What are the goals set when conducting research in higher education institutions?
26. How to define the roles of teachers and students in research?
27. What organizational functions do research institutes perform?
28. What methods are used to structure research work at the department?
29. What is the system of scientific personnel training in Kazakhstan?
30. What is the difference between the training of scientific and scientific-pedagogical staff?
31. What levels of education include the training of scientific personnel (master's degree, residency, PhD)?
32. What are the requirements for dissertations in postgraduate education?
33. What is the difference between the structure of master's and doctoral theses?
34. What mandatory elements should be included in a dissertation?
35. What criteria of scientific validity are taken into account when evaluating a dissertation?
36. What forms of research work do students have?
37. What is research and development and how is it organized?
38. How does the participation of students in conferences affect their scientific activity?
39. Name at least three extracurricular forms of scientific activity of students.
40. What factors increase the cognitive activity of students during scientific work?

Interim Assessment №2
Version 1

1. Determine which statement most accurately reflects the difference between *public health* and *clinical medicine*.
   A. Public health focuses on treating individual patients, while clinical medicine focuses on prevention
   B. Public health aims to improve population health through prevention, policy, and systemic interventions; clinical medicine focuses on diagnosis and treatment of individuals
   C. Public health does not use statistical data, while clinical medicine always uses it
   D. Clinical medicine is funded by the state, while public health is funded by private foundations
   E. Public health has no relation to epidemiology
2. Indicate which of the following leaders is considered a key figure in modern global public health.
   A. Gregor Mendel
   B. Louis Pasteur
   C. Tedros Adhanom Ghebreyesus
   D. Ibn Sina
   E. Nikolai Pirogov
3. Choose the management model in which a leader motivates the team toward a shared vision through inspiration and development of potential.
   A. Authoritarian
   B. Transactional
   C. Liberal
   D. Transformational
   E. Bureaucratic
4. Analyze: in a city with a population of 200,000, 3,200 children were born in one year. Indicate the *crude birth rate* (per 1,000 population).
   A. 8‰
   B. 12‰
   C. 16‰
   D. 20‰
   E. 25‰
5. Determine how *primary morbidity* differs from *secondary morbidity*.
   A. Primary includes all disease cases; secondary includes only chronic ones
   B. Primary refers to newly diagnosed cases within a year; secondary refers to previously known cases
   C. Primary is registered in outpatient clinics; secondary in hospitals
   D. Secondary refers to complications; primary to the main disease
   E. There is no difference — the terms are synonymous
6. Indicate what the *infant mortality rate* reflects.
   A. Number of deaths among children under 1 year per 1,000 live births
   B. Number of stillbirths per 1,000 deliveries
   C. Mortality among children under 5 years
   D. Number of maternal deaths during childbirth
   E. Overall child mortality
7. Select the level of the healthcare system of the Republic of Kazakhstan at which specialized care (e.g., cardiologist, endocrinologist) is provided.
   A. Primary
   B. Secondary
   C. Tertiary

D. Quaternary
E. Not included in the system

8. Determine which international organization plays a key role in developing vaccination standards and combating infectious diseases.
A. UNICEF
B. WHO
C. World Bank
D. UN
E. UNESCO
9. Indicate how the principle of *universal coverage* is implemented in the OSMI (Compulsory Social Medical Insurance) system of the Republic of Kazakhstan.
A. Only employed citizens receive medical care
B. All registered participants have equal access to the guaranteed benefits package
C. Medical care is provided only at the place of residence registration
D. Foreigners are not entitled to medical care
E. Care is provided only with a voluntary insurance policy
10. Determine the main purpose of *Medical and Social Expertise (MSE)* in the Republic of Kazakhstan.
A. Prescribing medications
B. Establishing disability status and developing an individual rehabilitation program
C. Conducting preventive examinations
D. Issuing sick leave certificates
E. Processing pension payments
11. Indicate which of the following criteria is the basis for establishing *disability* in the Republic of Kazakhstan.
A. Presence of a chronic disease
B. Reduced work capacity due to persistent functional disorders
C. Reaching the age of 65
D. Unemployment
E. Living in a rural area
12. Select three diseases classified as *socially significant* in the Republic of Kazakhstan.
A. Influenza, ARVI, angina
B. Tuberculosis, HIV/AIDS, oncological diseases
C. Hypertension, type 2 diabetes, obesity
D. Allergy, migraine, insomnia
E. Gastritis, colitis, hemorrhoids
13. Determine which of the following factors belongs to the *social determinants* of a healthy lifestyle.
A. Level of physical activity
B. Level of education and income
C. Presence of chronic diseases
D. Genetic predisposition
E. Hemoglobin level
14. Indicate which concept reflects the *cause of a disease*.
A. Diagnosis
B. Prognosis
C. Etiology
D. Pathogenesis
E. Symptom

