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Translated by
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Boletín de Orientación

Pruebas para la Certificación de Maestros



PCMAS:

**Prueba de Conocimientos Fundamentales
y Competencias Profesionales**

Mission Statement

The College Board's mission is to connect students to college success and opportunity. We are a not-for-profit membership organization committed to excellence and equity in education.

About the College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of more than 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT® and the Advanced Placement Program®. The organization also serves the education community through research and advocacy on behalf of students, educators and schools.

For further information, visit www.collegeboard.org.

The College Board of Puerto Rico and America Latin (CBPRAL) develops programs and services similar to those offered in the United States, but specially designed for Spanish speaking populations. These programs are directed at systematizing evaluation processes and university admission procedures, strengthening academic and personal counseling and promoting educational excellence.

Our best known programs include the Program Evaluation and University Admissions (PEAU™), which includes the Academic Aptitude Exams™ (PAA™) and Academic Achievement Exams™ (PACH™); the High School Enrollment and Evaluation Exams (PIENSE™); the Advanced Placement Program (PNA™); the CEPA™ Inventory (Learn, Explore, Plan, and Act); the English Language Assessment System for Hispanics (ELASH™); the high school Pre-Academic Aptitude test (Pre-PAA™); Knowledge testing by Area (PCs™); the Teachers of English to Spanish Speakers Test (TESST™) and the Teacher Certification Exams (PCMAS™).

The College Board is committed to the principle of equal opportunity, and its programs, services, and employment policies are governed by this principle.

The College Board is committed to the principle of non-discrimination and to combating sexual harassment in recruiting its staff, as well as in all the services it offers and the activities it conducts.

The College Board bases hiring practices on personal capacity and preparation with no discrimination based on race, color, national origin, religion, sex, age, social condition, political affiliation, impediment or any other characteristic protected by law.

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The information provided in this bulletin can help you prepare for the College Board Teacher Certification Exams (PCMAS): the Basic Knowledge and Professional Skills Exam and the Science, Math, Spanish, English, and Social Studies/History Specialization Exams. It includes general information about how the exams are designed and prepared, suggestions about how to prepare for the exams, and a test description with a thematic sketch. Also, it presents sample exercises and explains how to answer them. The last pages include a section on the rating scale used to report the test results. It also shows the process that the College Board will follow to report the results.

This bulletin's contents are subject to future revision.

Exam justification

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Who should take the PCMAS?

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How are the exams developed?

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Exam Characteristics

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Examining committees

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Learn about the exams

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The day before the exam

Organize your exam materials and put them in a convenient place to get them the morning of the exam. Use the following checklist:

- Admission ticket
- Photo ID
- Several No. 2 pencils with erasers
- The directions for getting to your Exam Center
- Calculator (for Science students)

Exam Preparation Suggestions

The following offers specific suggestions that can be a big help when you take the Teacher Certification Exams (PCMAS).

- There are exercises of varying levels of difficulty in each section of the exam. You will receive the same score for answering an easy exercise as for answering a more difficult exercise.
- You receive points for each exercise you answer correctly and no points for exercises that you don't answer or that you answer incorrectly. Try to answer all the exercises.
- There is a time limit for answering each section. It is advisable not to spend too much time on an exercise that proves difficult. You can answer this exercise after answering the remainder of the exercises in the section, if there is any time remaining.
- You can use the test booklet to do your calculations and make notes and to jot down the exercises that you skipped in order to return them if there is time after answering all the other exercises in the section.
- Do not make unnecessary marks on the answer sheet, because if the optical reader detects what appears to be two responses to a single exercise, it will interpret this as an incorrect answer.

Exam schedule

The Basic Knowledge and Professional Skills Exam (PCMAS-General) will be given in the morning, starting at 8:00 a. m.

The Specialization Exams (Spanish, English, Mathematics, Science and Social Studies/History) will be given in the afternoon starting at 1:30 p. m.

General Description of the Basic Knowledge and Professional Skills Exam

The exam has been designed to be offered to candidates from any higher education institution in Puerto Rico. So it is not limited to the skills or knowledge offered at a particular institution. The exam does not require an individual to have seen this material in a specific course. In preparing the exam, the basic college course content offered at various higher education institutions has been taken into account. In addition, the exam includes skills that teachers in the education system consider a novice teacher needs in order to teach effectively, regardless of the grade level or specialization area which you plan to teach.

