

**COMPREHENSIVE EXAM PROGRAM**  
**FOR MODULE**  
**PATHOLOGY OF ORGANS AND SYSTEMS-1**  
**Respiratory system pathology**  
**Pathology of the Cardiovascular System and Blood**  
**Digestive system pathology**  
**Pathology of the Urinary System**  
**Kazakh / Russian language in use medicine**  
**English in use Medicine**  
3d Grade  
GENERAL MEDECINE

**The purpose of the program** is to assess the complex of knowledge, skills and abilities acquired by the 3rd year student while training in the module.

The exam is complex and consists of 2 stages.

**Stage 1** - comprehensive testing. Its purpose is to check the level of theoretical training of students, mastery of skills, readiness for professional activity, the degree of development of professional thinking.

**Stage 2** - assessment of practical skills with OSCE method (objective structured clinical examination) with a standardized patient. Its purpose is to demonstrate practical and communication skills in accordance with the qualification requirements of the specialty.

**The final exam score for each discipline consists of:**

- 40% of the complex testing stage (stage 1)

- 60% of the OSCE stage (stage 2)

Assessment in the disciplines "Kazakh/Russian professional language in medicine" and - "English professional language in medicine" consists of the overall score for the complex test (stage 1) and the average overall score for the stations of "History taking" at the OSCE stage (stage 2).

MCQ test mark + "History taking" overall mark

40 % of MCQ test mark + 60 % of "History taking" overall mark

## Exam MCQ Test Matrix

|  | Discipline section<br>Topics                                   | Propae<br>deutics<br>(Physic<br>al exami<br>nation) | Patoph<br>ysiolog<br>y | Clinical<br>chemist<br>ry – lab<br>diagnos<br>tics | Imaging<br>diagnosti<br>cs | Patho<br>morph<br>ology<br>(biops<br>y and<br>autops<br>y findin<br>gs) | Pharm<br>acolo<br>gy<br>(Treat<br>ment) |    | Total<br>numb<br>er of<br>questi<br>ons<br>for<br>discip<br>line |
|--|--|---|------------------------|--|----------------------------|---|---|----|--|
| <b>Pathology of respiratory system</b>     |  |   |                        |  |                            |   |   |    |  |
| 1  | Syndrome of lung infiltration                                  | 4   | 2                      | 2  | 4                          | 4   | 8                                       | 24 | <b>100</b>   |
|  | Lung infiltration syndrome, disseminated lung diseases, cancer | 1   | 1                      | 2  | 4                          | 2   | 4                                       | 14 |  |
| 2  | Syndrome of cavity in the lungs                                | 0   | 2                      | 2  | 2                          | 2   | 2                                       | 10 |  |
| 3  | Syndrome of pleural effusion                                   | 0   | 2                      | 2  | 2                          | 2   | 2                                       | 10 |  |
| 4  | Syndrome of bronchial obstruction                              | 0   | 2                      | 2  | 2                          | 2   | 8                                       | 16 |  |
| 5  | Acute respiratory failure                                      | 2   | 1                      | 1  | 1                          | 1   | 2                                       | 8  |  |
| 6  | Chronic respiratory failure                                    | 2   | 1                      | 2  | 2                          | 2   | 3                                       | 12 |  |
| 7  | Syndrome of lung emphysema.                                    | 1   | 1                      | 1  | 1                          | 1   | 1                                       | 6  |  |
| <b>Pathology of cardio-vascular system</b> |  |   |                        |  |                            |   |   |    |  |
| 8  | Hypertension   | 5   | 4                      | 3  | 3                          | 4   | 10                                      | 29 | <b>120</b>   |
| 9  | Syndrome of valvular diseases                                  | 5   | 4                      | 3  | 5                          | 4   | 7                                       | 28 |  |
| 10   | ACS MI   | 2   | 2                      | 2  | 6                          | 3   | 7                                       | 22 |  |
| 11   | Acute heart failure  | 2   | 1                      |  |                            | 2   | 3                                       | 8  |  |
| 12   | Chronic heart failure  | 4   | 2                      | 2  | 2                          | 2   | 6                                       | 18 |  |
| 13   | Rhythm disturbances - extrasystole, paroxysmal tachycardia     | 2   | 3                      |  | 6                          |   | 4                                       | 15 |  |
| <b>Pathology of blood</b>                  |  |   |                        |  |                            |   |   |    |  |
| 14   | Syndrome of anaemia  | 0   | 2                      | 4  |                            | 1   | 4                                       | 11 | <b>55</b>  |
| 15   | Syndrome of sideropenia  | 0   | 1                      | 2  |                            | 2   | 4                                       | 9  |  |
| 16   | Syndrome of cytopenia  | 1   | 2                      | 4  |                            | 1   | 2                                       | 10 |  |