15. Determine how *pathogenetic treatment* differs from *symptomatic treatment*.
    A. Pathogenetic treatment eliminates the cause; symptomatic treatment only addresses manifestations
    B. Pathogenetic treatment is used only in inpatient settings
    C. Symptomatic treatment is always more effective
    D. Pathogenetic treatment does not require a diagnosis
    E. There is no difference
16. Select the definition of *problematic medications* in elderly patients.
    A. Medications that cause addiction
    B. Drugs that may cause serious adverse effects or interactions in the elderly due to pharmacokinetic changes
    C. Expensive imported drugs
    D. Medications without a registration certificate
    E. Broad-spectrum antibiotics
17. Determine why *drug interactions* are especially dangerous in elderly patients.
    A. They often take multiple medications simultaneously (polypharmacy)
    B. They cannot read instructions
    C. They lack internet access
    D. They do not trust doctors
    E. They have reduced appetite
18. Indicate the main purpose of *clinical-pharmacological guidelines*.
    A. To increase drug sales
    B. To standardize treatment approaches based on evidence-based medicine
    C. To replace the physician's clinical judgment
    D. To simplify the work of pharmacists
    E. To reduce treatment costs
19. Determine which principle of the Helsinki Declaration is fundamental when conducting research involving humans.
    A. Priority of scientific progress over participant interests
    B. Priority of participant interests and well-being over scientific interests
    C. Possibility of concealing research objectives for objectivity
    D. Mandatory inclusion of vulnerable groups
    E. Waiver of consent in anonymous surveys
20. Indicate which element is *mandatory* in the informed consent procedure.
    A. Signature of a relative
    B. Provision of information about the purpose, methods, risks, and right to withdraw
    C. Video recording of the process
    D. Approval by the chief physician
    E. Payment for participation
21. Determine the main function of an *ethics committee* in research.
    A. Funding the study
    B. Evaluating the ethical acceptability of the protocol to protect participants' rights
    C. Publishing results
    D. Appointing researchers
    E. Performing statistical analysis
22. Select an example of *social marketing* in healthcare.
    A. Advertising a new antibiotic in a medical journal
    B. "Quit smoking — give yourself life" campaign with free hotlines
    C. Clinic banner at a bus stop

D. Discounts on medicines at a pharmacy
E. Drug presentation by a pharmaceutical representative

23. Determine how a conflict between *pharmaceutical company marketing* and *evidence-based medicine* may arise.
A. Promotion of a drug without sufficient evidence of efficacy
B. Publication of RCT results in a peer-reviewed journal
C. Participation in international congresses
D. Training physicians in new methods
E. Reducing drug prices
24. Indicate which restriction on advertising medicinal products applies in the Republic of Kazakhstan.
A. Advertising of prescription drugs is prohibited in media targeting the general public
B. Advertising of any drugs is allowed without restrictions
C. Advertising is permitted only on social media
D. Only domestic drugs may be advertised
E. Advertising is allowed only with patient approval
25. Analyze: when developing an adolescent obesity prevention program, it is important to consider not only diet and physical activity, but also family income level, access to sports facilities, and school environment. Indicate which approach underlies this planning.
A. Purely clinical
B. Biomedical
C. Medico-social
D. Pharmacological
E. Economic

