**PROGRAM OF AN EXAM ON COURSE PATIENT AND SOCIETY**

**3rd GRADE**

**GENERAL MEDICINE**

The purpose of the program is to evaluate the knowledge, skills and abilities acquired by the 3rd year student in the course of studying the discipline.

**The exam consists of two stages.**

**First stage** is comprehensive testing. The goal is to check the level of theoretical training of students, mastery of skills, readiness for professional activity and development of professional thinking.

**Second stage is** an assessment of practical skills for understanding an epidemiology of diseases, an application of epidemiological and statistical methods with high-quality results for solving public health issues. The purpose of this stage is to demonstrate the application of knowledge, skills and abilities in accordance with the qualification requirements.

**The final grade includes:**

Testing - 25% (75 comprehension and application tests).

Skills: PBL - case study: epidemiology 25%, biostatistics 25%, evidence-based medicine 25%

**Matrix of examination tasks by course “Patient and society”**

1. **Tests for Epidemiology module**

|  |  |  |  |
| --- | --- | --- | --- |
| **N** | **Items** | **А** | **В** |
| **1** | Definition and tasks of epidemiology. Epidemic process. Epidemiological triad. | 2 | 2 |
| **2** | Measuring the incidence, prevalence and mortality of the population. | 2 | 1 |
| **3** | Descriptive and analytical research methods. | 2 | 1 |
| **4** | Experimental research methods. Diagnostic and screening tests. | 2 | 1 |
| **5** | Epidemiological classification and epidemiology of infectious diseases. | 2 | 1 |
| **6** | Outbreak investigation | 2 | 1 |
| **7** | Epidemiology of chronic noncommunicable diseases | 1 | 1 |
| **8** | Types and components of surveillance | 1 | 1 |
| **9** | Disease prevention | 1 | 1 |
|  | Total: | **15** | **10** |

**2. Tests for Biostatistics module**

|  |  |  |  |
| --- | --- | --- | --- |
| **N** | **Items** | **А** | **В** |
| **1** | Bases of Biostatistics.  | 1 | 1 |
| **2** | Calculation of statistical indicators. | 1 | 1 |
| **3** | Descriptive statistics: data types, measurement scale of variables and mean. | 1 | 1 |
| **4** | Analytical statistics: basic principles of data analysis. | 1 | 1 |
| **5** | Methods for statistical analysis of qualitative features. | 2 | 1 |
| **6** | Methods for statistical analysis of quantitative features. | 2 | 1 |
| **7** | Basic techniques for assessing differences between two and comparing multiple groups. | 1 | 1 |
| **8** | Inference statistics: testing hypotheses. | 1 |  |
| **9** | Statistical methods for studying a relationship between variables. Correlation analysis. | 2 | 1 |
| **10** | Statistical indicators in biomedical research. | 3 | 1 |
|  | Total | **15** | **10** |

**3. Tests for Evidence-based medicine module**

|  |  |  |  |
| --- | --- | --- | --- |
| **N** | **Items** | **А** | **В** |
| **1** | Principles and methods of evidence-based medicine | 3 | 2 |
| **2** | Search for scientific information in an electronic database (search operators and index of medical subject headings). | 3 | 1 |
| **3** | Bibliographic search system for medical information - PubMed. | 3 | 1 |
| **4** | Epidemiological study design: descriptive, analytical, experimental, randomized and non-randomized studies. | 3 | 1 |
| **5** | Evidence-based research pyramid. Evidence levels. | 3 | 1 |
| **6** | Systematic review and meta - analysis. | 3 | 1 |
| **7** | Assessment of clinical guidelines. | 3 | 1 |
| **8** | Basic ethical principles of biomedical research. | 2 | 1 |
| **9** | Ethical aspects of preclinical and clinical research | 2 | 1 |
|  | Max.scores 25 | 25 | 10 |

1. **Stage. Case study case on Epidemiology**

**1.** Clinical scenario of infectious diseases. Setting a standard case definition: suspected, probable and confirmed

|  |  |  |
| --- | --- | --- |
| **N** | **Step assessment criteria** | **Scores** |
| **1** | The presence of complaints characteristic of diseases. | 5 | 3 | 1 |
| **2** | The presence of objective signs of the disease, revealed during an objective examination of a patient (examination, palpation, percussion, auscultation). | 5 | 3 | 1 |
| **3** | Evaluation of events of patient’s history of the disease and life and description his disease in time, in place and personal characteristics. | 5 | 3 | 1 |
| **4** | Expected reason and risk factors related with the disease.  | 5 |  |  |
| **5** | Laboratory and instrumental features supported the disease. | 5 | 3 | 1 |
|  | Max. scores 25 | **25** | **15** | **5** |

