DENTAL ADMISSION TEST (DAT)

I. Survey of the Natural Sciences (100 questions)
- Biology (40 questions)
  Cell and Molecular Biology, Diversity of Life; Biological Organization and Relationship of Major Taxa, Structure and Function of Systems, Developmental Biology, Genetics, Evolution, Ecology, and Behavior
- General Chemistry (30 questions)
  Stoichiometry and General Concepts, Gases, Liquids and Solids, Solutions, Acids and Bases, Chemical Equilibria, Thermodynamics and Thermochemistry, Chemical Kinetics, Oxidation-Reduction Reactions, Atomic and Molecular Structure, Periodic Properties, Nuclear Reactions, Laboratory
- Organic Chemistry (30 questions)
  Mechanisms: Energetics and Structure, Chemical and Physical Properties of Molecules, Stereochemistry (structure evaluation), Nomenclature, Individual Reactions of the Major Functional Groups and Combinations of Reactions to Synthesize Compounds, Acid-Base Chemistry, Aromatics and Bonding

II. Perceptual Ability (90 questions)
The Perceptual Ability Test is comprised of six subtests: 1) apertures, 2) view recognition, 3) angle discrimination, 4) paper folding, 5) cube counting, and 6) 3D form development.

III. Reading Comprehension (50 questions)
The Reading Comprehension Test contains three reading passages on various scientific topics. Prior understanding of the science topics is not a prerequisite to answering the test items. The reading passages require the ability to read, comprehend, and analyze thoroughly basic scientific information.

IV. Quantitative Reasoning (40 questions)
(Calculator available on screen) Mathematical Problems - Algebra (equations and expressions, inequalities, exponential notation, absolute value, ratios and proportions, and graphical analysis); Numerical calculations (fractions and decimals, percentages, approximations, and scientific notation); Conversions (temperature, time, weight, and distance); Probability and Statistics; Geometry; Trigonometry; Applied Mathematics (Word) Problems

Graduate Record Examination (GRE)

I. Analytical Writing
This section consists of two analytical writing tasks: a 30-minute "Analyze an Issue" task and a 30-minute "Analyze an Argument" task.

II. Verbal Reasoning
Verbal Reasoning has two sections, with 30 minutes and 20 questions per section. There are three types of questions:
- Text Completion—Tests the ability to reach a conclusion about how a passage should be completed on the basis of partial information.
- Sentence Equivalence—Tests ability to reach a conclusion about how a sentence should be completed, while focusing on the meaning of the whole sentence.
- Reading Comprehension—Tests abilities that are required to read and understand the kinds of prose encountered in graduate school.

III. Quantitative Reasoning
Quantitative reasoning has two sections, with 35 minutes and 20 questions per section. Skills, concepts and abilities are tested in geometry, arithmetic, algebra, and data analysis.
- Quantitative Comparison Asks you to compare two quantities and then determine if Quantity A is greater, Quantity B is greater, the two quantities are equal, or the relationship cannot be determined.
- Multiple-Choice—Some questions ask for one answer while others ask for one or more answers. A question may or may not specify the number of choices to select.
- Data Interpretation—Questions are grouped together and refer to the same table, graph or other data presentation. Questions ask you to interpret or analyze the given data.
- Numeric Entry—Answer entered as integer, decimal, or a fraction.

Cost: $195

Length of exam: 3 hours and 45 minutes

<table>
<thead>
<tr>
<th>Section</th>
<th>Questions</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical Writing</td>
<td>2 questions</td>
<td>30 minutes each</td>
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<tr>
<td>Verbal Reasoning</td>
<td>40</td>
<td>60 minutes</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>40</td>
<td>70 minutes</td>
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Registration and more information available at:
http://www.ada.org/dat.aspx
http://www.ets.org/gre/

Medical College Admission Test (MCAT) 2015

Biological and Biochemical Foundations of Living Systems
This test section asks you to combine your knowledge of foundational concepts with your scientific inquiry, reasoning, and research and statistics skills to solve problems that demonstrate readiness for medical school. Understanding the processes unique to living organisms, such as growing and reproducing, maintaining a constant internal environment, acquiring materials and energy, sensing and responding to environmental changes, and adapting is important to the study of medicine. You will be tested on your knowledge of how cells and organ systems within an organism act both independently and in concert to accomplish these processes, as well as your ability to reason about these processes at various levels of biological organization within a living system.