The Basics Knowledge and Professional Skills Exam consists of three parts of multiple choice exercises that will last about two (2) hours and twenty (20) minutes. In addition there will be discussion exercises related to a pedagogical situation that must be answered within thirty (30) minutes.

The exam covers content in the following areas:

- Basic Knowledge
 - Social Sciences
 - Humanities
 - Natural Sciences
 - Mathematics
 - Spanish
 - English
- Professional Skills
 - Methodology
 - Humanities
 - Assessment and Research
 - Educational Philosophy
 - Sociological Philosophy
 - Human Development
 - Educational Psychology
- Analyze a pedagogical situation (shown in a separate flyer)

Basic Knowledge

This part of the exam covers the basic general education knowledge that teacher candidates should have mastered in the social sciences, the humanities, the natural sciences, math, Spanish, and English. A significant innovation for this exam, compared with prior exams, is the way written Spanish skills will be assessed. Outlining a composition has been replaced by indirectly evaluating editing skills via multiple-choice exercises in which the thought logic behind the ideas is measured to assess the candidate's ability to construct coherent, consistent text.

Topic outline

A. Social Sciences

1. Personal dimensions
 - Dimensions of the human body: sexuality and gender within cultural and social contexts
 - Psychological elements that define personal identity
2. Interpersonal dimensions
 - Social consequences of solidarity and conflict
 - Social value of work
3. Social organization dimensions
 - Social stratification systems: relationships between individuals, state and nation
 - Citizen participation forms (Government, Justice)
 - Characteristics of neo-liberalism and globalization in contemporary society and its impact on economic reality, development, and social awareness
4. The environment and social life
 - Culture's influence on the individual and society (ideas, language, traditions, and beliefs)
 - Social science methods

B. Humanities

1. Classic Antiquity: Greece and Rome
 - the difference between democracy, Hellenism and empire
2. The Christian world
 - Fundamentals of Christian thinking
 - Religions and invasions in the Middle Ages
 - Elements of art, ethics, education, and religions in the Middle Ages

3. The modern world modern and the supremacy of reason
 - Birth of City-States and the modern Renaissance
 - Colonization, culture and human rights in America
 4. The contemporary world and the current reality
 - Factors and consequences of European and U. S. colonial imperialism (Puerto Rico, the Caribbean and Latin America)
 - Consequences of the world wars
 - Puerto Rico's modernization and its *free associated* status
 5. Art and music
 - Functions and features of architecture, sculpture, painting, and music
 6. Literature
 - Different contexts or perspectives of literary works as expressive means
- C. Natural Sciences
1. Nature of science
 - Scientific method
 - Science and technology
 2. Development and preservation of life and the environment
 - Origin of life and evolution
 - Value of health: nutrition, preventive and curative methods
 - Responsible human sexuality and prevention
 - Human body as a system
 - Interaction of human beings with their environment and the importance of conservation
 - Environmental impact of energy production and use (with emphasis on Puerto Rico)
 - Various energy sources and their implications for the development of future life
 - Biotechnology development and its ethical implications
 3. Matter and energy
 - Structure of matter, its properties and practical value for human beings
 4. Earth and space science
 - Weather phenomena and its impact on daily life (with emphasis on Puerto Rico)
- D. Mathematics
1. Numbers

