

Документ подписан простой электронной подписью
Информация о владельце:
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Должность: И.о. ректора
Дата подписания: 06.10.2026 15:31:52
Уникальный программный ключ:
d59234ba928aea5c04c54eb9013e367220bcb2a

Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY

Director of the Institute of Dentistry
_____/ Pervov Yu.Yu./
"8th" of June 2026

COLLECTION OF ASSESSMENT TOOLS
B1.V.EC.04.04 Osteoplasty in dental implantation
of the basic educational program
of Higher Education

Specialty	31.05.03 Dentistry for foreign students (English-language program) (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing health care in patients with dental pathology)
Mode of study	Full-time
Period of mastering the BEP	5 years (nominal length of study)
Institute	of Dentistry

Vladivostok, 2026

1. INTRODUCTION

1.1. Collection of Assessment Tools is a document that regulates the format, content, and types of assessment tools for continuous assessment, interim examination and final (state final) examination, and graded criteria for each type of assessment tools.

1.2. Assessment tools allows to evaluate the development of universal, general professional, and professional competencies (UCs, GPCs and PCs respectively) outlined in Federal State Educational Standard of Higher Education and defined in the basic educational program of higher education for the specialty 31.05.03 Dentistry for foreign students (English-language program), profile 02 "Healthcare" (in the field of providing health care in patients with dental pathology).

([BEP HE for the 31.05.03 Dentistry for foreign students \(English-language program\)](#) specialty, section 3 Learning Outcomes Requirements of the Basic Educational Program of Higher Education)

2. DOCUMENT BODY

2.1. Types of Assessment, Formats of Assessment Tools

No.	Types of assessment	Assessment Tools Format
1	Continuous assessment	Interview Questions
		Tests
		Mini-Case Studies
		Checklist
2	Interim assessment	Tests

3. The contents of assessment tools for continuous and interim examination are prepared by the teacher of the course

Interview questions

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.03	Dentistry for foreign students (English-language program)
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies
I		ANSWER THE QUESTIONS
		1. Development of dental implantation in surgical dentistry and maxillofacial surgery. Diagnosis and treatment planning for patients using dental implants. 2. Structure of surrounding hard and soft tissues. Assessment of the condition of the soft tissues around the implant. 3. Integration of hard and soft tissues in the implant area. 4. Surgical stage of dental implantation. 5. Justification for professional oral hygiene during implantation and reconstructive interventions on the jaw bones. 6. Dynamic observation of patients after completion of treatment. Follow-up examination. 7. Classification of osteoplastic materials.

		8. Application of osteoplastic materials to optimize osteogenesis. 9. Bone plastic surgery of jaws with bone grafts, plastic surgery with osteoplastic materials, tunnel osteoplasty method. 10. Bone plastic surgery: sinus lift. Guided bone regeneration. 11. Gum aesthetics, keratinized gingival augmentation. Indications and contraindications for surgical intervention. Criteria for surgical effectiveness. Choice of surgical treatment strategy. 12. Types of flaps, donor sites. Formation of a mucosal flap. 13. Suture material. Types of sutures in dental implantation. 14. Complications of dental implantation. Diagnosis of diseases in the implant area. 15. Mucositis. 16. Peri-implantitis. 17. Risk factors for the development of peri-implantitis. 18. Legal aspects of implantology practice. Risks in dental implantology and ways to minimize them. Legal assessment of factors influencing the emergence of conflict situations in dental implantation.
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Assessment criteria

"Very good" grade is given to a student who possesses knowledge of the subject in full scope outlined in the curriculum, has a sufficiently deep insight into the subject; is able to answer all questions clearly, exhaustively, and with no outside help; structures their answers logically, with emphasis on the most important information; is able to analyze, compare, classify, summarize, refine, and structure the course content, giving particular attention to cause-and-effect relationships.

"Good" is given to a student whose knowledge of the subject is almost in full scope outlined in the curriculum (gaps are only present in the knowledge of some especially complex aspects); is able to answer questions exhaustively with little to no outside help; does not always put emphasis on the most important information, but does not make significant mistakes.