Interim Assessment №2
— Version 2

1. Determine which of the following functions is *most characteristic* of a public health leader.
A. Performing routine administrative tasks
B. Formulating a vision and mobilizing resources to address systemic problems
C. Conducting laboratory analyses
D. Prescribing medications
E. Maintaining medical documentation
2. Indicate which management model assumes rewarding employees for completing clearly defined tasks.
A. Transformational
B. Liberal
C. Authoritarian
D. Transactional
E. Situational
3. Analyze: in a region with a population of 500,000, 6,500 people died during the year. Indicate the *crude death rate* (per 1,000 population).
A. 8‰
B. 10‰
C. 13‰
D. 15‰
E. 20‰
4. Determine what the *overall morbidity rate* reflects.
A. Number of all diagnosed disease cases per 1,000 population
B. Only newly diagnosed cases

C. Only chronic diseases
D. Mortality from a specific disease
E. Frequency of hospitalizations

5. Indicate which indicator is *most accurate* for assessing population aging.
   A. Birth rate
   B. Demographic dependency ratio
   C. Proportion of people aged 65+ in the total population
   D. Life expectancy at birth
   E. Death rate
6. Select the level of the healthcare system of the Republic of Kazakhstan where primary medical and sanitary care is provided.
   A. Primary
   B. Secondary
   C. Tertiary
   D. Quaternary
   E. Not included in the system
7. Determine which international organization is a key partner of Kazakhstan in implementing the Expanded Program on Immunization.
   A. World Bank
   B. WHO
   C. UNESCO
   D. UN
   E. International Monetary Fund
8. Indicate which service is *not included* in the Guaranteed Free Medical Care Package (GFMCP) in the Republic of Kazakhstan.
   A. Preventive examinations
   B. Emergency medical care
   C. Planned dental care for adults
   D. Treatment of socially significant diseases
   E. Prenatal care
9. Determine which objective *best corresponds* to the activities of Medical and Social Expertise (MSE).
   A. Assigning pensions
   B. Determining disability status and developing an Individual Rehabilitation Program (IRP)
   C. Issuing prescriptions for subsidized medicines
   D. Administering preventive vaccinations
   E. Processing sanatorium referrals
10. Indicate which document is *mandatory* after disability status is established in the Republic of Kazakhstan.
    A. Medical record
    B. Individual Rehabilitation Program (IRP)
    C. Sick leave certificate
    D. OSMI insurance policy
    E. Income statement
11. Select the disease that is *not included* in the list of socially significant diseases in the Republic of Kazakhstan.
    A. Tuberculosis
    B. HIV/AIDS
    C. Arterial hypertension

D. Oncological diseases
E. Mental and behavioral disorders

12. Determine which of the following factors belongs to the *medical determinants* of a healthy lifestyle.
A. Income level
B. Access to clean drinking water
C. Immune status and presence of chronic diseases
D. Education level
E. Social support
13. Indicate which concept reflects the *prediction of disease course*.
A. Diagnosis
B. Etiology
C. Prognosis
D. Pathogenesis
E. Symptom
14. Determine how *etiotropic treatment* differs from other types of therapy.
A. It eliminates the cause of the disease
B. It relieves symptoms
C. It restores organ function
D. It prevents complications
E. It improves quality of life
15. Select the group of drugs *commonly classified as problematic* in elderly patients according to the Beers Criteria.
A. Antibiotics
B. NSAIDs with long-term use
C. Vitamins
D. Probiotics
E. Second-generation antihistamines
16. Determine which problem is *most characteristic* of polypharmacy in elderly patients.
A. Increased risk of drug interactions and adverse reactions
B. Improved treatment adherence
C. Simplified pharmacotherapy
D. Reduced treatment cost
E. Enhanced cognitive function
17. Indicate the role of clinical-pharmacological guidelines in physician practice.
A. Provide a standardized, evidence-based approach to treatment
B. Replace clinical judgment
C. Are mandatory only for students
D. Used exclusively for research purposes
E. Not applied in primary care settings
18. Determine which principle of the Helsinki Declaration requires that research be conducted only by qualified specialists.
A. Principle of beneficence
B. Principle of justice
C. Principle of competence
D. Principle of autonomy
E. Principle of confidentiality
19. Indicate in which case informed consent may be obtained from a legal representative.
A. Participation in a student survey

