



MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION  
Federal state autonomous educational institution  
of higher education  
«Far Eastern Federal University»  
(FEFU)

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**SCHOOL OF BIOMEDICINE**

«AGREED»

Head of education program  
«General medicine»

  
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(signature) Khotimchenko Yu.S.  
(Full name)  
«09» of July 2019

«APPROVED»

Director of the Department of Clinical  
Medicine



  
\_\_\_\_\_  
(signature) Geltser B.I.  
(Full name)  
«09» of July 2019

**WORKING PROGRAM OF ACADEMIC DISCIPLINE (WPAD)**

«Neurology, Medical genetics»

Education program

Specialty 31.05.01 «General medicine»

**Form of study: full time**

year 4,5, semester 8,9  
lectures 36 hours  
practical classes 108 hours  
laboratory works not provided  
total amount of in-classroom works 144 hours  
independent self-work 72 hours  
including preparation to exam 27 hours  
control works ()  
pass-fail exam year 4, semester 8  
exam year 5, semester 9

The working program is drawn up in accordance with the requirements of the Federal state educational standard of higher education (level of training), approved by the order of the Ministry of education and science of the Russian Federation from 09.02.2016 № 95.

The working program of the discipline was discussed at the meeting of the Department of fundamental and clinical medicine. Protocol No. 8, 09 of July 2019

Author: d.m.sc., professor Ovchinnikova A.A.

## ANNOTATON

Discipline "Neurology, Medical genetics" is purposed for the students enrolled in the educational program 31.05.01 "General medicine" and included into the basic part of the curriculum. Discipline is implemented in the 4, 5th year, 8,9 semesters. The total complexity of the discipline is 216 hours, 6 credits.

Development of the working program of the discipline was made in accordance with the Federal state educational standard of higher education (the level of training of highly qualified personnel) in the specialty 31.05.01 "General medicine" and the curriculum of training students in the profile "General medicine".

The course program is based on the basic knowledge gained by students:

- readiness to solve standard tasks of professional activity with the use of bibliographic resources, medical and biological terminology, information and communication technologies, taking into account the basic requirements of information security (GPC-1);

- ability and willingness to implement ethical and deontological principles in professional activity (GPC-4);

- ability to assess morphofunctional, physiological States and pathological processes in the human body to solve professional problems (GPC-9);

**Purpose of the study:** development of the discipline "Neurology, Medical genetics" consists in the study of the main diseases of the nervous system, the acquisition of skills in building classifications, in mastering the methodology of examination of patients with pathology of the nervous system with the interpretation of laboratory and instrumental methods of examination of the structures of the nervous system, in the development of the principles of neurological diagnosis (syndrome, topical, etiological) for the formation of clinical thinking of the future doctor.

**The objectives are:**

- Getting knowledge of etiology, epidemiology, pathogenesis and risk factors of nervous diseases by students;

- training students the most important methods of objective examination, allowing timely diagnosis of damage to the nervous system;
  - training students to recognize clinical signs of neurological pathology during the examination of the patient, in determining the severity of the pathological process;
  - training students the ability to identify the leading syndromes of nervous diseases;
  - training students the choice of optimal methods of laboratory and instrumental examination in major neurological diseases and the preparation of differential diagnosis algorithm;
  - training to conduct a full range of medical, rehabilitation and preventive measures among patients with various nosological forms of neurological diseases;
  - training students to provide patients with first aid in case of emergency conditions;
  - training students to choose the optimal schemes of etiological and pathogenic treatment of the most common nervous system;
  - familiarization of students with the principles of organization and operation of medical institutions that provide assistance to patients with neurological pathology;
  - formation of skills in the study of scientific literature and official statistical reviews;
  - formation of communication skills with neurological patients and their representatives, taking into account ethics and deontology, depending on the identified pathology and characteristics of patients;
  - formation of the student's communication skills with the team.
2. As a result of the discipline studying students are to form the following professional competencies.

Requirements for the results of the discipline studying:

<b>Code and formulation of competence</b>	<b>Stages of competence formation</b>	
the readiness for medical use of drugs and other medical substances and their combinations in solving professional problems (GPC – 8)	Knows	Principles of etiological, pathogenetic, symptomatic treatment of major diseases of the CNS and peripheral nervous system.
	Able to	Assign pathogenetic therapy taking into account the etiology of the disease with the use of drug therapy in patients in need of medical rehabilitation.
	Masters	Methods of providing medical care
the readiness to collect and to analyze patient complaints, data of its history, the results of laboratory, instrumental, postmortem and other examinations to recognize the incidence or the absence of diseases (PC – 5)	Knows	1. Maintenance of standard accounting and reporting medical documentation in medical organizations 2. Basics of preventive medicine, organization of preventive measures aimed at improving the health of the population
	Able to	1. Plan, analyze and evaluate the quality of medical care, the health status of the population and the impact of environmental and industrial factors on it 2. To assess the social factors affecting the physical and psychological health of the patient: cultural, ethnic, religious, individual, family, social risk factors; to make a preliminary diagnosis-to synthesize information about the patient in order to determine the pathology and the causes of its causes; 3. Outline the scope of additional studies in accordance with the prognosis of the disease, to clarify the diagnosis and obtain reliable results
	Masters	1. Proper management of medical records 2. Methods of General clinical examination
the ability of determining the patient's basic pathological conditions, symptoms, syndromes, diseases in accordance with the International Statistical Classification of Diseases and problems related to health, the 10 <sup>th</sup> review. (PC – 6)	Knows	Principles of etiological, pathogenic, symptomatic treatment of major diseases of the CNS and peripheral nervous system. Providing emergency and emergency care, indications and contraindications for the appointment of therapeutic measures, evaluation of the results of treatment
	Able to	Assign pathogenic therapy based on the etiology of the disease
	Masters	Methods of providing medical care
the ability to determining the tactics of patient surveillance with different nosological entities. (PC – 8)	Knows	Principles of etiological, pathogenic, symptomatic treatment of major diseases of the CNS and peripheral nervous system. Providing emergency and emergency care, indications and contraindications for the appointment of therapeutic measures, evaluation of the results of treatment
	Able to	Assign pathogenic therapy based on the etiology of the disease

	Masters	Methods of providing medical care
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## **THE STRUCTURE AND CONTENT OF THE THEORETICAL PART OF THE COURSE (36 hours)**

### **Theme 1. Introduction to neurology. (4 hours).**

The theme contents:

Unconditional reflexes in normal condition and in a pathology. Sensitive sphere. Anatomy, physiology, symptoms of lesions. Motor spheres, including cerebellar and extrapyramidal systems. Anatomy, physiology, symptoms of lesions.

### **Theme 2. Cranial nerves. Cortex. Vegetative nervous system. (4 hours)**

The theme content:

Cranial nerves: 1-12 pairs. Anatomy, physiology, symptoms of lesions. Cortex. Vegetative nervous system. Anatomy, physiology, symptoms of lesions. Hypertensive and meningeal syndromes.