|  |  |           |           |           |           |           |           |            |            |
|--|--|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
| 17   | Syndrome of plethora   | 1         |           | 2         |           | 1         | 2         | 6          |            |
| 18   | Syndrome of lympho and myelo proliferation                             | 1         |           | 4         |           | 1         | 4         | 10         |            |
| 19   | Syndrome of haemorrhage  | 1         |           | 4         |           | 1         | 3         | 9          |            |
| <b>Pathology of digestive system and liver</b> |  |           |           |           |           |           |           |            |            |
| 20   | Dysphagia  | 0         | 1         |           | 2         | 3         | 4         | 10         |            |
| 21   | Gastric dyspepsia  | 0         | 2         | 4         | 2         | 4         | 4         | 16         |            |
| 22   | Pancreas: pain in pancreas pathology and extra secretory insufficiency | 0         | 2         | 4         | 1         | 2         | 5         | 14         | <b>120</b> |
| 23   | Intestinal dyspepsia   | 0         | 2         | 2         | 2         | 3         | 4         | 13         |            |
| 24   | Syndrome of cytolysis  | 0         | 2         | 4         | 1         | 3         | 6         | 16         |            |
| 25   | Cholestatic syndrome   | 0         | 2         | 2         | 2         | 2         | 4         | 12         |            |
| 26   | Portal hypertension  | 0         | 2         | 4         | 4         | 4         | 6         | 20         |            |
| 27   | Cirrhosis and its complications  | 0         | 3         | 4         | 4         | 2         | 6         | 19         |            |
| <b>Pathology of urinary system</b>             |  |           |           |           |           |           |           |            |            |
| 28   | Pain in pathology of urinary system                                    | 0         | 1         |           | 2         |           | 2         | 5          | <b>70</b>  |
| 29   | Syndrome of urinary system pathology (changes in urinalysis)           | 0         | 2         | 1         |           | 1         |           | 4          |            |
| 30   | Nephritic syndrome   | 0         | 2         | 2         |           | 3         | 4         | 11         |            |
| 31   | Nephrotic syndrome   | 0         | 2         | 2         |           | 3         | 4         | 11         |            |
| 32   | Acute kidney failure (AKI)   | 0         | 3         | 2         |           | 2         | 4         | 11         |            |
| 33   | Chronic kidney failure (CKD)   | 1         | 3         | 2         |           | 4         | 4         | 14         |            |
| 34   | Homeostasis  | 0         | 1         | 2         |           | 1         | 2         | 6          |            |
| 35   | Male reproductive sytem  | 2         | 2         |           |           | 2         | 2         | 8          |            |
|  |  | <b>87</b> | <b>65</b> | <b>79</b> | <b>60</b> | <b>77</b> | <b>97</b> | <b>465</b> | <b>465</b> |

