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 Fundamentals and
Information Technologies in Medicine
_____ / Startseva M.S./
"22nd" of April 2026

COLLECTION OF ASSESSMENT TOOLS
B1.C.05 Medical physics
of the basic educational program
of Higher Education

Specialty	**31.05.01 General Medicine (English-language program)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system)
Mode of study	**Full-time**
Period of mastering the BEP	**6 years** (nominal length of study)
Institute	of Fundamentals and Information Technologies in Medicine

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 31.05.01 General Medicine (English-language program), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system).

(BEP HE for the 31.05.01 General Medicine (English-language program), 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**	**Tests**
		Mini-Case Studies
		Checklists
2	**Interim assessment**	**Interview Questions**

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

Tests for continuous and interim assessment

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine (English-language program)
C	GPC-4	Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
C	PC-3	Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease
F	A/02.7	Examination of the patient in order to make a diagnosis
I		**ANSWER LEVEL 1 TEST QUESTIONS (ONE CORRECT ANSWER)**
		1. THE WORK PERFORMED BY THE RIGHT VENTRICLE IS PROPORTIONAL TO +1. ABOUT 20% OF THE WORK PERFORMED BY THE LEFT VENTRICLE

2. ABOUT 5% OF THE WORK PERFORMED BY THE LEFT VENTRICLE
3. ABOUT 50% OF THE WORK PERFORMED BY THE LEFT VENTRICLE
4. ABOUT 55% OF THE WORK PERFORMED BY THE LEFT VENTRICLE

2. AS THE BLOOD MOVES THROUGH THE CIRCULATORY SYSTEM (FROM THE AORTA TO THE VENA CAVA), THE AVERAGE VALUE OF THE TOTAL PRESSURE
1. INCREASES AND STAYS HIGHER THAN ATMOSPHERIC PRESSURE
2. INCREASES IN THE ARTERIAL CYCLE AND DECREASES TO LOWER THAN ATMOSPHERIC AT THE VENA CAVA.
3. STAYS UNCHANGED THRU OUT ALL THE CIRCULATORY SYSTEM
+4. STAYS CLOSE TO ATMOSPHERIC AT THE ARTERIAL CYCLE AND THEREAFTER DECREASES.

3. IN THE HUMAN CIRCULATORY SYSTEM, SYSTOLIC PRESSURE IS CLOSE TO 120MMHG AT
1. THE ARTERIOLES
+2. THE MAJOR ARTERIES
3. THE CAPILLARS
4. THE VEINS

4. IN THE CARDIOVASCULAR SYSTEM THE PRESSURE IS NEGATIVE
+1. IN THE VEINS
2. IN THE AORTA
3. IN THE ARTERIOLES
4. IN THE ARTERIES

5. AN ELECTRIC DIPOLE CAN EXIST FOR AN ARBITRARILY LONG TIME IN
+1. A DIELECTRIC ENVIRONMENT
2. A CONDUCTIVE ENVIRONMENT
3. A SEMICONDUCTIVE ENVIRONMENT

6. A CURRENT DIPOLE CAN EXIST FOR AN ARBITRARILY LONG TIME IN
+1. A DIELECTRIC ENVIRONMENT
2. A CONDUCTIVE ENVIRONMENT
3. A VACUUM

7. THE TOTAL FORCE ACTING UPON AN ELECTRIC DIPOLE IN A UNIFORM ELECTRIC FIELD
+1. EQUALS ZERO
2. IS PARALLEL AND DIRECTED ALONG THE ELECTRICAL FIELD
3. IS PARALLEL AND OPPOSITELY DIRECTED ALONG THE ELECTRICAL FIELD