### **Theme 3. Voluntary movements and their disorders. Sensitivity and its disorders. Cerebellum. Coordination of movements and its disorders (4 hours).**

The theme contents:

Determination of paresis and paralysis. Characteristics of central and peripheral paresis. Surface and deep sensitivity. Pathways. The main functions of the cerebellum.

### **Theme 4. Symptoms and syndromes of the brain stem and cranial nerve impairment. Alternative syndromes (4 hours).**

The theme contents:

The main functions and symptoms of cranial nerve damage. Syndromes of brain stem damage at different levels, alternating syndromes.

### **Theme 5. Neurostomatologic syndromes of cranial nerves (4 hours).**

The theme contents:

Etiopathogenesis, clinical neuralgia of the trigeminal nerve, neuropathy of the facial nerve, the glossopharyngeal nerve. Symptoms, diagnostics and treatment of the syndrome of the knee knot, Charlin's syndrome, Frey's syndrome, Feil's syndrome, dental plexalgia, postherpetic neuralgia, etc.

**Theme 6. Infectious diseases of the nervous system. (4 hours).**

The theme contents:

Symptoms, diagnostics and treatment of encephalitis. Symptoms, diagnostics and treatment of meningitis

**Theme 7. Brain tumors (4 hours)**

The theme contents:

Etiology, pathogenesis, classification of brain tumors Supratentorial and subtentorial tumors: Symptoms, diagnostics, treatment

**Theme 8. Epilepsy. Diseases of the ANS. Neuroses. (2 hours)**

The theme contents:

Etiology, pathogenesis, classification. Symptoms, diagnostics and treatment

**Theme 9. Traumatic brain injury. (4 hours)**

The theme contents:

Classification of the closed traumatic brain injury. Symptoms of concussion, contusion and compression of the brain. Intracranial traumatic hematomas. Medical tactics. The consequences of traumatic brain injury — early and long-term ones. Diagnosis of TBI: craniography, CT, MRI of the brain.

**I. THE STRUCTURE AND CONTENT OF THE PRACTICAL PART OF THE COURSE (108 hours)**

**Theme 1. Voluntary movements and their disorders. Sensitivity and its disorders. Cerebellum. Coordination of movements and its disorders (12 hours).**

Theme contents:

Pyramid pathway: the length of central and peripheral motor neurons.

2. Signs of damage of the central and peripheral motor neurons.
3. Conductors of sensitive disorders.
4. The main functions of cerebellum. Symptoms and syndromes of the cerebellum impairment.

**Theme 2. Symptoms and syndromes of brain stem and cranial nerve damage (1-6 pairs). Alternative syndromes (12 hours)**

Theme contents:

Main functions of the brain stem and 1-6 pairs of cranial nerves. Symptoms and methods of investigation of the 1-6 cranial nerve pairs.

**Theme 3. Symptoms and syndromes of brain stem and cranial nerve damage (7-12 pairs). Alternative syndromes (12 hours).**

Theme contents:

Main functions of the brain stem and 7-12 pairs of cranial nerves. Symptoms and methods of investigation of the 7-12 cranial nerve pairs.

**Theme 4. Higher brain functions and their disorders. Syndromes of the certain parts of brain lesions (12 hours).**

Theme contents:

Localization of functions in the cerebral cortex. Disorders of higher brain functions: aphasia, apraxia, astereognosis, auto-diagnosis, agnosia, etc. Syndromes of individual lesions.

**Theme 5. Neurostomatologic syndromes of cranial nerves (12 hours).**

Theme contents:

Etiopathogenesis, clinical neuralgia of the trigeminal nerve, neuropathy of the facial nerve, the glossopharyngeal nerve. Symptoms, diagnostics and treatment of the syndrome of the knee knot, Charlin's syndrome, Frey's syndrome, Feil's syndrome, dental plexalgia, postherpetic neuralgia, etc.

**Theme 6. Neurostomatologic syndromes of lesions of the facial autonomic ganglia (12 hours).**

Theme contents:

Etiopathogenesis, clinical syndromes: winged node, ciliary node, ear node, submandibular and sublingual nodes. Clinic of glossalgia, glossodynia, Sjogren's syndrome, Merkelson-Rosenthal's syndrome, etc. Diagnostics, treatment. Migraine.

#### **Theme 7. Infectious diseases of the nervous system (12hours)**

Theme contents:

Features of symptoms, diagnostics and treatment of encephalitis and meningitis. Symptoms, diagnostics and medical tactics in brain abscess, spinal epidural abscess. Impairments of the nervous system in AIDS, botulism, polio.

#### **Theme 8. Paroxysmal disorders of consciousness, epilepsy, and neurogenic syncope. (12 hours)**

Theme contents:

Symptoms, diagnostics and treatment of epilepsy, status epilepticus, emergency care. Symptoms, diagnostics, treatment of neurogenic fainting.

#### **Theme 9. Brain tumor. Traumatic brain injury (12 hours)**

Theme contents:

Etiopathogenesis, classification and clinical features of supratentorial and subtentorial brain tumors. The signs of the large hemisphere tumors in brain, extracerebral, intracerebral and intraventricular. Classification, symptoms, treatment of open and closed craniocerebral trauma.

### **III. TRAINING AND METHODOLOGICAL SUPPORT INDEPENDENT WORK OF STUDENTS**

Educational and methodological support of independent self-work of students in the discipline "Neurology" is presented in Appendix 1 and includes:

- characteristics of tasks for independent self-work of students and guidelines for their implementation;
- requirements for the presentation and execution of the results of independent work;



- criteria for evaluating the performance of independent work.

#### IV. MONITORING THE ACHIEVEMENT OF THE COURSE OBJECTIVES

No.	Controlled modules / sections / topics of the discipline	Codes and stages of competence formation	Evaluation tool - name		
			Current control		intermediate certification
	Sections: 1. General neurology (topical diagnostics) 2. Diseases of the peripheral and autonomic nervous system 3. Vascular diseases of the nervous system. 4. Infectious diseases of the nervous system. 5. Nervous system injuries. 6. Tumors	- the readiness for medical use of drugs and other medical substances and their combinations in solving professional problems (GPC – 8)	<b>To know</b>	OQ-1 Interview	Exam questions 1-25
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium
	Section 1. General neurology, topical diagnostics of the nervous system Section II Private neurology Section III Medical genetics	the readiness to collect and to analyze patient complaints, data of its history, the results of laboratory, instrumental, postmortem and other examinations to recognize the incidence or the absence of diseases (PC – 5)	<b>To know</b>	OQ-1 Interview	Exam questions 26-64
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium
	Section 1. General neurology, topical diagnostics of the nervous system Section II Private neurology Section III Medical genetics	the ability of determining the patient's basic pathological conditions, symptoms, syndromes, diseases in accordance with the International Statistical Classification of Diseases and problems related to health, the 10 <sup>th</sup> review. (PC – 6)	<b>To know</b>	OQ-1 Interview	Exam questions 64-100
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium

	Section 1. General neurology, topical diagnostics of the nervous system Section II Private neurology Section III Medical genetics	the ability to determining the tactics of patient surveillance with different nosological entities. (PC – 8)	<b>To know</b>	OQ-1 Interview	Exam questions 1-25
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium

*approximate types of evaluation tools: interview on situational tasks, written or computer testing, typical calculations, individual tasks, essay, etc.*

Control and methodological materials, as well as criteria and indicators necessary for the assessment of knowledge, skills and characterizing the stages of formation of competencies in the process of development of the educational program are presented in Appendix 2.