## Stage 2

|  | <b>Station</b>  | <b>Topic of case</b>  |
|--|---|---|
| <b>Pathology of respiratory system</b>         | <ol style="list-style-type: none"> <li>1. History taking from a patient with respiratory pathology (standardized patient)</li> <li>2. Physical examination of a patient with respiratory pathology (hybrid - standardized patient + simulator)</li> <li>3. Interpretation of laboratory and visualizing diagnostic changes in pathology of the respiratory system</li> </ol>  | <ol style="list-style-type: none"> <li>1. Community acquired pneumonia – syndrome of lung infiltration-typical pneumonia</li> <li>2. Community acquired pneumonia – atypical pneumonia</li> <li>3. Bronchial asthma</li> <li>4. COPD –chronic respiratory failure and emphysema</li> <li>5. Influenza - bronchitis</li> </ol> |
| <b>Pathology of cardio-vascular system</b>     | <ol style="list-style-type: none"> <li>4. History taking from a patient with cardio-vascular pathology (standardized patient)</li> <li>5. Physical examination of a patient with cardio-vascular pathology (hybrid - standardized patient + simulator)</li> <li>6. Interpretation of laboratory and visualizing diagnostic changes in pathology of the cardio-vascular system</li> <li>7. First aid for emergency – ACS, hypertensive crisis</li> </ol> | <ol style="list-style-type: none"> <li>6. Mitral valve stenosis</li> <li>7. Aortic valve regurgitation</li> <li>8. Hypertension</li> <li>9. Chronic heart failure</li> </ol> <p>ACS, hypertensive crisis</p>  |
| <b>Pathology of blood</b>                      | <ol style="list-style-type: none"> <li>8. History taking from a patient with blood pathology (standardized patient)</li> <li>9. Interpretation of laboratory and visualizing diagnostic changes in pathology of the blood system</li> </ol>   | <ol style="list-style-type: none"> <li>10. IDA – syndrome of anaemia and sideropenia</li> <li>11. Immune thrombocytopenia – syndrome of haemorrhagia</li> </ol>   |
| <b>Pathology of digestive system and liver</b> | <ol style="list-style-type: none"> <li>10. History taking from a patient with pathology of digestive system and liver (standardized patient)</li> <li>11. Physical examination of a patient with pathology of digestive system and liver (hybrid - standardized patient + simulator)</li> <li>12. Interpretation of laboratory and visualizing diagnostic changes in the pathology of digestive system and liver</li> </ol>                             | <ol style="list-style-type: none"> <li>12. H.pylori associated gastritis and ulcer</li> <li>13. GERD</li> <li>14. Chronic pancreatitis</li> <li>15. Chronic hepatitis C</li> <li>16. Duodenal ulcer</li> <li>17. Dysentery</li> <li>18. Liver cirrhosis – moderate progressive – sub compensative form</li> </ol>             |
| <b>Pathology of urinary system</b>             | <ol style="list-style-type: none"> <li>13. History taking from a patient with pathology of urine system (standardized patient)</li> <li>14. Interpretation of laboratory and visualizing diagnostic changes in pathology of the urinary system</li> </ol>   | <ol style="list-style-type: none"> <li>19. Acute poststreptococcal glomerulonephritis – nephritic syndrome</li> <li>20. Nephrotic syndrome</li> <li>21. Chronic kidney failure (CKD)</li> </ol>   |

## Route of Exam

### **Stage 1 – computer testing in Startexam system.**

Each student will be asked to answer 150 test questions. The time for each question is 2 minutes.

Testing will be carried out in 3 runs of 50 tests according to the schedule for each group.

### **Stage 2 - OSCE (Objective Structured Clinical Exam) at the simulation center - 14 stations**

Each student must go through 14 stations, each station takes 5-7 minutes.

Task at each station based on clinical cases (according to the matrix above)

**Stations 1, 4, 8, 10, 13 - "History taking"** - are additionally included in the assessment in the disciplines "Kazakh / Russian professional language in medicine" and - "English professional language in medicine" as the 2nd stage of the exam in these disciplines.

Station " History taking " - students must demonstrate the skills of collecting anamnesis and effective communication with the patient or his relatives, managing the process of conversation with a patient, interpreting the data obtained, identifying the leading syndrome. The role of the patient is played by an actor - a standardized patient (volunteer).

**Station "Physical examination"** - students must demonstrate the skills of physical examination (general inspection, palpation, percussion and auscultation) with a certain pathology (according to the matrix above). General inspection, palpation, percussion skills should be demonstrated on volunteer Auscultation skills should be demonstrated on a simulator. In the end student must identify and interpret (explain) finds.

**Station "Interpretation of laboratory and visualizing diagnostic changes"** - students must demonstrate the skills of interpreting the results of laboratory and visualizing images (CBC, Serum studies – biochemical tests, ABG and electrolytes, immunology tests (ELISA), pleural fluid analysis, X ray, CT, MRI, spirograph, ECG, echocardiography, sonography, endoscopy, biopsy, smear and etc.) At this station, students will be provided with forms with test results, X-ray pictures. sonography, ECG films, etc. The student must comment on the revealed violations and formulate a conclusion.

The set of tasks at each station is unique for each student and is not repeated