Chemical and Physical Foundations of Biological Systems
This section asks you to combine your knowledge of foundational concepts with your scientific inquiry, reasoning, and research and statistics skills to solve problems that demonstrate a readiness for medical school. Understanding the mechanical, physical, and biochemical functions of human tissues, organs, and organ systems is important to the study of medicine. You will be tested on your knowledge of the basic chemical and physical principles that underlie the mechanisms operating in the human body, and your ability to apply an understanding of these general principles to living systems.

Critical Analysis and Reasoning Skills
This section tests your reasoning skills by asking you to critically analyze information from the reading passages. Topics of the passages will be wide-ranging and based in the social sciences and humanities disciplines. Specific knowledge of these disciplines is not required for this section; all of the information you will need appears in the passages provided. Among the areas from which content is drawn are ethics and philosophy, cross-cultural studies, and population health.

Psychological, Social, and Biological Foundations of Behavior
This section assesses your knowledge and use of the concepts in psychology, sociology, biology, research methods, and statistics that provide a solid foundation for learning in medical school about the behavioral and socio-cultural determinants of health and healthcare. Understanding the psychological and socio-cultural determinants of health is important to the study of medicine. You will be tested on your knowledge of the ways in which psychological, social, and biological factors influence perceptions and reactions to the world; behavior and behavior change; what people think about themselves and others; the cultural and social differences that influence well-being; and the relationships between social stratification, access to resources, and well-being.

Cost: $300

Length of Exam: 6 hours and 15 minutes

<table>
<thead>
<tr>
<th>Section</th>
<th>Questions</th>
<th>Time</th>
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<tr>
<td>Biological and Biochemical Foundations of Living Systems</td>
<td>59</td>
<td>95 minutes</td>
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<tr>
<td>Chemical and Physical Foundations of Biological Systems</td>
<td>59</td>
<td>95 minutes</td>
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<tr>
<td>Critical Analysis and Reasoning Skills</td>
<td>59</td>
<td>95 minutes</td>
</tr>
<tr>
<td>Psychological, Social, and Biological Foundations of Behavior</td>
<td>53</td>
<td>90 minutes</td>
</tr>
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</table>

Registration and more information available at:
http://www.aamc.org/students/mcat/
OPTOMETRY ADMISSION TEST (OAT)

I. Survey of the Natural Sciences (100 questions)
- **Biology (40)**
  Cell and Molecular Biology, Diversity of Life; Biological Organization and Relationship of Major Taxa, Structure and Function of Systems, Developmental Biology, Genetics, Evolution, Ecology, and Behavior
- **General Chemistry (30 questions)**
  Stoichiometry and General Concepts, Gases, Liquids and Solids, Solutions, Acids and Bases, Chemical Equilibria, Thermodynamics and Thermochemistry, Chemical Kinetics, Oxidation-Reduction Reactions, Atomic and Molecular Structure, Periodic Properties, Nuclear Reactions, Laboratory
- **Organic Chemistry (30 questions)**
  Mechanisms: Energetics and Structure, Chemical and Physical Properties of Molecules, Stereochemistry (structure evaluation), Nomenclature, Individual Reactions of the Major Functional Groups and Combinations of Reactions to Synthesize Compounds, Acid-Base Chemistry, Aromatics and Bonding

II. Reading Comprehension (40 questions)
Contains three reading passages on various scientific topics. Prior understanding of the science topics is not a prerequisite to answering the test items. The reading passages require the ability to read, comprehend, and analyze thoroughly basic scientific information.