## V. A LIST OF TEXTBOOKS AND METHODOLOGICAL SUPPORT OF THE DISCIPLINE

### Main literature

1. Neurology / Springer International Publishing Switzerland 2016  
<https://link.springer.com/book/10.1007/978-3-319-29632-6#authorsandaffiliationsbook>
2. Neurologic Disease / Springer International Publishing Switzerland 2016  
<https://link.springer.com/book/10.1007/978-3-319-39581-4#authorsandaffiliationsbook>
3. Inherited Metabolic Diseases / Springer-Verlag Berlin Heidelberg 2017  
<https://link.springer.com/book/10.1007/978-3-662-49410-3#editorsandaffiliations>

### Additional literature

1. Narcolepsy / Springer International Publishing Switzerland 2016  
<https://link.springer.com/book/10.1007/978-3-319-23739-8#editorsandaffiliations>
2. Psychiatry and Neuroscience Update / Springer International Publishing AG 2017  
<https://link.springer.com/book/10.1007/978-3-319-53126-7#editorsandaffiliations>

### Legislative and regulatory documents:

1. "Constitution of the Russian Federation" (adopted by popular vote 12.12.1993) (as amended by the Laws of the Russian Federation on amendments to the Constitution of the Russian Federation).
2. The Federal law from 12.01.1995 N 5-FZ (as amended on 22.12.2014) "On veterans»
3. The Federal law of 23.02.1995 N 26-FZ"on natural medicinal resources, therapeutic areas and resorts".

4. Federal law of 8.01.1998 N 3-FZ "on narcotic drugs and psychotropic substances".
5. Federal law of 24.07.1998 N 124-FZ " on basic guarantees of the rights of the child in the Russian Federation»
6. Federal law of 30.03.1999 N 52-FZ "on sanitary and epidemiological welfare of the population".
7. Federal law of 18.06.2001 N 77-FZ "on preventing the spread of tuberculosis in the Russian Federation".
8. Federal law of 10.07.2001 N 87-FZ "on restriction of tobacco Smoking".
9. Federal law of 12.04.2010 N 61-FZ "on circulation of medicines".
10. The Federal law of the Russian Federation of 29.11.2010 N 326-FZ "about obligatory medical insurance in the Russian Federation".
11. The Federal law of 04.05.2011 N 99-FZ "about licensing of separate types of activity".
12. The Federal law of the Russian Federation of 21.11.2011 N 323-FZ "about bases of protection of health of citizens in the Russian Federation".
13. "The civil code of the Russian Federation (part one)" of 30.11.1994 N 51-FZ.
14. "The civil code of the Russian Federation (part two)" of 26.01.1996 N 14-FZ.
15. "The civil code of the Russian Federation (part three)" of 26.11.2001 N 146-FZ.
16. "Labor code of the Russian Federation" of 30.12.2001 N 197-FZ.
17. The law of the Russian Federation of 02.07.1992 N 3185-I "about psychiatric care and guarantees of the rights of citizens at its rendering".
18. The law of the Russian Federation of 22.12.1992 N 4180-I "about transplantation of bodies and (or) tissues of the person".
19. The decree of the President of the Russian Federation of 09.10.2007 N 1351 "about the approval of the concept of demographic policy of the Russian Federation for the period till 2025".

20. Order of the Ministry of health and social development of the Russian Federation of 29.07.2011 N 624n "about the statement of the order of issue of sheets of disability".

## LIST OF INFORMATION TECHNOLOGIES AND SOFTWARE

The location of the computer equipment on which the software is installed, the number of jobs	List of licensed software
Multimedia auditorium Vladivostok Russian island, Ayaks 10, building 25.1, RM. M723 Area of 80.3 m2 (Room for independent work)	Windows Seven enterprise SP3x64 Operating System Microsoft Office Professional Plus 2010 office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.); 7Zip 9.20 - free file archiver with a high degree of data compression; ABBYY FineReader 11 - a program for optical character recognition; Adobe Acrobat XI Pro 11.0.00 - software package for creating and viewing electronic publications in PDF; WinDjView 2.0.2 - a program for recognizing and viewing files with the same format DJV and DjVu.

In order to provide special conditions for the education of persons with disabilities all buildings are equipped with ramps, elevators, lifts, specialized places equipped with toilet rooms, information and navigation support signs.

### On-line resources

1. Federal state statistics service [Electronic resource] - access mode: free // <http://www.gks.ru/>
2. Ministry of health and social development [Electronic resource]. Health.- Document Bank / - access Mode: free // <http://www.minzdravsoc.ru>

## VI. GUIDELINES FOR DEVELOPMENT OF THE DISCIPLINE

The purpose of the practical classes is to consolidate the knowledge gained by students in lectures, modeling of practical situations as well as checking the effectiveness of independent self-work.

The practice lesson usually includes an oral questioning of students on the seminar. This reveals the degree of students' knowledge of the material of the lecture course, basic textbooks, knowledge of current problems and the current situation in the modern educational space. Next, the ability of students to apply their theoretical knowledge to solving a practical or problem is revealed.

Preparation for practical classes is advisable to start with a repetition of the material of lectures. It should be kept in mind that the lecture course is limited in time and does not allow the lecturer to consider in detail all aspects of the issue under study. Therefore, it is required to expand knowledge both theoretical and practical. At the same time, lectures give a good guide to the student to find additional materials, as they set a certain structure and logic of studying a particular issue.

In the course of independent self-work, the student must first study the material presented recommended by department and/or teacher of educational literature and monographs. The student should pay attention to the fact that the library list includes not only basic textbooks, but also more in-depth sources on each topic of the course. Consistent study of the subject allows students to form a stable theoretical base.

An important part of the preparation for practical class is the work of students with scientific articles that are published in specialized periodicals. They allow student to broaden their horizons and get an idea of current problems, possible ways to solve them and/or trends in the study area.

As a final step in preparing for the practical lesson, the student should be encouraged to review the results of research relevant to each topic.