B. Working with individuals who have cognitive impairments and cannot provide consent independently
C. Analysis of anonymous statistical data
D. Literature review
E. Observation in a public place

20. Determine which task is *not part of* the ethics committee's responsibilities.
A. Evaluating the scientific novelty of the study
B. Assessing risks to participants
C. Reviewing the informed consent form
D. Protecting participants' rights and dignity
E. Analyzing risk-benefit balance
21. Select an example of *commercial marketing* in healthcare.
A. Ministry of Health anti-smoking campaign
B. Advertisement of a new antihypertensive drug in a medical journal
C. "Healthy Heart" program
D. Educational materials on nutrition in schools
E. Smoking cessation hotline
22. Determine how evidence-based medicine can limit pharmaceutical companies' marketing strategies.
A. By requiring publication of independent RCTs before promoting a drug
B. By allowing promotion without proof of efficacy
C. By encouraging emotional appeals
D. By supporting promotion based solely on opinion leaders' views
E. By ignoring side effects
23. Indicate which statement *most accurately* reflects the relationship between marketing and public health.
A. Marketing always contradicts public health interests
B. Social marketing can be used to promote healthy behaviors
C. Marketing is used only in the private sector
D. Public health does not use marketing tools
E. Marketing replaces epidemiological research
24. Analyze: when planning a program to reduce salt intake in the population, cultural traditions, product availability, and literacy levels are considered alongside knowledge of salt's harms. Indicate which approach is used.
A. Purely biomedical
B. Clinical
C. Medico-social
D. Pharmacological
E. Economic
25. Determine how demographic aging affects the healthcare system.
A. Reduces demand for medical services
B. Increases the burden on primary care and long-term care services
C. Decreases medication expenditures
D. Reduces the number of chronic diseases
E. Simplifies resource planning

Interim Assessment №2
— Version 3

1. Determine which characteristic *most accurately* reflects the role of a leader in implementing a national tuberculosis control program.
A. Performing laboratory sputum analysis

B. Prescribing anti-tuberculosis drugs
C. Coordinating interagency collaboration, mobilizing resources, and ensuring political support
D. Maintaining medical documentation
E. Issuing sick leave certificates

2. Indicate which management model assumes that a leader adapts their leadership style depending on the team's maturity level.
A. Transformational
B. Transactional
C. Situational
D. Authoritarian
E. Liberal
3. Analyze: in a region with a population of 800,000, 12,800 children were born and 9,600 people died in one year. What is the *natural population increase* (per 1,000 population)?
A. –4‰
B. 0‰
C. +4‰
D. +8‰
E. +12‰
4. Determine which indicator *most accurately* reflects the health status of a population.
A. Number of physicians per 10,000 population
B. Crude death rate
C. Life expectancy at birth
D. Number of hospitals
E. Healthcare funding volume
5. Indicate which demographic trend is *most relevant* for the Republic of Kazakhstan in the 2020s.
A. Sharp decline in birth rates
B. Mass emigration
C. Population aging and increasing share of people aged 65+
D. Decline in urbanization
E. Reduction in life expectancy
6. Select the level of the healthcare system of the Republic of Kazakhstan where highly specialized care (e.g., neurosurgery, organ transplantation) is provided.
A. Primary
B. Secondary
C. Tertiary
D. Quaternary
E. Not included in the system
7. Determine which function is *not related* to the goals of the Compulsory Social Medical Insurance (OSMI) system in the Republic of Kazakhstan.
A. Ensuring equal access to medical care
B. Improving efficiency of resource use
C. Funding private clinics without quality control
D. Reducing out-of-pocket payments
E. Incentivizing quality through payment-for-performance
8. Indicate which task is the *main purpose* of Medical and Social Expertise (MSE).
A. Prescribing medications
B. Determining persistent functional disorders and establishing disability status
C. Issuing school-related certificates