		4. DEPENDS ON THE DIRECTION OF THE DIPOLE IN SPACE **8. ELECTRIC DIPOLES POSITION THEMSELVES IN AN ELECTRICAL FIELD** +1. PARALLEL TO THE FORCE LINES 2. PARALLEL TO THE EQUIPOTENTIAL LINES 3. PERPENDICULAR TO FORCE LINES 4. AT AN ANGLE RELATIVE TO AND PROPORTIONAL TO THE FORCE LINES **9. ELECTRICAL DIPOLES IN A NON-HOMOGENEOUS ELECTRIC FIELD** 1. ARE ATTRACTED TO REGIONS WITH MINIMAL POTENTIAL 2. ARE LOCATED ALONG THE EQUIPOTENTIAL LINES OF THE ELECTRICAL FIELD +3. ARE LOCATED ALONG THE FORCE LINES OF THE ELECTRICAL FIELD 4. ARE LOCATED ALONG THE FORCE LINES OF THE ELECTRICAL FIELD AND ARE ATTRACTED TO REGIONS WITH MAXIMUM POTENTIAL **10. THE MAIN PARTS OF AN OPTICAL QUANTUM GENERATOR (LASER) INCLUDE** +1. AN ACTIVE MEDIUM, A LIGHT SOURCE, AND END MIRRORS 2. AN ACTIVE MEDIUM, A LIGHT SOURCE, AND A MONOCHROMATOR 3. A LIGHT SOURCE, END MIRRORS, AND A MONOCHROMATOR 4. A LIGHT SOURCE, AN ACTIVE MEDIUM, AND A POLARIZER **11. THE POLARIZING MICROSCOPE USED IN HISTOLOGY ALLOWS ONE TO EXAMINE** 1. TRANSPARENT TISSUES 2. DYED FABRICS +3. TISSUES WITH OPTICAL ANISOTROPY 4. FABRICS WITH STRONG ABSORPTION **8. THE ROLE OF A DIFFUSING LENS IN THE EYE IS PLAYED BY** 1. THE VITREOUS BODY 2. THE LENS +3. THE CORNEA 4. THE FLUID OF THE ANTERIOR CHAMBERS

Assessment criteria

“Pass” - more than 71% correct answers of questions of every level

“Fail” - less than 70% correct answers of questions of every level

Interview questions

	Code	Competence description / name of labor function / name of work activity / text
S	31.05.01	General Medicine for international students (in English)
C	GPC-4	Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity
C	PC-3	Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease
F	A/02.7	Examination of the patient in order to make a diagnosis
I		**ANSWER THE QUESTIONS** 1. WHAT IS NATURAL LIGHT FROM THE PERSPECTIVE OF WAVE THEORY? 2. WHAT IS THE DIFFERENCE BETWEEN POLARIZED LIGHT AND NATURAL LIGHT? WHAT IS A LIGHT VECTOR? WHAT IS THE PLANE OF POLARIZATION OF POLARIZED LIGHT? 3. WHAT ARE OPTICALLY ANISOTROPIC MEDIA, AND WHICH SUBSTANCES BELONG TO THEM? (GIVE EXAMPLES) 4. WHAT IS DOUBLE REFRACTION? WHAT ARE ORDINARY AND EXTRAORDINARY RAYS? 5. WHAT IS THE NICOLA'S PRISM USED FOR? 6. WHAT THE MALUS LAW AND HOW IS IT FORMULATED? 7. WHAT SUBSTANCES ARE CALLED OPTICALLY ACTIVE? WHAT SUBSTANCES ARE CALLED ISOMERS? GIVE EXAMPLES OF LEFT-ROTATING AND RIGHT-ROTATING SUBSTANCES WITH DIFFERENT PROPERTIES. 8. WHAT ARE THE MAIN PARTS OF THE POLARIMETER? WHAT IS IT USED FOR? 9. WHAT IS LIGHT DISPERSION? WHAT IS NORMAL AND ABNORMAL VARIANCE? WHAT DOES THE GRAPH OF REFRACTIVE INDEX RELATIVE TO FREQUENCY (WAVELENGTH) OF LIGHT LOOKS LIKE?

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.

Appendix 1

Practical Skills Assessment Checklist

Practical Skill Name "Determination of the viscosity of a liquid using a rotational viscometer"

C	GPC-4	Able to use medical devices included in the healthcare guidelines, as well as perform medical examination to make a diagnosis		
C	GPC-5	Able to assess morphofunctional status, physiological states, and pathological processes in the human body when working to achieve objectives of professional activity		
C	PC-3	Ability and readiness to collect and analyze complaints that a patient presents with, anamnestic data, examination results, results of laboratory and instrumental tests, biopsy and other studies in order to identify patient's condition or establish the presence or absence of a disease		
F	A/02.7	Examination of the patient in order to make a diagnosis		
WA	Work activities as part of the function: Interpretation of data gained from additional patient examinations			
	Action		Performed	Not Performed
1.	Equipment preparation: checking the state of the viscometer; calibration and measurement accuracy; preparation of the measuring vessel.		1 point	-1 point
2.	Sample preparation for measurement: checking the sample for compliance with the requirements of the experiment.		1 point	-1 point
3.	Solution preparation: ensuring that the solution is ready and meets the parameters of the experiment		1 point	-1 point
4.	Measurement: measuring the viscosity; recording all measurement data		1 point	-1 point
5.	Analysis of the results. Plotting the dependence of the viscosity of the test solution on its concentration		1 point	-1 point
	Total		5 points	

Assessment criteria:

"Pass" –75% or more of actions performed correctly

"Fail" – 74% and less