### **MATERIAL AND TECHNICAL MAINTENANCE OF DISCIPLINE**

Neurology, medical genetics	Multimedia audience: AIO PC HP ProOne 400 G1 AiO 19.5" Intel Core i3-4130T 4GB DDR3-1600 SODIMM (1x4GB)500GB; Screen projection Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen 1920 x 1080; Flush interface with automatic retracting cables TLS TAM 201 Stan; Aversion CP355AF; lavalier Microphone system UHF band	690922, Primorsky Krai, Vladivostok, island Russian, the Saperny Peninsula, Ajax 10, RM. M 422
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	<p>Sennheiser EW 122 G3 composed of a wireless microphone and receiver; Codec of videoconferencing LifeSizeExpress 220 - Codeonly - Non-AES; Network camera Multipix MP-HD718; Two 47 " LCD panels, Full HD, LG M4716CCBA; audio commutation and sound amplification Subsystem; centralized uninterruptible power supply</p> <p>Accreditation and simulation center:  Neurological hammer (3 PCs.)  The ECG unit (1 PC.)  Blood pressure monitor (2 PCs)  EEG  Set with point electrodes for EEG registration in the system  10-20 "MCScap-26" (1 PC.)  Medical couch (2 PCs.)</p> <p>Vladivostok clinical hospital №2</p> <p>Medical center of FEFU</p>	<p>690922, Primorsky Krai, Vladivostok, island Russian, the Saperny Peninsula, the village of ayaks, 10, RM. M 510</p> <p>690049, Vladivostok, street Russian 55</p> <p>690922, Primorsky Krai, Vladivostok, island Russian, the Saperny Peninsula, the village of ayaks, 10</p>
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**SCHOOL OF BIOMEDICINE**

**TRAINING AND METHODOLOGICAL SUPPORT OF INDEPENDENT  
WORK OF STUDENTS**

«**Neurology, medical genetics**»

Specialty 31.05.01 «General medicine»

**Form of study: full time**

**Vladivostok**

**2016**



**Independent work includes:**

- 1) library or homework with educational literature and lecture notes,
- 2) preparation for practical exercises,
- 3) preparation for testing and control interview (offset)

The procedure for the performance of independent work by students is determined by the schedule for the performance of independent work on the discipline.

**Schedule of independent work on the discipline**

No.	Date / Deadline	Type of independent work	Estimated norms of time for execution (hour)	Form of control
<b>8 semester – 36 hours</b>				
1	1 week	Essay - 3	9 hours	OA-3-Report
2	2 week	Preparation and presentation of the topic essay - 3	9 hours	OA-3-Report
3	3 week	Preparation for pass-fail exam	18 hours	OA-1-Interview PW-1 - Test
<b>9 semester 36 hours</b>				
1	2-6 week	Essay	9 hours	OA-3-Report
2	7-16 неделя	Preparation and presentation of the course history of disease	27 hours	OA-3-Report

**Topics of presentations and essays:**

1. Differential diagnostics of comas.
2. Instrumental examinations of the nervous system
3. Rehabilitation of patients with acute circulation brain disorders
4. Sleeping and waking disorders
5. Differential diagnostics of back pain
6. Differential diagnostics of vertigo
7. Neurological manifestations of AIDS
8. Methods of medical genetics
9. Prevention of hereditary pathology

10. Trigeminal neuralgia and glossopharyngeal neuralgia. Postherpetic trigeminal neuropathy. Neuropathy of separate branches of the trigeminal nerve. Symptoms, diagnostics, treatment. Symptoms, diagnostics and treatment of dental plexalgia.
12. Myofascial pain syndrome of the face, dysfunction of the temporal - mandibular joint. Symptoms, diagnostics, treatment.
13. Neuroses. Somatoforming pain syndromes of face and head. Symptoms, diagnosis. Treatment.
14. Cephalalgia in different periods of human life. Migraine and periodic migrainous neuralgia, tension-type headache.

### **Approximate guidelines for writing and design of an essays**

Essay is a creative activity of the student reproducing in its structure the research activities to solve theoretical and applied problems in a particular branch of scientific knowledge. That is why the course certification work is an essential component of the educational process in higher education.

The essay is a model of scientific research, independent self-work in which a student solves a problem of a theoretical or practical nature, applying the scientific principles and methods of a given branch of scientific knowledge. The result of this scientific search may have not only subjective, but also objective scientific novelty, and therefore can be presented for discussion by the scientific community in the form of a scientific report or presentation at scientific-practical conferences, as well as in a form of research article.

Essay involves the acquisition of skills for building business cooperation, based on ethical standards of scientific activity. Purposefulness, initiative, disinterested cognitive interest, responsibility for the results of their actions, conscientiousness, competence - personality traits that characterize the subject of research activities corresponding to the ideals and norms of modern science.

The essay is an independent educational and research activity of the student. The teacher assists in a consultative manner and assesses the process and the results of the activity. Teacher provides an approximate topic of the essay work, specifies the problem and topic of research with a student or intern, helps to plan and organize research activities, assigns time and a minimum number of consultations.

The teacher receives the text of the essay for verification at least ten days before the defense.

Generally there is a certain structure of the essay, the main elements of which in order of their location are the following:

1. Title page.
2. Goal.
3. Table of Contents
4. List of abbreviations, symbols and terms (if necessary).
5. Introduction.
6. Main part.
7. Conclusion.
8. Reference list.
9. Appendixes.

The title page contains educational institution, graduating department, author, teacher or supervisor, research topic, place and year of the essay.

The title of the essay should be as short as possible and fully consistent with its content.

The table of contents (content) reflects the names of the structural parts of the essay and the pages on which they are located. The table of contents should be placed at the beginning of work on one page.

The presence of a detailed introduction - a mandatory requirement for the abstract. Despite the small volume of this structural part, its preparation causes considerable difficulties. However, this is a qualitatively executed introduction that

is the key to understanding the entire work, which testifies to the professionalism of the author.

Thus, the introduction is a very crucial part of the essay. The introduction should start with a justification of the relevance of the chosen topic. As applied to the essay, the concept of "relevance" has one feature. From how the author of the essay can choose a topic and how correctly he understands and evaluates this topic from the point of view of modernity and social significance, characterizes his scientific maturity and professional preparedness.

In addition, in the introduction it is necessary to isolate the methodological basis of the essay, name the authors, whose works constituted the theoretical basis of the study. A review of the literature on the topic should show the author's thorough acquaintance with special literature, his ability to systematize sources, critically examine them, highlight the essential and determine the most important in the up-to-date state of knowledge of the topic.

The introduction ends with a statement of the general conclusions about the scientific and practical significance of the topic, the degree of its knowledge and sources, and the hypothesis being put forward.

The main part describes the essence of the problem, reveals the topic, determines the author's position, factual material is given as an argument and for display of further provisions. The author must demonstrate the ability to consistently present the material while analyzing it simultaneously. Preference is given to the main facts, rather than small details.

The essay ends with the final part called "conclusion". Like any conclusion, this part of the essay serves as a conclusion due to the logic of the study which is a form of synthesis accumulated in the main part of scientific information. This synthesis is a consistent, coherent presentation of the results obtained and their relation to a common goal and specific tasks set and formulated in the introduction. At this place there is a so-called "output" knowledge, which is new in relation to the original knowledge. The conclusion may include suggestions of practical matter, thereby increasing the value of theoretical materials.

So, the conclusion of the essay should contain: a) presents the conclusions of the study; b) theoretical and practical significance, novelty of the essay; c) indicated the possibility of applying the results of the study.

After conclusion it is acceptable to place the reference list of the literature used throughout. This list is one of the essential parts of the essay and reflects the independent creative work of the author of the essay.