- Problem solving using proportional reasoning
2. Operations
 - Calculate percentages for day to day applications
 3. Analyze and interpret data
 - Analysis of data sets
 - Represent empirical data in chart form (histograms, pie charts and graphs linear)
 - Interpret graphs that describe social or natural phenomenon
 - Calculate the mean, the median, and the mode for a data set and description tendencies
 4. Spatial sense
 - Calculate the area, volume, and perimeter of geometric figures
- E. Spanish (not literary discourse)
1. Editing: coherence and consistency (internal thinking logic)
 - Discursive digressions
 - Conjunctive and paragraph connectors
 - Expressions with variable meanings
 - paragraph organization (number, sequence, comparison, contrast, conceptual development, wording and problem solution, cause and effect logic)
 - relationship between ideas in the context (topic sentences, principal and secondary sentences; introduction, development, and conclusion)
 2. Discourse analysis
 - Vocabulary in context
 - Implied and explicit ideas
 - Content thematic macrostructure: hypothesis, facts, opinions, beliefs, fallacies
 - Discourse types: narrative, descriptive, expository, argumentative
 - Inferences
- F. English
1. Managing and using language
 - Correct preposition and pronoun usage
 - Correct verbal time usage
 - Subject and predicate agreement in sentence construction
 2. Understanding and analyzing reading

- Vocabulary in context
- Recognizing ideas in context (topic sentences, principal and secondary sentences; introduction, development, and conclusion)
- Discursive techniques: definition, illustration, comparison, contrast, cause and effect
- Hypothesis identification, facts, opinions, beliefs, fallacies and arguments
- Types of speech: narrative, descriptive, expository, argumentative

Exercise examples with explanations

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Professional Skills

This part of the test examines core human development aspects, educational psychology, the sociological and philosophical foundations of education, methodology, assessment and research. The test includes the core content of human development and educational psychology. In the philosophical and social foundations portion the implications of these on the educational process are taken into account. In addition, examinees will demonstrate competency in methodological aspects related to curriculum, instruction design, the teaching and learning planning process and learning assessment (formative and summative). It also includes applying concepts to different types of research.

The pedagogical situation requires the candidate to analyze and answer various discussion exercises. University professors from various public and private institutions will use rubrics to evaluate the answers.

IT IS ESSENTIAL TO RESPOND TO THE PEDAGOGICAL SITUATION; OTHERWISE, THE TEST WILL BE INVALIDATED IN ITS ENTIRETY.

Topic outline

A. Human development

1. Fundamental concepts of human development theories for the teaching and learning process
 - Nature, function, importance and influence of genetic and environmental factors
 - Theoretical perspectives
 - Moral development theories
 - Theories about language acquisition and development
 - Physical, intellectual, social, and personality development
2. Research findings about human development
3. Aspects that influence human development
 - Parenting styles and their relationship with development
 - Relationship between school environment and educational practices and human development
 - Specific situations that influence human development
4. Diagnostic categories of student exceptionalities (causes, characteristics, and needs)
 - Disability
 - Physical and health disorders
 - Communication problems

- Hearing and visual problems
- Emotional and behavioral problems
- Specific learning problems
- Autism spectrum
- Attention deficit disorder with or without hyperactivity
- Gifted and talented

B. Educational psychology

1. Learning theories

- Nature, function and importance
- Historical background
- Educational theorists principle contributions

2. Theoretical foundations of how students learn

- How knowledge is constructed
- Ways to acquire skills and attitudes (values)

3. Psychological theories to address individual differences

- Genetic and environmental, social and cultural factors
- Intelligence: theories and measurement
- Learning styles
- Multiple intelligences
- Emotional intelligence

4. Psychological theories for classroom management and behavior modification

- School environment influence on self-esteem and self-realization

5. Perspectives on motivation for promoting improvements in learning

- Different theoretical perspectives on motivation
- Relationship between motivation and learning: needs, goals, and attributes