"Satisfactory" is given to a student who possesses the bulk of knowledge on the subject; has difficulties answering questions with no outside help, uses imprecise wording; makes mistakes in substantial number of their answers.

"Unsatisfactory" is given to a student who does not have the mandatory minimum of knowledge on the subject, is not able to give an answer even with additional guiding questions.

Tests for continuous and interim assessment

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.03	Dentistry for foreign students (English-language program)
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies
I		ANSWER TEST QUESTIONS (SELECT CORRECT ANSWER(S))
		1. The "gold standard" of bone grafting is 1) xenotransplantation 2) implantation 3) allotransplantation 4) autotransplantation 2. In the alveolus, osteoid tissue is usually formed after

		1) 21-28 days 2) 60-90 days 3) 5-7 days 4) 10-14 days 3. Allografts are not characterized by an effect called 1) osteoblastic osteogenesis 2) osteostimulation 3) osteoinduction 4) osteoconduction 4. The following is not typical for autografts 1) contain a small number of regional stem cells 2) pronounced osteoreparative potential 3) transplant resistance to infection 4) absence of immunological intolerance reactions 5. The following is not typical for xenografts 1) contain a small number of regional stem cells 2) the risk of transmitting a viral infection 3) high probability of premature resorption 4) pronounced antigenicity 6. The following is not typical for synthetic materials 1) resistance to the development of inflammatory complications 2) biological safety 3) pronounced osteogenic potential 4) expansion of modeling capabilities 7. Responsible for the production of intercellular substance 1) monocytes 2) osteocytes 3) osteoclasts 4) osteoblasts 8. Closed sinus lift is indicated if the height of the alveolar bone to the bottom of the sinus is at least 1) 3 mm 2) 4 mm 3) 2 mm 4) 5 mm 9. According to the literature, suppuration of autogenous bone in the postoperative period is observed in 1) 5-7% of cases 2) 10-13.3% of cases 3) 7.5-29.4% of cases 4) 29.5-45% of cases 10. Non-specific growth factors are found in 1) mitochondria 2) α-granules 3) β-granules 4) lysosomes
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	11. The final formation of mature bone tissue in the defect area occurs through 1) 3 months 2) 4 months 3) 5 months 4) 6 months 12. Osteoplastic material, which acts as a conductor for the growth of blood vessels, has the property of 1) osteoinduction 2) osteoblastic osteogenesis 3) osteostimulation 4) osteoconduction 13. Osteoplastic material, the use of which involves the influence of certain factors that contribute to the strengthening of the already ongoing processes of osteogenesis, has the property of 1) osteoconduction 2) osteoinduction 3) osteostimulation 4) osteoblastic osteogenesis 14. Osteoplastic material, the use of which results in the phenotypic transformation of non-specific poorly differentiated cells into bone cells under the influence of specific substances, has the property of 1) osteoblastic osteogenesis 2) osteoconduction 3) osteoinduction 4) osteostimulation 15. The transplantation of an artificial synthetic material into a bone wound is called 1) allotransplantation 2) implantation 3) autotransplantation 4) xenotransplantation 16. The transplantation of one's own tissue taken from one area and transplanted to another area of the same person is called 1) xenotransplantation 2) allotransplantation 3) autotransplantation 4) implantation 17. The transplantation of tissue from person to person is called 1) autotransplantation 2) xenotransplantation 3) implantation 4) allotransplantation 18. The transplantation of tissue from an animal to a human is called 1) allotransplantation 2) xenotransplantation 3) autotransplantation