III. Physics (40 questions)
Units and vectors, linear kinematics, statics, dynamics, rotational motion, energy and momentum, simple harmonic motion, waves, fluid statics, thermal energy and thermodynamics, electrostatics, D.C. circuits, magnetism, optics, and modern physics.

IV. Quantitative Reasoning (40 questions)
Mathematical Problems - Algebra (equations and expressions, inequalities, exponential notation, absolute value, ratios and proportions, and graphical analysis); Numerical calculations (fractions and decimals, percentages, approximations, and scientific notation); Probability and Statistics; Geometry; Trigonometry; Applied Mathematics (Word) Problems

Cost: $330

Length of exam: 3 hours and 55 minutes

<table>
<thead>
<tr>
<th>Section</th>
<th>Time</th>
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<tbody>
<tr>
<td>Survey of the Natural Sciences</td>
<td>90 minutes</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>50 minutes</td>
</tr>
<tr>
<td>Physics</td>
<td>50 minutes</td>
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<tr>
<td>Quantitative Reasoning</td>
<td>45 minutes</td>
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Registration and more information available at:
https://www.ada.org/oat/index.html

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PHARMACY COLLEGE ADMISSION TEST (PCAT)

There are six content areas measured by the PCAT in seven separate subtests:
- **Verbal Ability** section measures general, non-scientific word knowledge and usage using analogies and sentence completion. Analogies are 62% and sentence completion is 38% of this section.
- **Biology** section measures knowledge of the principles and concepts of basic biology, including general biology, microbiology, and human anatomy and physiology. 50% of the questions are general biology, 20% microbiology, and 30% anatomy and physiology.
- **Chemistry** section measures knowledge of principles and concepts of inorganic and elementary organic chemistry. 50% of the questions are general chemistry, 30% organic chemistry, and 20% biochemistry processes.
- **Reading Comprehension** section measures ability to comprehend, analyze and evaluate reading passages on science-related topics. Comprehension is 30% of this section, Analysis 40%, and Evaluation 30%.
- **Quantitative Ability** section measures skills in mathematical processes and the ability to reason through and understand quantitative concepts and relationships, including applications of basic math 15%, algebra 20%, probability and statistics 20%, pre-calculus 22%, and calculus 22%.
- **One Written Essay** section measure conventions of language skills in terms of sentence formation, usage and mechanics. All of the writing prompts state a problem involving a health issue, a science issue, or a social, cultural or political issue. Examinees are asked to present a solution to the problem in their essays.
- **Experimental Items** – Of the 48 items in each of the five multiple-choice subtests, 40 are core items that count towards your score and eight are experimental. One of the two writing subtests is also experimental. Experimental items are being tested for future use on PCAT test forms and will not affect your score.

Cost: $199

Length of exam: 4 hours

<table>
<thead>
<tr>
<th>Section</th>
<th>Questions</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Verbal Ability</td>
<td>40</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Biology</td>
<td>48</td>
<td>35 minutes</td>
</tr>
<tr>
<td>Chemistry</td>
<td>48</td>
<td>35 minutes</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>48 (6 passages)</td>
<td>50 minutes</td>
</tr>
<tr>
<td>Quantitative Ability</td>
<td>48</td>
<td>45 minutes</td>
</tr>
<tr>
<td>Written Essays</td>
<td>1</td>
<td>30 minutes</td>
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Registration and more information available at:
http://www.pcatweb.info
http://www.aacp.org/resources/student/pharmacyforyou/ admissions/Pages/PCAT.aspx

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A Student Guide to Admission Exams for Graduate and Professional Schools

Texas A&M University-Corpus Christi

College of Science and Engineering
http://www.sci.tamu.edu/prep

Suzzette Chopin, Ph.D., M.B.A.
Regents Professor of Biomedical Sciences
suzzette.chopin@tamucc.edu

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