D. Administering preventive vaccinations
E. Processing sanatorium referrals

9. Determine which criterion is *not a basis* for establishing disability in the Republic of Kazakhstan.
   A. Presence of a disease
   B. Persistent functional disorder
   C. Limitation of life activities
   D. Need for social protection measures
   E. Reaching retirement age
10. Select the disease that *is included* in the list of socially significant diseases in the Republic of Kazakhstan.
   A. Influenza
   B. Arterial hypertension
   C. Tuberculosis
   D. Allergic rhinitis
   E. Gastritis
11. Determine which factor *most accurately* belongs to the *medical determinants* of health.
   A. Household income level
   B. Access to clean drinking water
   C. Presence of chronic diseases and immune status
   D. Mother's education level
   E. Family social support
12. Indicate which concept reflects the *set of signs and symptoms* that allow disease identification.
   A. Etiology
   B. Pathogenesis
   C. Diagnosis
   D. Prognosis
   E. Syndrome
13. Determine how *symptomatic treatment* differs from other types of therapy.
   A. It eliminates the cause of the disease
   B. It aims to relieve disease manifestations without affecting its cause
   C. It restores lost functions
   D. It prevents relapses
   E. It replaces damaged organs
14. Select an example of a *problematic medication* in elderly patients according to international guidelines.
   A. Paracetamol
   B. Loratadine
   C. Digoxin in patients with reduced kidney function
   D. Omeprazole
   E. Metformin
15. Determine why *drug interactions* are especially dangerous in polypharmacy.
   A. They may enhance or reduce drug effects, causing toxicity or inefficacy
   B. They increase treatment cost
   C. They improve adherence
   D. They simplify dosing regimens
   E. They reduce liver burden
16. Indicate the main purpose of *clinical-pharmacological guidelines*.
   A. To ensure a unified, evidence-based approach to treatment based on best available data
   B. To increase drug sales

C. To replace individual physician judgment
D. To simplify pharmacists' work
E. To reduce the number of prescribed drugs

17. Determine which principle of the Helsinki Declaration requires that participant interests always prevail over scientific interests.
A. Principle of competence
B. Principle of beneficence
C. Principle of respect for persons
D. Principle of justice
E. Principle of confidentiality

18. Indicate in which case informed consent may be obtained from a legally authorized representative.
A. Participation in an anonymous online student survey
B. Working with a participant who has severe cognitive impairment and cannot understand the study
C. Analysis of open statistical data
D. Literature review
E. Observation in a shopping mall

19. Determine which task *is part of* the ethics committee's responsibilities.
A. Evaluating scientific novelty
B. Checking statistical analysis correctness
C. Assessing risks to participants and protecting their rights
D. Appointing researchers
E. Funding the project

20. Select an example of *social marketing* in public health.
A. Advertisement of a new antibiotic in a professional journal
B. "Check your blood pressure — save your heart" campaign with free screenings in shopping centers
C. Private clinic banner on a taxi
D. Pharmacy discounts on prescription drugs
E. Pharmaceutical representative presenting a drug to a physician

21. Determine how evidence-based medicine influences pharmaceutical companies' marketing strategies.
A. It requires independent efficacy and safety data before promotion
B. It allows only emotional arguments
C. It ignores side effects in advertising
D. It supports promotion based on celebrity opinions
E. It encourages hidden advertising in scientific articles