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	4) implantation 19. When healing under a blood clot of cystic bone defects formed after the removal of jaw cysts, the restoration of bone tissue in full volume is observed radiographically only in 1) 41.3% of cases 2) 43.75% of cases 3) 38.4% of cases 4) 35.6% of cases 20. With jaw cysts, inflammatory phenomena develop in 1) 57-68% of cases 2) 35-46% of cases 3) 25-34% of cases 4) 47-56% of cases 21. In the case of an uncomplicated postoperative period, a growth of the microvascular network is observed in the terminal sections of the seedling, which is already noted after 1) 4-5 days 2) 3-4 days 3) 2-3 days 4) 5-7 days 22. The process of gradual restructuring of the bone callus and its replacement with lamellar bone tissue in the socket of the extracted tooth ends at approximately 1) 21-28 days 2) 60-90 days 3) 5-7 days 4) 10-14 days 23. The stage of formation of vessels in the alveolus of the extracted tooth ends on 1) 10-14 days 2) 60-90 days 3) 21-28 days 4) 5-7 days 24. Disadvantages of allosteoplasty include 1) transplant instability to infection 2) the need for a specialized laboratory 3) additional trauma inflicted on the patient 4) high probability of premature resorption 5) ethical and legal issues 25. Disadvantages of autoosteoplasty include 1) additional trauma inflicted on the patient 2) a significant increase in the operation time 3) high probability of premature resorption 4) pronounced antigenicity 5) high risk of transmitting a viral infection. 26. Disadvantages of autoosteoplasty include 1) pronounced antigenicity 2) transplant instability to infection
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	3) high probability of premature resorption 4) limitation of indications for transplantation of one's own bone tissue in early childhood, in elderly patients with concomitant pathology 5) a pronounced imbalance between the processes of implant resorption and bone regeneration 27. Disadvantages of xenoplasty include 1) transplant instability to infection 2) requires the presence of a laboratory base 3) risk of transmitting a viral infection 4) a pronounced imbalance between the processes of implant resorption and new formation of bone regenerate 5) the presence of ethical and legal issues 28. Disadvantages of xenoplasty include 1) additional trauma inflicted on the patient 2) a pronounced imbalance between the processes of implant resorption and new formation of bone regenerate 3) pronounced antigenicity 4) transplant instability to infection 5) high probability of premature resorption 29. Specify the disadvantage of plastic over synthetic materials 1) high risk of transmitting a viral infection 2) transplant instability to infection 3) a pronounced imbalance between the processes of implant resorption and new formation of bone regenerate 4) pronounced antigenicity 30. Advantages of allosteoplasty include 1) absence of immunological intolerance reactions 2) high biocompatibility 3) the possibility of adequate replacement of complex configuration defects 4) the biomaterial can be saturated with medicinal preparations 5) elimination of legal and moral-ethical problems 31. Advantages of allosteoplasty include 1) the possibility of pre-crushing allogeneic implants in laboratory conditions 2) biological safety 3) the "gold standard" of bone grafting 4) high biocompatibility 5) no additional injury 32. Advantages of autoosteoplasty include 1) high biocompatibility 2) the "gold standard" of bone grafting 3) no additional injury 4) ease of sterilization, resistance to the development of inflammatory complications 5) the possibility of using them as carriers of various medicinal products 33. Advantages of autoosteoplasty include
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- 1) resistance to the development of inflammatory complications
- 2) **absence of immunological intolerance reactions**
- 3) can be produced in large volumes
- 4) **well-defined osteoreparative potential**
- 5) elimination of the risk of infection transmission