The list of sources used is placed at the end of the work. It is made either in alphabetical order (by the name of the author or the name of the book), or in the order in which the references appear in the text of the prepared work. In all cases, the full title of the work, the names of the authors or the editor of publication are indicated if the writing team involved a group of authors, data on the number of volumes, the name of the city and publisher in which the work was published, year of publication, number of pages.

### **Methodical recommendations for the presentation preparation**

For preparation of presentation it is recommended to use: PowerPoint, MS Word, Acrobat Reader, LaTeX-bev package. The simplest program for creation of presentations is Microsoft PowerPoint. To prepare a presentation, it is necessary to process the information collected while writing the essay.

The sequence of preparation of the presentation:

1. Clearly state the purpose of the presentation.
2. Determine what the presentation format will be: live presentation (then how long it will be) or e-mail (what will be the context of the presentation).
3. Select the entire content of the presentation and build a logical chain of presentation.
4. Identify key points in the content of the text and highlight them.
5. Determine the types of visualization (pictures) to display them on slides in accordance with the logic, purpose and specificity of the material.
6. Choose the design and format the slides (the number of pictures and text, their location, color and size).

## 7. Check the visual perception of the presentation.

The types of visualization include illustrations, images, charts, tables. The illustration is a representation of a real-life visual. The images - as opposed to illustrations - are metaphor. Their purpose is to cause an emotion and create an attitude towards it, to influence the audience. With the help of well-designed and presented images, information can remain permanently in a person's memory. Chart is visualization of quantitative and qualitative relationships. They are used for convincing data demonstration, for spatial thinking in addition to the logical one. Table is a specific, visual and accurate data display. Its main purpose is to structure information, which sometimes facilitates the perception of data by the audience.

### *Practical hints on preparing a presentation*

- printed text + slides + handouts are prepared separately;
- slides -visual presentation of information that should contain a minimum of text and maximum of images that bring a meaning, to look visually and simply;
- textual content of the presentation - oral speech or reading, which should include arguments, facts, evidence and emotions;
- recommended number of slides 17-22;
- mandatory information for the presentation: the subject, surname and initials of the speaker; message plan; brief conclusions from all that has been said; list of sources used;
- handouts should be provided with the same depth and coverage as the live performance: people trust more what they can carry with them than disappear images, words and slides are forgotten, and handouts remain a constant tangible reminder; handouts are important to distribute at the end of the presentation; Handouts should be different from slides, should be more informative.

### **Evaluation criteria for essays.**

The stated understanding of the essay as a holistic copyright text defines the criteria for its evaluation: the novelty of the text; the validity of the source choice; the degree of disclosure of the issue essence; compliance with the requirements for registration.

**Essay novelty:** a) the relevance of the research topic; b) novelty and independence in the problem formulation, formulation of a new aspect of the well-known problem in the establishment of new connections (interdisciplinary, intra-subject, integration); c) ability to work with research and critical literature, systematize and structure research material; d) the appearance of the author's position, independence of assessments and judgments; d) stylistic unity of the text, the unity of genre features.

**The degree of disclosure of the question essence:** a) the plan compliance with an essay; b) compliance with the content of topic and plan of an essay; c) completeness and depth of knowledge on the topic; d) the validity of the methods and techniques of work with the material; e) ability to generalize, draw conclusions, compare different points of view on one issue (problem).

**The validity of the source choice:** a) evaluation of the used literature: whether the most famous works on the research topic are involved (including recent journal publications, recent statistics, reports, references, etc.)

**Compliance with the requirements for registration:** a) How true are the references to the used literature, quotes; b) assessment of literacy and presentation culture (including spelling, punctuation, stylistic culture), knowledge of terminology; c) compliance with the requirements for the volume of essay.

**The reviewer should clearly state** the remarks and questions, preferably with references to the work (possible on specific pages of the work), to research and evidence that the author did not take into account.

**The reviewer may also indicate:** whether student has addressed the topic earlier (essays, written works, creative works, olympic works, etc.) and whether there are any preliminary results; how the graduate has conducted the work (plan,

intermediate stages, consultation, revision and processing of the written or lack of a clear plan, rejection of the head recommendations).

**The student submits** an essay for review no later than a week before the defense. The reviewer is the teacher. Experience shows that it is advisable to acquaint the student with the review a few days before the defense. Opponents are appointed by the teacher from the students. For an oral presentation a student needs about 10–20 minutes (approximately as long as he answers with tasks for the exam).

**Grade 5** is given if all the requirements for writing and defending an essay are fulfilled: the problem is indicated and its relevance is justified, a brief analysis of different points of view on the problem under consideration is made and one's own position is logically presented, conclusions are formulated, the topic is fully disclosed, the volume is met, external requirements are met design, given the correct answers to additional questions.

**Grade 4** is given if the basic requirements for the essay and its defense are met, but there are some shortcomings. In particular, there are inaccuracies in the presentation of the material; or there is no logical sequence in the judgments; not sufficient volume of the essay; there are omissions in the design; additional questions for the defense are accompanied with incomplete answers.

**Grade 3** is given if there are significant deviations from the requirements for referencing. In particular: the topic is covered only partially; factual errors in the content of an essay or when answering additional questions; there is no output c.

**Grade 2** - the topic of an essay is not disclosed, a significant misunderstanding of the problem is found.

**Grade 1** - student's essay is not presented.





MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION  
Federal state autonomous educational institution  
of higher education  
**« Far Eastern Federal University »**  
(FEFU)

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**SCHOOL OF BIOMEDICINE**

**ASSESSMENT FUND**  
**«Neurology»**  
Specialty 31.05.01 «General medicine»  
**Form of study: full time**

**Vladivostok**  
**2016**

## Passport FOS

Filled in in accordance with the Regulations on the funds of evaluation means of educational programs of higher education – undergraduate programs, specialty, master's degree FEFU, approved by order of the rector of 12.05.2015 №12-13-850. Questions for assessment of preliminary competencies

Code and formulation of competence	Stages of competence formation	
the readiness for medical use of drugs and other medical substances and their combinations in solving professional problems (GPC – 8)	Knows	Principles of etiological, pathogenetic, symptomatic treatment of major diseases of the CNS and peripheral nervous system.
	Able to	Assign pathogenetic therapy taking into account the etiology of the disease with the use of drug therapy in patients in need of medical rehabilitation.
	Masters	Methods of providing medical care
the readiness to collect and to analyze patient complaints, data of its history, the results of laboratory, instrumental, postmortem and other examinations to recognize the incidence or the absence of diseases (PC – 5)	Knows	<ol style="list-style-type: none"> <li>1. Maintenance of standard accounting and reporting     medical documentation in medical organizations</li> <li>2. Basics of preventive medicine, organization of preventive measures aimed at improving the health of the population</li> </ol>
	Able to	<ol style="list-style-type: none"> <li>1. Plan, analyze and evaluate the quality of medical care, the health status of the population and the impact of environmental and industrial factors on it</li> <li>2. To assess the social factors affecting the physical and psychological health of the patient: cultural, ethnic, religious, individual, family, social risk factors; to make a preliminary diagnosis-to synthesize information about the patient in order to determine the pathology and the causes of its causes;</li> <li>3. Outline the scope of additional studies in accordance with the prognosis of the disease, to clarify the diagnosis and obtain reliable results</li> </ol>
	Masters	<ol style="list-style-type: none"> <li>1. Proper management of medical records</li> <li>2. Methods of General clinical examination</li> </ol>
the ability of determining the patient's basic pathological conditions, symptoms, syndromes, diseases in accordance with the International Statistical Classification of Diseases and problems related to health, the 10 <sup>th</sup> review. (PC – 6)	Knows	Principles of etiological, pathogenic, symptomatic treatment of major diseases of the CNS and peripheral nervous system. Providing emergency and emergency care, indications and contraindications for the appointment of therapeutic measures, evaluation of the results of treatment
	Able to	Assign pathogenic therapy based on the etiology of the disease
	Masters	Methods of providing medical care