22. Indicate which statement *most accurately* reflects the relationship between marketing and healthy lifestyles.
A. Marketing cannot influence health-related behavior
B. Social marketing can effectively promote smoking cessation, physical activity, and healthy eating
C. Only bans, not marketing, affect behavior
D. Marketing is used exclusively for drug sales
E. Healthy lifestyles do not require marketing efforts

23. Analyze: when developing a diabetes prevention program, biomedical factors (obesity, heredity) and social factors (income, food access, dietary culture) are considered. Which approach is used?
A. Purely clinical
B. Biomedical
C. Medico-social
D. Pharmacological
E. Economic

24. Determine how demographic aging affects healthcare resource planning.
    A. Reduces need for chronic care
    B. Decreases number of polypharmacy patients
    C. Increases demand for geriatric and palliative services
    D. Lowers medication expenditures
    E. Simplifies primary care organization
25. Indicate which measure is *most effective* for improving treatment adherence in elderly patients.
    A. Prescribing the maximum number of drugs
    B. Using complex dosing regimens
    C. Applying simple treatment schedules and reminders (e.g., mobile apps or pill organizers)
    D. Withholding diagnosis information from the patient
    E. Fully transferring medication responsibility to relatives

Interim Assessment №2
— Version 4

1. Determine which function *most accurately* reflects the role of a leader in managing the healthcare system during an epidemic.
    A. Performing laboratory tests
    B. Prescribing antiviral drugs
    C. Coordinating institutional actions, ensuring resource availability, and informing the public
    D. Maintaining patient medical records
    E. Issuing sick leave certificates
2. Indicate which management model assumes that a leader inspires followers to achieve common goals through personal example and vision.
    A. Transactional
    B. Authoritarian
    C. Transformational
    D. Liberal
    E. Bureaucratic
3. Analyze: in a region with a population of 1,000,000, 18,000 children were born and 12,000 people died in one year. What is the *natural population increase* (per 1,000 population)?
    A. –6‰
    B. 0‰
    C. +3‰
    D. +6‰
    E. +9‰
4. Determine which indicator *most accurately* reflects the level of development of a country’s healthcare system.
    A. Number of healthcare workers per 10,000 population
    B. Total healthcare funding volume
    C. Infant mortality rate
    D. Number of hospitals
    E. Accessibility of private clinics
5. Indicate which demographic challenge is *most relevant* for the Republic of Kazakhstan in the coming decades.
    A. Sharp increase in birth rates
    B. Mass youth emigration
    C. Population aging and growing share of people aged 65+

D. Decline in urbanization
E. Reduction in life expectancy

6. Select the level of the healthcare system of the Republic of Kazakhstan where emergency and urgent medical care is provided.
   A. Primary
   B. Secondary
   C. Tertiary
   D. Quaternary
   E. Not included in the system
7. Determine which goal is *not related* to the principles of the OSMI (Compulsory Social Medical Insurance) system in the Republic of Kazakhstan.
   A. Universal population coverage
   B. Financial protection against out-of-pocket payments
   C. Commercialization of all medical services
   D. Improving quality and accessibility of care
   E. Incentivizing institutional efficiency
8. Indicate which task is the *main purpose* of Medical and Social Expertise (MSE).
   A. Prescribing medications
   B. Establishing disability status and developing an Individual Rehabilitation Program (IRP)
   C. Issuing school-related certificates
   D. Conducting preventive check-ups
   E. Processing sanatorium referrals
9. Determine which criterion is *mandatory* for establishing disability in the Republic of Kazakhstan.
   A. Presence of any chronic disease
   B. Persistent functional disorder limiting life activities
   C. Reaching age 60
   D. Unemployment
   E. Living in a rural area
10. Select the disease that *is included* in the list of socially significant diseases in the Republic of Kazakhstan.
    A. Influenza
    B. Allergic rhinitis
    C. Oncological diseases
    D. Gastritis
    E. Migraine
11. Determine which factor *most accurately* belongs to the *social determinants* of health.
    A. Hemoglobin level
    B. Immune status
    C. Level of education and household income
    D. Presence of chronic diseases
    E. Genetic predisposition
12. Indicate which concept reflects the *cause of disease onset*.
    A. Diagnosis
    B. Prognosis
    C. Etiology
    D. Pathogenesis
    E. Symptom