34. Advantages of plastics over synthetic materials include

- 1) the “gold standard” of bone grafting
- 2) absence of immunological intolerance reactions
- 3) **resistance to the development of inflammatory complications**
- 4) high biocompatibility
- 5) **biological safety**

35. Advantages of plastics over synthetic materials include

- 1) well-defined osteoreparative potential
- 2) absence of immunological intolerance reactions
- 3) **elimination of legal and moral-ethical problems**
- 4) high biocompatibility
- 5) **elimination of the risk of infection transmission**

36. Advantage of xenoplasty is

- 1) absence of immunological intolerance reactions
- 2) **can be produced in large volumes**
- 3) high biocompatibility
- 4) well-expressed osteoreparative potential

37. The growth factor that initiates vascularization and plays a key role in the ingrowth of vessels into devascularized tissue is called

- 1) transforming growth factor
- 2) **vascular endothelial growth factor**
- 3) insulin-like growth factor
- 4) epidermal growth factor
- 5) platelet-derived growth factor

38. A growth factor that has a mitogenic effect on osteoblastic lineage cells and also stimulates bone formation by differentiated osteoblasts is called

- 1) **insulin-like growth factor**
- 2) transforming growth factor
- 3) vascular endothelial growth factor
- 4) epidermal growth factor
- 5) platelet-derived growth factor

39. A growth factor that is a heparin-binding protein involved in the proliferation and differentiation of numerous cell types derived from the mesoderm and neuroectoderm is called

- 1) vascular endothelial growth factor
- 2) **basic fibroblast growth factor**
- 3) platelet-derived growth factor
- 4) transforming growth factor
- 5) epidermal growth factor

40. A growth factor that stimulates chemotaxis and mitosis of osteoblast precursors, as well as the synthesis of collagen matrix in both connective and bone tissue, is called

		1) transforming growth factor 2) epidermal growth factor 3) vascular endothelial growth factor 4) platelet-derived growth factor 5) insulin-like growth factor 41. The growth factor, which is the first growth factor described, accelerates wound epithelialization by stimulating mitosis of keratinocytes and dermal fibroblasts and promotes the synthesis of other growth factors, is called 1) epidermal growth factor 2) vascular endothelial growth factor 3) insulin-like growth factor 4) platelet-derived growth factor 1) 5) transforming growth factor
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Assessment criteria

“Very good” - more than 91% correct answers of questions of every level

“Good” - 81-90% correct answers of questions of every level

“Satisfactory” - 71-80% correct answers of questions of every level

“Unsatisfactory” - less than 71% correct answers of questions of every level

Standardized case studies and checklists for **B1.V.EC.04.04 Osteoplasty in dental implantation**
course

Case Study No. 1

Case Study No. 1

	Code	Competence description / name of labor function / name of work activity / text																																																																
S	31.05.03	Dentistry for foreign students (English-language program)																																																																
C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment																																																																
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies																																																																
I		READ THE PROVIDED CASE DESCRIPTION AND GIVE DETAILED ANSWERS TO THE QUESTIONS Patient F., 53 years old, came to the clinic. Complaints: unsatisfactory aesthetics and impaired chewing of food. Medical history: Prosthetic dentistry was performed 10 years ago. According to the patient, the missing teeth were removed due to caries and its complications. Objective examination data, external examination: decrease in the height of the lower part of the face by 3 mm, nasolabial folds are pronounced, the corners of the mouth are lowered, facial asymmetry is observed. <table><tr><td>F</td><td>F</td><td>Cd</td><td>A</td><td>A</td><td>Cd</td><td>F/C</td><td>C</td><td>C</td><td>F/C</td><td>Cd</td><td>A</td><td>Cd</td><td>A</td><td>A</td><td>Cd</td></tr><tr><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr><tr><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td></tr><tr><td>F</td><td>Cd</td><td>A</td><td>Rx</td><td>F/C</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Cd</td><td>Cd</td><td>A</td><td>Cd</td><td>A</td></tr></table> Clinical examination of the oral cavity:	F	F	Cd	A	A	Cd	F/C	C	C	F/C	Cd	A	Cd	A	A	Cd	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	F	Cd	A	Rx	F/C							Cd	Cd	A	Cd	A
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On the upper jaw: missing teeth 1.5, 1.4, 2.4, 2.6, 2.7.

Metal-ceramic prosthesis with supports on teeth 1.6, 1.3, unsatisfactory marginal fit of the crowns, partial de-cementation. Deep caries of teeth 1.1, 2.1, 1.2, 2.2. Fracture of metal-ceramic bridge prosthesis 2.3, 2.5, 2.8.