6. Neuro-education contributions to the teaching learning process

- Brain research implications about the teaching learning process

C. Social foundations

1. Sociological perspectives that influence the field education

- Theoretical perspectives

2. Nature and goals of education according to different sociological perspectives

- basic concepts relating to the social background of education
3. Educational implications of the different sociological perspectives
 - Culture's influence in education (traditions, customs, means of information massive, subcultures)
 - Demographic, social, cultural, economic, political, legal and technological changes and their educational implications
 - Influence of social groups (family, pairs, socio-economic class, community, Church, and ethnicity) on the educational process
 - School in the face of social problems
 4. Regulations, standards, and professional ethics
 - History of education in Puerto Rico
 - Education laws and regulations related to school administration, the rights and duties of teachers, students, and exceptional individuals
 5. Leadership and collaboration aspects in their interaction with the school community promoting student and professional growth
 - The teacher's social function (educator, model, facilitator, change agent, civic leader)
 - Relationship between education and the work world
 - Teacher, student, parent, and community participation in the educational experience
 - Globalization, technological advancements, and multiculturalism
- D. Philosophical foundations
1. Philosophical perspectives influencing the educational field
 - historical background
 - nature and role of educational philosophy
 - educational philosophy perspectives: essentialism, perennialism, and progressivism
 - educational philosophy positions: idealism, realism, pragmatism, existentialism, reconstructionism, postmodernism . . .
 - philosophical concepts influencing the educational field: metaphysics, epistemology, anthropology, ethics, esthetics and axiology
 2. Education's nature and purpose according to different philosophical perspectives
 - concepts of different philosophical postures related to:
 - education as a human development process (self-determination, self-realization, problem solving, authenticity-introspection, transformation)

- education as a social development and value transmission process (search for a society ideal, socialization and inculturation, democratization, empathic interaction and experiencing values, rebuilding social structure)

3. Educational implications of different philosophical perspectives

- curriculum (liberal, practical . . .)
- methodology (Socratic, syllogistic . . .)
- teacher's role (model, guide . . .)
- student's role (passive agent, active . . .)
- discipline (intrinsic, extrinsic . . .)
- assessment (objective, subjective . . .)
- model of citizen to be formed (philosophical, authentic . . .)

E. Methodology

1. Educational objectives

- operational objectives (taxonomies, classification by taxonomy category: cognitive, affective, and psychomotor)
- content standards and grade-level expectations
- general curriculum aspects

2. Teaching and learning methods and techniques

- teaching and learning processes (taking into consideration individual differences, selecting and organizing the content, strategies, techniques and instructional resources, teaching resources complements — including multimedia and computer —, assessment criteria)

3. Teaching strategies to meet specific situations and students' special needs

- internal and external factors affecting the experience educational
- student needs
- strategies associated with learning

4. Using technology effectively for teaching

- technology assisted learning
- educational innovations

5. Enriched learning environments

- creating enriched learning environments

F. Evaluation and research

1. Evaluation and assessment techniques

- general concepts
 - evaluation instruments
 - assessment techniques and instruments
2. Findings from classroom research
 - resources for accessing teaching practice research, ideas, and discussions
 3. Established standards and expectations for evaluating teaching effectiveness
 - alignment between standards, objectives, and evaluation
 4. Basic statistics concepts and item analysis
 - difficulty index
 - discrimination index
 - central tendency measures (average, mode, median)
 - dispersion or variability measures (standard deviation, variance)
 - rankings (percentiles)
 5. Different research types and designs
 - general principles
 - research types: quantitative and qualitative
 - research designs: descriptive and experimental
 - classroom research
 - the teacher as researcher
 - the teacher as a research consumer

Exercise Examples with explanations

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Analyze a pedagogical situation

Instructions: A pedagogical situation is presented below followed by three (3) discussion exercises. You have 30 minutes to read and respond. For each one must include all the arguments to fully justify your response. The answer should be logical, clear, and presented in order. **Recommendation:** Read the entire situation first and the exercises before starting to answer. **NOT COMPLETING THIS PART OF THE EXAM WILL INVALIDATE THE TEST ENTIRE EXAM.**

Students have various skills: music, sports, artistic, scientific, and mathematical among others. These skills have NOT always been identified or developed by the school system. You, as a teacher, are interested in fostering a culture of academic success that develops students' potential and creativity, and at the same time increases school retention.

1. Identify two (2) skills that you would like to help your students develop and explain one (1) project or initiative that integrates the development of these skills.
2. Write an educational plan that addresses developing student creativity in the classroom. The plan should include an objective, development activities, and evaluation for the objective. The objective should include the situation, the observable actions, and satisfactory performance.
3. Describe two (2) activities to increase school retention and justify each of these activities based on two (2) of the following: philosophical, psychological, or sociological. Include the postulate and the theory used for each basis selected.

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Examples of acceptable answers for the first exercise

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Evaluation rubric for the first pedagogical situation exercises

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Results cancelation by the College Board

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Results cancelation by the candidate

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Results verification requests from candidates

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