**2. Clinical situation associated with an infectious disease. Establishing an epidemiological diagnosis of an infectious disease according to the epidemiological classification: group by reservoir, by pathogen and localization of the process.**

|  |  |  |
| --- | --- | --- |
| **N** | **Step assessment criteria** | **Scores** |
| **1** | Group of diseases by reservoir of infection | **6** | **4** | **1** |
| **2** | Group of diseases by causative agent | **6** | **4** | **1** |
| **3** | Group of diseases according to the assessment of process localization | **6** | **4** | **1** |
| **4** | Diagnosis | **7** | **3** | **2** |
|  | Max.scores 25 | **25** | **15** | **5** |

**3. Investigation of unknown disease**

|  |  |  |
| --- | --- | --- |
| **N** | **Step assessment criteria** | **Scores** |
| **1** | Determine a presence of an outbreak. | **4** | **3** | **1** |
| **2** | Development of a preliminary standard case definition. Counting suspected, probable and confirmed case. | **4** | **3** | **1** |
| **3** | List the categories of diseases with which you need to carry out differential diagnosis of this disease | **4** | **3** | **1** |
| **4** | Analyze the clinical and epidemiological data to identify the causative agent as a cause of the disease. | **4** | **2** | **1** |
| **5** | Calculate the incidence rate and determine a relationship with a cause of the disease. | **4** | **2** | **1** |
| **6** | Plan anti-epidemic and preventive measures. | **5** | **2** | **0** |
|  | Max.scores is 25 | **25** | **15** | **5** |

**2 stage. Case study on Biostatistics module**

**Task. The number of sick children aged 0-5 years of residents of the K. region for the period from 2002-2010 is given.** According to the data from the table, it is necessary to calculate:

1. Mean

2. Standard deviation

3. Standard deviation error

4. Confidence interval

4. Mode and median

6. Incidence rate.

7. Present the incidence of infectious and parasitic diseases in children in the period from 2002 to 2010 in the form of a graph.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Infectious and parasitic diseases (abc. numbers)  | 3463 | 2932 | 3123 | 3950 | 4281 | 4058 | 3770 | 4263 | 3970 |
| Incidence rate per 100 000 children population |  |  |  |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **N** | **Step assessment criteria** | **Баллы** |
| **1** | Calculation the mean | 3 | 2 | 1 |
| **2** | Calculation the standard deviation | 3 | 2 | 1 |
| **3** | Calculation the standard deviation error | 3 | 2 | 1 |
| **4** | Calculation the confidence interval | 4 | 2 | 1 |
| **5** | Calculation mode and median | 4 | 2 | 1 |
| **6** | Calculation the Incidence rate since 2002 to 2010 years. | 4 | 2 | 0 |
| **7** | Plotting the dynamics of the incidence rate | 4 | 3 | 0 |
|  | **Итого: Макс. балл 25** | **25** | **15** | **5** |

**Second stage. Case study on Evidence-based medicine**

**Case study stages:**

1. Clinical scenario
2. Complete the task step by step
3. Write the conclusion.

**Table of steps and assessment criteria**

|  |  |  |  |
| --- | --- | --- | --- |
| **N** | **Sections of the case assignment** | **Content due to stages** | **Scores** |
| 1 | Clinical scenario or problem | Describe a clinical scenario with a literal definition of who and what is P, I, C, O, T | 1 | 1 | 1 |
| 2 | Prerequisites or background information | Write prerequisites or background | 1 | 1 | 1 |
| 3 | Analysis of situation using PICOT framework | Analyze the situation according to PICOT framework (table 1 from the appendix) | 1 | 1 | 1 |
| 4 | Clinical question or research question | Formulate a clinical question or research question | 1 | 1 | 1 |
| 5 | Search strategy | Define your search strategy using and, or, or Mesh or key words. Write key words.:  | 1 | 1 | 0 |
| 6 | Search sites | Write a list of used electronic resources. | 1 | 1 | 2 |
| 7 | Search | Search and provide the search results in the form of a table (Table 2 from the appendix) | 1 | 1 | 0 |
| 8 | Selected publications | Provide the selected publications in the end, satisfying the search, in the form of a list with the title, authors. Copy the text. | 1 | 1 | 0 |
| 9 | Give answers according to the CASP questionnaire for different types of research (Table 3 or 4 from theappendix). | Evaluation of selected publications: quality of methodology, type of epidemiological study, design, sample, fit for control group, completeness of data, measures of statistical analysis, clinical and statistical significance of outcomes. | 14 | 5 | 0 |
| 10 | Conclusion | Answer to the clinical or research question as a conclusion. | 3 | 2 | 0 |
|  | Max.scores is 25 | 25 | 15 | 0-5 |