the ability to determining the tactics of patient surveillance with different nosological entities. (PC – 8)	Knows	Principles of etiological, pathogenic, symptomatic treatment of major diseases of the CNS and peripheral nervous system. Providing emergency and emergency care, indications and contraindications for the appointment of therapeutic measures, evaluation of the results of treatment
	Able to	Assign pathogenic therapy based on the etiology of the disease
	Masters	Methods of providing medical care

#### IV. MONITORING THE ACHIEVEMENT OF THE COURSE OBJECTIVES

No.	Controlled modules / sections / topics of the discipline	Codes and stages of competence formation	Evaluation tool - name		
			Current control		intermediate certification
	Sections: 1. General neurology (topical diagnostics) 2. Diseases of the peripheral and autonomic nervous system 3. Vascular diseases of the nervous system. 4. Infectious diseases of the nervous system. 5. Nervous system injuries. 6. Tumors	- the readiness for medical use of drugs and other medical substances and their combinations in solving professional problems (GPC – 8)	<b>To know</b>	OQ-1 Interview	Exam questions 1-25
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium
	Section 1. General neurology, topical diagnostics of the nervous system Section II Private neurology Section III Medical genetics	the readiness to collect and to analyze patient complaints, data of its history, the results of laboratory, instrumental, postmortem and other examinations to recognize the incidence or the absence of diseases (PC – 5)	<b>To know</b>	OQ-1 Interview	Exam questions 26-64
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium
	Section 1. General neurology, topical diagnostics of the nervous system Section II Private neurology Section III Medical genetics	the ability of determining the patient's basic pathological conditions, symptoms, syndromes, diseases in accordance with the International Statistical Classification	<b>To know</b>	OQ-1 Interview	Exam questions 64-100
			<b>Be able to</b>	PW-1 Test	PW-1 Test

		of Diseases and problems related to health, the 10 <sup>th</sup> review. (PC – 6)	<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium
	Section 1. General neurology, topical diagnostics of the nervous system Section II Private neurology Section III Medical genetics	the ability to determining the tactics of patient surveillance with different nosological entities. (PC – 8)	<b>To know</b>	OQ-1 Interview	Exam questions 1-25
			<b>Be able to</b>	PW-1 Test	PW-1 Test
			<b>To master</b>	OQ-3 Report Presentation	YO-2 Colloquium

### Scale of assessment of the level of competence formation

Code and formulation of competence	Stages of competence formation		criteria	indicators	points
GPC-8 readiness for medical use of drugs and other substances and their combinations in solving professional problems	knows (threshold)	classification and main diseases, characteristics of drugs, pharmacodynamics and pharmacokinetics, indications and contraindications to the use of drugs, side effects; clinical and pharmacological characteristics of the main groups of drugs and rational choice of specific drugs in the treatment of major pathological syndromes and diseases of emergency conditions	Knowledge of the basics of healthy lifestyle	Knows the basic hygienic measures of improving character promoting preservation and strengthening of health	65-71
	able to (advanced)	- prescribe medicines for certain diseases and pathological processes, based on the characteristics of their pharmacodynamics and pharmacokinetics; - justify the need for clinical and immunological examination of the patient, to analyze the effect of drugs on the totality of their pharmacological properties and the possibility of their use for therapeutic treatment	Ability to prescribe medicines for diseases of internal organs	Able to write prescriptions for drugs for diseases of the internal organs in accordance with the survey data, is able to analyze the effects of drugs	71-84
	masters (high)	appointment of medicines in the treatment of various diseases and pathological processes	Possession of the technique of clinical and immunological examination of	Owens the regulatory framework and technology of prescribing,	85-100

			the patient, the use of drugs, the analysis of their pharmacological properties and the possibility of their use for therapeutic treatment	prescribing drugs, evaluation of indicators of clinical and immunological examination of the patient, analysis of the action of drugs in the majority of their pharmacological properties and the possibility of their use for therapeutic treatment	
<b>PC 5</b> the readiness to collect and to analyze patient complaints, data of its history, the results of laboratory, instrumental, postmortem and other examinations to recognize the incidence or the absence of diseases	knows (threshold)	- etiology, pathogenesis, morphogenesis, disease pathomorphosis, principles of classification of diseases; basic concepts of general nosology of diseases of internal organs.	Knows the etiology, pathogenesis, morphogenesis, disease pathomorphosis, principles of classification of diseases; basic concepts of general nosology	Knows principles of classification of diseases; basic concepts of general nosology	65-71
	able to (advanced)	-to interpret the results of the examination, to make a preliminary diagnosis, to outline the scope of additional studies to clarify the diagnosis, to formulate a clinical diagnosis; to develop a treatment plan taking into account the course of the disease, to choose and prescribe drug therapy, to use non-drug treatment methods, to perform rehabilitation measures	ability to interpret the results of the examination, to make a preliminary diagnosis, to outline the scope of additional studies to clarify the diagnosis, to formulate a clinical diagnosis; to develop a treatment plan taking into account the course of the disease, to choose and prescribe drug therapy, to use non-drug treatment	able to formulate a clinical diagnosis; develop a treatment plan taking into account the course of the disease, choose and prescribe drug therapy, use non-drug treatment methods, carry out rehabilitation measures	71-84

			methods, to carry out rehabilitation measures		
	masters (high)	algorithm, preliminary diagnostics and then sending them for further examination by specialists; algorithm deployed setting clinical diagnosis.	algorithm for preliminary diagnosis with the following appointment for further examination by specialists; algorithm deployed for setting clinical diagnosis	masters the algorithm of examination and formulation of a detailed clinical diagnosis	85-100
<b>PC 6</b> ability to determine the patient's main pathological conditions, symptoms, syndromes of diseases, nosological forms in accordance with the international classification of diseases and health-related problems, X revision	knows (threshold)	- etiology, pathogenesis, morphogenesis, disease pathomorphosis, principles of classification of diseases; basic concepts of general nosology of diseases of internal organs.	Knows the etiology, pathogenesis, morphogenesis, disease pathomorphosis, principles of classification of diseases; basic concepts of general nosology	Knows the methods of treatment and indications for their use, contraindications to their appointment, especially their conduct	65-71
	able to (advanced)	- to interpret the results of the examination, to make a preliminary diagnosis, to outline the scope of additional studies to clarify the diagnosis, to formulate a clinical diagnosis; to develop a treatment plan taking into account the course of the disease, to choose and prescribe drug therapy, to use non-drug treatment methods, to execute rehabilitation measures	ability to interpret the results of the examination, to make a preliminary diagnosis, to outline the scope of additional studies to clarify the diagnosis, to formulate a clinical diagnosis; to develop a treatment plan taking into account the course of the	Able to	71-84