13. Determine how *pathogenetic treatment* differs from other types of therapy.
    A. It eliminates the cause of the disease
    B. It targets the mechanisms of disease development
    C. It only relieves symptoms
    D. It replaces damaged organs
    E. It prevents relapses
14. Select an example of a *problematic medication* in elderly patients according to the Beers Criteria.
    A. Paracetamol
    B. Loratadine
    C. Benzodiazepines with long-term use
    D. Omeprazole
    E. Metformin
15. Determine why *polypharmacy* poses a special risk for elderly patients.
    A. It increases the likelihood of drug interactions and adverse reactions
    B. It improves treatment adherence
    C. It simplifies dosing regimens
    D. It reduces treatment cost
    E. It enhances therapeutic efficacy
16. Indicate the main purpose of *clinical-pharmacological guidelines*.
    A. To ensure a standardized, evidence-based approach to treatment
    B. To increase drug sales
    C. To replace clinical physician judgment
    D. To simplify pharmacists' work
    E. To reduce the number of prescribed medications
17. Determine which principle of the Helsinki Declaration requires obtaining voluntary informed consent after providing full information.
    A. Principle of competence
    B. Principle of beneficence
    C. Principle of respect for persons (autonomy)
    D. Principle of justice
    E. Principle of confidentiality
18. Indicate in which case informed consent may be obtained from a legally authorized representative.
    A. Participation in an anonymous student survey
    B. Working with a participant who has severe cognitive impairment and cannot provide consent independently
    C. Analysis of publicly available statistical data
    D. Literature review
    E. Observation in a public space
19. Determine which task *is part of* the ethics committee's responsibilities.
    A. Evaluating scientific novelty
    B. Checking correctness of statistical analysis
    C. Protecting participants' rights, safety, and dignity
    D. Appointing researchers
    E. Funding the project
20. Select an example of *social marketing* in public health.
    A. Advertisement of a new antibiotic in a professional journal
    B. "Healthy eating from childhood!" campaign with free workshops in schools
    C. Private clinic banner on a taxi

D. Pharmacy discounts on prescription drugs
E. Pharmaceutical representative presenting a drug to a physician

21. Determine how evidence-based medicine influences pharmaceutical companies' marketing strategies.
A. It requires independent data on efficacy and safety before promotion
B. It allows only emotional arguments
C. It ignores side effects in advertising
D. It supports promotion based on celebrity opinions
E. It encourages hidden advertising in scientific articles
22. Indicate which statement *most accurately* reflects the relationship between marketing and healthy lifestyles.
A. Marketing cannot influence health-related behavior
B. Social marketing can effectively promote smoking cessation, physical activity, and healthy eating
C. Only bans, not marketing, affect behavior
D. Marketing is used exclusively for drug sales
E. Healthy lifestyles do not require marketing efforts
23. Analyze: when developing a cardiovascular disease prevention program, biomedical factors (blood pressure, cholesterol) and social factors (stress levels, working conditions, access to sports) are considered. Which approach is used?
A. Purely clinical
B. Biomedical
C. Medico-social
D. Pharmacological
E. Economic
24. Determine how demographic aging affects the healthcare system.
A. Reduces need for chronic care
B. Decreases number of polypharmacy patients
C. Increases demand for geriatric, palliative, and rehabilitation services
D. Lowers medication expenditures
E. Simplifies primary care organization
25. Indicate which measure is *most effective* for improving treatment adherence in elderly patients.
A. Prescribing the maximum number of medications
B. Using complex dosing regimens
C. Applying simple treatment schedules and reminders (e.g., mobile apps or dose-packaged medications)
D. Withholding diagnosis information from the patient
E. Fully transferring medication responsibility to relatives