On the lower jaw: missing teeth 3.8, 3.6, 4.6. Metal-ceramic bridge prosthesis supported by teeth 3.7, 3.5, 3.4, unsatisfactory fixation of the prosthesis, partial de-cementation of artificial crowns on all supporting teeth, recession and hyperemia of the marginal gingiva. Increased abrasion of teeth 3.3, 3.2, 3.1, 4.1, 4.2, 4.3. Secondary deep caries of tooth 4.4. The crown of tooth 4.5 is completely destroyed. Fracture of the metal-ceramic prosthesis supported by teeth 4.5, 4.7, the crown of tooth 4.5 and the facet of tooth 4.6 are missing. Complete de-cementation of the artificial crown on tooth 4.7. Mismatch of the cosmetic center.



Orthopantomogram shows bone atrophy covering 1/3 of the root length of the teeth in the upper and lower jaws. Teeth 1.3, 1.6, 2.2, 2.3, 2.5, 2.8, 3.4, 3.5, 3.7, 4.5, 4.7 are depulped. Filling material is unevenly visible in the canals of teeth 1.6, 2.2, 2.3, 3.4. Caries of teeth 1.7, 1.2, 1.1, 2.1, 2.2, 4.4. Bone resorption around the root of tooth 4.5.

Q	1	Question: Make a diagnosis
Q	2	Question: Create a comprehensive treatment plan without taking implantation into account
Q	3	Question: List the clinical stages of manufacturing metal-ceramic dental prostheses
Q	4	Question: Name the method for determining the height of the lower part of the face in central occlusion; what is the essence of the method?
Q	5	Question: Specify the minimum thickness of a cast framework for metal-ceramic crowns; what device is used to take measurements?

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Q	1	Question: Make a diagnosis
A		Correct answer: 1. Partial secondary adentia on the upper and lower jaw K08.1 2. On the upper jaw, Kennedy class 2, on the lower jaw, Kennedy class 3 3. Chronic gingivitis K05.10 4. Teeth 3.3, 3.2, 3.1, 4.1, 4.2, 4.3 – Abrasion K03.0 5. Teeth 1.8, 1.7, 1.2, 1.1, 2.1, 2.2, 4.4, 4.8 – Dentin caries K02.1 6. Teeth 1.6, 2.2, 2.3, 3.4, 4.5 – Chronic apical periodontitis K04.5
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	4-5 descriptors of the correct answer have been listed 1-3 descriptors of the correct answer have been listed
R0	Fail	No descriptors of the correct answer have been listed
Q	2	Question: Create a comprehensive treatment plan without taking implantation into account
A		Correct answer: 1. Removal of all orthopedic structures due to failure 2. Therapeutic sanitation - professional oral hygiene, treatment of dental caries 1.8, 1.7, 1.2, 1.1, 2.1, 2.2, 4.4, 4.8, endodontic retreatment of teeth 1.6, 2.2, 2.3, 3.4 3. Surgical sanitation – tooth extraction 4.5 4. Orthopedic rehabilitation – manufacturing of metal-ceramic crowns with support on teeth 1.6, 1.3, 1.2, 1.1, 2.1, 2.2, 2.3, 2.4, 3.7, 3.5, 3.4, 3.3, 3.2, 3.1, 4.1, 4.2, 4.3, 4.4, 4.7, manufacturing of clasp dentures for the upper jaw with support-retaining clasps on crowns 1.6, 1.3, 2.4, 2.5; manufacturing of clasp dentures for the lower jaw with support- retaining clasps on crowns 3.7, 3.4, 4.4, 4.7.
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	4-5 descriptors of the correct answer have been listed 1-3 descriptors of the correct answer have been listed
R0	Fail	No descriptors of the correct answer have been listed
Q	3	Question: List the clinical stages of manufacturing metal-ceramic dental prostheses
A		Correct answer:

		1. Preparation, taking impressions, bite registration, making temporary crowns. 2. Fitting metal frames (cast, milled). 3. Determination of color. 4. Try-in of veneered crowns, correction of approximal contacts and occlusal relationships. 5. Fixing the structure
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	3-4 incomplete descriptors of the correct answer have been listed 1-2 descriptors of the correct answer have been listed
R0	Fail	No descriptors of the correct answer have been listed
Q	4	Question: Name the method for determining the height of the lower part of the face in central occlusion; what is the essence of the method?
A		Correct answer: 1. The method for determining the height of the lower part of the face is called Anatomical and Physiological. 2. The method involves creating bite ridges on a wax or rigid base. Next, fixed points are marked on the patient, from which the relative physiological resting height of the mandible is determined, which is 2-4 mm. A distance-the resting height-is measured from these points. With central occlusion, the vertical dimension of the lower face is reduced by 2-4 mm relative to the normal resting height of the mandible. The ridges are softened, and the patient, under the doctor's supervision, closes the mouth to the measured height.
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	2 incomplete descriptors of the correct answer have been listed 1 descriptor of the correct answer has been listed
R0	Fail	No descriptors of the correct answer have been listed
Q	5	Question: Specify the minimum thickness of a cast framework for metal-ceramic crowns; what device is used to take measurements?
A		Correct answer: 1. The minimum thickness of the cast frame is 0.4 mm. 2. Measurements are taken using a micrometer.
R2	Very good	All descriptors of the correct answer have been listed
R1	Good/Satisfactory	2 incomplete descriptors of the correct answer have been listed 1 descriptor of the correct answer has been listed
R0	Fail	No descriptors of the correct answer have been listed

4. Assessment criteria for learning outcomes

"**Pass**" is given to a student who has shown a sufficiently strong knowledge of the basic concepts of the subject; is able to complete specific practical tasks outlined in the program with no outside help, use recommended reference material, and correctly evaluate the results.

"**Fail**" is given to a student who has significant gaps in knowledge of the basic concepts of the subject, is not able reach the correct solution to a specific practical task outlined in the curriculum even with outside help.

Practical Skills Assessment Checklist

Practical Skill Name: Examination of the patient and prescription of recommendations

C	PC-2	ability to administer and apply modern methods and/or digital technologies to treat dental patients as well as monitor the effectiveness and safety of the treatment	
F	A/02.7	Prescribing and monitoring the effectiveness and safety of non-pharmacological and pharmacological therapies	
	Action	Performed	Not Performed
1.	Use of personal protective equipment, selection of tools for performing the task (medical gown, cap, change of shoes, medical gloves, dental mirror, tweezers, probe, tray)	1 point	-1 point
2.	Conducting a survey (complaints, medical history, informed voluntary consent of the patient to obtain data on concomitant and past diseases, prosthetics, oral sanitation)	1 point	-1 point
3.	Examination (palpation of the soft tissues of the face and bone base, determination of the height of the lower part of the face in a state of physiological rest and occlusal height, determination of the type of bite)	1 point	-1 point
4.	Palpation of the temporomandibular joint (determination of symmetry, smoothness of movements, deviation of the lower jaw)	1 point	-1 point
5.	Determination of the degree of tooth mobility by probing or palpation, determination of the periodontal condition (probing of the periodontal groove, pocket), detection of gum recession, reduction in the height of the interdental septa.	1 point	-1 point
6.	Determination of areas of mobile and immobile mucous membrane, determination of compliance and pain sensitivity of the oral mucosa by palpation	1 point	-1 point
7.	Determination of bite, dental arch defects, dental defects - the degree of destruction of hard tissues of chewing teeth using the index of destruction of the occlusal surface of the tooth (IODZ according to V.Yu. Milikevich), the degree and uniformity (unevenness) of atrophy of the alveolar processes, exostoses, palatine torus	1 point	-1 point
8.	Evaluation of orthopantomogram, panoramic and targeted radiographs: presence of periapical changes, changes in the cortical plate, narrowing or widening of the periodontal space	1 point	-1 point
9.	Filling out a medical records	1 point	-1 point
10.	Formulating a diagnosis and making recommendations	1 point	-1 point
	Total	10 points	

Assessment criteria:

"Pass" - at least 75% of required actions performed

"Fail" - 74% of required actions or less performed