			disease, to choose and prescribe drug therapy, to use non-drug treatment methods, to carry out rehabilitation measures		
	masters (high)	algorithm, preliminary diagnosis and then sending them for further examination by specialists; algorithm deployed setting clinical diagnosis.	algorithm for preliminary diagnosis with the following appointment for further examination by specialists; algorithm deployed setting clinical diagnosis	knows the methods of therapeutic measures to establish a complete clinical diagnosis, first aid and medical care in emergency and life-threatening conditions, the appointment of etiotropic, pathogenetic therapy	85-100
<b>PC-8</b> the ability to determining the tactics of patient surveillance with different nosological entities.	knows (threshold)	- knows the algorithm of nosological and complete clinical diagnosis, - the main medical diagnostic and medical actions for rendering the first and medical care at urgent and life-threatening conditions in out-patient conditions and conditions of the day hospital.	knows the methods of nosological and complete clinical diagnosis, - the main medical diagnostic and medical actions for rendering the first and medical care at urgent and life-threatening conditions in out-patient conditions and conditions of the day hospital.	knows the technology of nosological and complete clinical diagnosis, - the main medical diagnostic and medical actions for rendering the first and medical care at urgent and life-threatening conditions in out-patient conditions and conditions of the day hospital.	65-71

	able to (advanced)	able to apply the methods of nosological and complete clinical diagnosis in diseases of internal organs, identify the main medical diagnostic and therapeutic measures to provide first aid and medical care in emergency and life-threatening conditions in an outpatient setting and day hospital	able to apply the methods of nosological and complete clinical diagnosis in diseases of internal organs, Identify the main medical diagnostic and therapeutic measures to provide first aid and medical care in emergency and life-threatening conditions in an outpatient setting and day hospital	Able to implement the technology of production nosological and clinical diagnosis in diseases of the internal organs, Identify the main medical diagnostic and therapeutic measures to provide first aid and medical care in emergency and life-threatening conditions in outpatient settings and conditions	71-84
	masters (high)	<ul style="list-style-type: none"> <li>- ability to interpret the results of the questioning,</li> <li>- make a preliminary diagnosis,</li> <li>- outline the scope of additional studies to clarify the diagnosis;</li> <li>- formulate a clinical diagnosis;</li> <li>- to develop a treatment plan taking into account the course of the disease, to choose and prescribe drug therapy, to use non-drug treatment methods, to carry out rehabilitation measures</li> </ul>	skill of clinical diagnostics; -performing treatment taking into account the course of the disease and the appointment of drug therapy using methods of non-drug treatment and rehabilitation measures	skill of clinical diagnosis; performing treatment taking into account the course of the disease and the purpose of drug therapy using methods of non-drug treatment and rehabilitation measures	85-100

**Control tests** are designed for students studying the course "Neurology". Tests are necessary for both the control of knowledge in the process of the current interim certification, and for the assessment of knowledge, the result of which can be set off.

When working with tests, the student is asked to choose one answer out of three or four proposed. At the same time, the tests vary in their complexity. There are tests among the proposed ones containing several options for correct answers. The student must provide all correct answers.



Tests are designed for both individual and collective solutions. They can be used in the process and classroom, and independent self-work. The selection of tests necessary for the control of knowledge in the process of interim certification is made by each teacher individually.

Results of performance of the test tasks are evaluated by a teacher using a five-grade scale for certification or on system "credit" - "no credit". Grade "excellent" is given if the number of correct answers is more than 90% of the tests offered by the teacher. Grade "good" is given if the number of correct answers is more than 70% of the tests. Grade "satisfactory" is given if the number of correct answers is more than 50% of the tests offered to the student.

### **Examples of the test tasks**

001. Clinical forms of neurosyphilis are: +

1. tabes dorsalis
2. meningitis+
3. syndrome of lateral amyotrophic sclerosis
4. progressive paralysis+
5. trigeminal neuralgia

002. The area of localization of the lesion with shingles is:

1. anterior horns of the spinal cord
2. lateral horns of the spinal cord
3. spinal ganglia +
4. hippocampus
5. Gasser's ganglion

003. For herpes zoster is typical:

1. dysfunction of pelvic organs
2. segmental type of sensitivity disorder +
3. pains+
4. complications of purulent meningitis
5. complications such as encephalitis

004. FOR NEUROPATHY OF THE TRIGEMINAL NERVE BRANCHES  
CHARACTERISTIC ARE:

1. constant pain in the face, +
2. sensitivity disorders in the face, +
3. short-term pain in the face,
4. trigger points,
5. the effect of drugs carbamazepine group.

005. THE MOST TYPICAL SYMPTOMS OF THE TRIGEMINAL NERVE

ARE:

1. paralysis of facial muscles,
2. the decline of taste on the tongue  $\frac{2}{3}$  anterior part,
3. loss of corneal reflex,+
4. violation of deep sensitivity on half of face,
5. shooting pain in the area of innervation of the affected branch.+

006. C PATIENTS WITH TRIGEMINAL NEURALGIA ARE TYPICALLY

COMPLAINTS ON:

1. constant aching pain, exciting half of the face,
2. short paroxysms of intense pain provoked by the slight touching the face,+
3. pain attacks of increasing intensity in the eye area, jaws, teeth, associated with enhanced tears and salivation,
4. prolonged pain in the orbit regions, eye angle associated with visual acuity disorder,
5. limitation of mouth opening, chewing difficulties, crunches and clicks in the parotid area.

007. THE MOST EFFECTIVE PATHOGENETIC METHOD. FOR POST-HERPETIC TRIGEMINAL NEURALGIA NERVE ARE NOT TYPICAL:

1. white scars on half of forehead,
2. folded tongue,+
3. spasms of circular muscles of eyes,+
4. paroxysmal pain in the back of the head,+
5. constant burning and itching in half of the forehead

## **Examples of case study tasks**

### **Case study task No. 1.**

A 34-year-old woman complains of severe pain in the frontal area on the right, radiating to the eyeball, cheek area, that have been noting for a week. The pain is paroxysmal, after the attack there is some reduction in pain, but pain may increase when talking. During meals noted increased attacks, and therefore forced to limit food intake, conversation. Anamnesis is not burdened. Before the onset of this disease have experienced emotional stress, hypothermia. Neurological status: from the cranial nerves focal symptoms were not revealed. There is pain in the exit point of 1 branch of the trigeminal nerve on the right, the sensitivity in the face is not changed. No paresis. Reflexes vivid correctly. Disorders of coordination are not revealed.

1. Neurological symptoms?
2. Localization of the lesion?
3. Preliminary clinical diagnosis?
4. Additional studies?
5. Treatment?

### **Case study task No. 2.**

A 25 year-old man has been feeling increased weakness in his right leg and instability when walking for a week. During questioning notes that at 18 years he had reduced vision in the left eye for one week. Did not address this issue to doctor, since vision alone have recovered. Two years ago, he felt the imperative urge to urinate and decrease in potency. Neurological status: horizontal nystagmus, reducing the force in the right leg to 4 points, the revival of the knee and achilles reflexes on the right, a symptom of Babinsky on the right, swaying in the Romberg's test and reduced vibration sensitivity in the leg when walking with closed eyes,

1. Neurological symptoms?

2. Localization of the lesion?
3. Preliminary clinical diagnosis?
4. Additional studies?
5. Treatment?

### **Case study task No. 3**

The patient is 52 years old, complained of intense pain and burning sensation in the right eye and superciliary region. Being sick for about a day. The grandson of the patient is currently sick with chickenpox. When neurological status was examined there was found out that general condition is close to satisfactory. Body temperature 37°C. In the area of the upper eyelid of the right eye and forehead on the right skin are hyperemia, bubble rash, extending to the scalp. The conjunctiva of the right eye is hyperemic, the eye is watery. Pupils are uniform. Separate horizontal nystagmoid twitching of the eyeballs. Tendon reflexes are evenly quickened. There are no pathological reflexes and meningeal symptoms.

Questions and tasks:

Specify the leading symptoms and syndromes of the disease;

Specify the focus of the pathological process (topical diagnosis);

Specify the origin of the pathological process (clinical, nosological diagnosis).

What additional research is needed?

Specify the basic principles of treatment.

### **Case study task No. 4.**

The patient is 20 years old. In 18 year age for 3-5 days experienced reduced vision in the right eye, not treated. A year later there was a swaying when walking, more to the right, weakness in the legs, periodically urinary retention, as well as shooting pain in the upper jaw course on the right, provoking by washing, brushing teeth, talking, food meal. Neurological status: horizontal small spreading nystagmus, more to the right. Elements of chanted speech. He talks cautiously due to the fear

of provoking a pain attack. Trigger points are detected along the nasolabial fold and at the right nose wing. Lower spastic paraparesis up to 3 points. No abdominal reflexes. In the Romberg's pose and when walking-swaying to the right. Bypassing and intention tremor in his right hand while performing the finger-to-nose test. Imperative urge to urinate with incontinence. Eye fundus examination – the pallor of temporal halves of disks of optic nerves.

Questions and tasks:

Specify the leading symptoms and syndromes of the disease;

Specify the focus of the pathological process (topical diagnosis);

Specify the nature of the pathological process (clinical, nosological diagnosis).

What additional research is needed?

Specify the basic principles of treatment.

*Evaluation criteria for the decision of case study tasks:*

- the "excellent" grade is given to the student who has discovered the system deep knowledge of the program material necessary for solving professional problems, who speaks the scientific language and presents the program material at different levels of its presentation, who knows the modern standards of diagnostics, treatment and prevention of diseases based on the data of evidence-based medicine;

- the student who has found full knowledge of the program material deserves the "good" grade;

- the grade "satisfactory" goes to a student who has shown a sufficient level of knowledge of the basic program material, but allowed errors in its presentation;

- the grade "unsatisfactory" is given to a student who made multiple errors of principle when answering questions.

### **Individual task**

An individual task is formed together with the student on the topic of the lesson

Evaluation criterion:

Credit - the student has completed an individual task

Fail – student failed to perform an individual task

### **Evaluation tools for interim certification**

#### **Questions to credit**

##### **I. General neuroscience (topical diagnosis)**

1. Anatomy of the pyramid tract. Signs of central paralysis.
2. Anatomy of a peripheral motor neuron. Signs of flaccid paralysis
3. Conductors of temperature and pain sensitivity. Syndromes of lesions.
4. Conductors of deep sensitivity. Syndromes of lesions.
5. Modern ideas about anatomical and physiological features of pain.
6. Syndrome of impairment to the spinal cord cross section at different levels: upper cervical, cervical, thoracic, lumbar thickening, cone.
7. I pair of cranial nerves. Anatomy. The symptoms of the infection.
8. II pair of cranial nerves. Anatomy. The symptoms of the infection.
9. III pair of cranial nerves. Anatomy. The symptoms of the infection.
10. IV pair of cranial nerves. Anatomy. Symptoms of lesions.
11. V pair of cranial nerves Anatomy. The symptoms of the infection.
12. VI pair of cranial nerves. Anatomy. Symptoms of lesions.
13. VII pair of cranial nerves. Anatomy. Symptoms of lesions.
14. IX pair of cranial nerves. Anatomy. The symptoms of the infection.
15. Bulbar paralysis. Pseudobulbar paralysis.
16. X pair of cranial nerves. Anatomy. The symptoms of the infection.
17. XI pair of cranial nerves. Anatomy. The symptoms of the infection.
18. XII pair of cranial nerves. Anatomy. The symptoms of the infection.
19. Cerebellum. Anatomy. The symptoms of the infection.

20. Extrapyrarnidal system. Anatomy. The symptoms of the infection.
21. Internal capsule. Visual hill (thalamus). Anatomy. The symptoms of the infection.
22. Types of agnosia.
23. Types of apraxia.
24. Types of aphasia. Dysarthria.

### **2. Diseases of the peripheral and autonomic nervous system**

1. Lumbosacral radiculopathy. Diagnostics, treatment.
2. Cervical radiculopathy. Diagnostics, treatment.
3. Trigeminal neuralgia.
4. Neuropathy of the facial nerve.
5. Neuralgia of the winged node.
6. Neuralgia of the glossopharyngeal nerve.
7. Acute demyelinating polyradiculoneuropathy of Guillain-barré.
8. Diphtheria polyneuropathy.
9. Pain dysfunction of the temporomandibular joint.
10. Quincke's edema

### **3. Vascular diseases of the nervous system.**

1. Subarachnoid hemorrhage.
2. Ischemic stroke (embolism)
3. Ischemic stroke (thrombosis)
4. Hemorrhagic stroke (hemorrhage in the substance of the brain).
5. Transient cerebral circulation disorders (hypertensive and hypotonic crises, transient ischemic attack)

### **4. Infectious diseases of the nervous system.**

1. Primary purulent meningitis.
2. Primary serous meningitis.
3. Tuberculous meningitis.
4. Secondary purulent meningitis.
5. Cerebral abscess of odontogenic.



6. Neurological manifestations of AIDS.
7. Small chorea.
8. Early and late (basal) syphilitic meningitis.

**5. Nervous system injuries.**

1. Concussion and brain contusion.
2. Compression of the brain with epi- and subdural hematoma.
3. Spinal cord injuries (concussion, contusion, compression)

**6. Tumors**

1. General signs of brain tumors diagnostics.
2. Tumor of the cerebellopontine angle.
3. Epilepsy and neuroses.
4. Epilepsy.