

# RELEASED EXAM

1999

## AP<sup>®</sup> Psychology

### CONTAINS:

- Multiple-Choice Questions and Answer Key
- Free-Response Questions, Scoring Guidelines, and Sample Student Responses with Commentary
- Statistical Information about Student Performance on the 1999 Exam

The logo for the Advanced Placement Program, consisting of the letters 'AP' in a bold, italicized, sans-serif font. The letters are dark with a metallic, 3D effect, giving them a sense of depth and weight.

*Advanced Placement Program<sup>®</sup>*



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## The 1999 AP<sup>®</sup> Examination in Psychology

### Contains:

- Multiple-Choice Questions and Answer Key
- Free-Response Questions, Scoring Guidelines, and Sample Student Responses with Commentary
- Statistical Information about Student Performance on the 1999 Exam

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# Chapter I

## The AP Process

- Who Develops the AP Psychology Exam?
- How Is the Exam Developed?
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- Preparing Students for the Exam
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This chapter will give you a brief overview of what goes on behind the scenes during the development and grading of the AP Psychology Exam. You can find more detailed information in the “Technical Corner” of the AP website ([www.collegeboard.org/ap](http://www.collegeboard.org/ap)).

### Who Develops the AP Psychology Exam?

The AP Psychology Development Committee, working with content experts at Educational Testing Service (ETS), is responsible for creating the exam. This committee is made up of six teachers from secondary schools, colleges, and universities in different parts of the United States. The members provide different perspectives: AP high school teachers offer valuable advice regarding realistic expectations when matters of content coverage, skills required, and clarity of phrasing are addressed. On the other hand, college and university faculty members ensure that the questions are at the appropriate level of difficulty for an introductory college course in psychology. Each member typically serves for three years.

Another person who aids in the development process is the Chief Faculty Consultant (CFC), who supervises the scoring of the examinations. He or she attends every committee meeting to ensure that the free-response questions selected for the exam can be scored reliably.

### How Is the Exam Developed?

It takes at least two years to develop each AP Psychology Exam. The development process is different for multiple-choice and free-response sections:

#### Section I

1. Each committee member independently writes a selection of multiple-choice questions. Questions are written also by other college and secondary school teachers.
2. The Committee convenes to review these draft questions, ensuring accuracy and appropriateness for a college-level introductory course. In addition, they eliminate any language, symbols, or content that may be offensive to major subgroups of the test-taking population. Statistical procedures and pretesting help the committee identify possibly unfair items.
3. The questions that make it through this screening process are assembled according to test specifications and, after further editing and checking, comprise Section I of the AP Psychology Exam.

The Committee controls the level of difficulty of the multiple-choice section by including a variety of questions at different levels of difficulty.

#### Section II

1. Individual members of the Development Committee write a selection of free-response questions.
2. The entire Committee extensively reviews and refines draft questions, and determines which will work well for the AP Exam. They consider, for



example, whether the questions cover a representative sample of course content, whether they offer an appropriate level of difficulty, and whether they will elicit answers that allow faculty consultants to discriminate among the responses along a particular scoring scale. An ideal question enables the stronger students to demonstrate their accomplishments while revealing the limitations of less advanced students.

In the last stage of development, committee members give approval to a final draft of all multiple-choice and free-response questions. This review takes place several months before the administration of the exam.

## Question Types

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The AP Exam in Psychology contains a 70-minute multiple-choice section and a 50-minute free-response section. The two sections are designed to complement each other and to meet the overall course objectives and exam specifications.

**Multiple-choice questions** are useful for measuring the breadth of content in Psychology. These questions are appropriate for assessing a student's knowledge of significant psychological research findings, and the definition and application of major psychological concepts. In addition, they have three other strengths:

1. They are highly reliable. Reliability, or the likelihood that candidates of similar ability levels taking a different form of the exam will receive the same scores, is controlled more effectively with multiple-choice questions than with free-response questions.
2. They allow the Development Committee to include a selection of questions at various levels of difficulty, thereby ensuring that the measurement of differences in students' achievement is optimized. For AP Exams, the most important distinctions among students are between students earning the grades of 2 and 3, and 3 and 4. These distinctions are usually best accomplished by using many questions of middle difficulty.
3. They allow the CFC to compare the ability level of the current candidates with those from another year. A number of multiple-choice questions from an earlier exam are included in the current one, thereby allowing comparisons to be made between

the scores of the earlier group of candidates and the current group. This information, along with other data, is used by the CFC to establish AP grades that reflect the competence demanded by the Advanced Placement Program<sup>®</sup>, and that compare with grades from earlier years.

**Free-response questions** are a more appropriate tool for evaluating a student's mastery of scientific research principles and ability to make connections among constructs from different psychological domains (e.g., development, personality, learning).

1. They allow candidates to use their powers of analysis to build logical structures with supporting arguments and interconnected elements from the various fields of psychology.
2. They allow students to draw conclusions from data and to present uncommon yet correct responses.

The AP Psychology Exam contains two free-response questions. Students may be asked to analyze a general problem in psychology (e.g. depression, adaptation) using concepts from different theoretical frameworks or subdomains in the field, or to design, analyze or critique a research study.

After each exam administration, free-response and multiple-choice questions are analyzed both individually and collectively, and the conclusions are used to improve the following year's exam.

## Scoring the Exam

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### Who Scores the AP Psychology Exam?

The people who score the free-response section of the AP Psychology Exam are known as "faculty consultants." These faculty consultants are experienced psychology instructors who either teach the AP course in a high school, or the equivalent course at a college or university. Most have served previously as faculty consultants; 10 to 20 percent are new each year. Great care is taken to get a broad and balanced group of teachers. Among the factors considered before appointing someone to the role are school locale and setting (urban, rural, etc.), gender, ethnicity, and years of teaching experience. If you are interested in applying to be a faculty consultant at an AP Reading, you can complete an online application in the "Teach-

ers” section of the AP website ([www.collegeboard.org/ap](http://www.collegeboard.org/ap)), or request a printed application by calling (609) 406-5384.

There were 118 faculty consultants at the 1999 AP Psychology Reading. They were divided into two groups, each under the direction of a “Question Leader,” who in turn was supported by “Table Leaders.” Each group of faculty consultants was responsible for scoring one of the free-response questions.

## Ensuring Accuracy

The primary goal of the scoring process is to have each faculty consultant score his or her set of papers fairly, uniformly, and to the same standard as the other faculty consultants. This is achieved through the creation of detailed scoring guidelines, the thorough training of all faculty consultants, and various “checks and balances” applied throughout the AP Reading.

## How the Scoring Guidelines Are Created

1. Before the AP Reading, the Chief Faculty Consultant (CFC) prepares a draft of the scoring guidelines for each free-response question.
2. A few days before the Reading, the CFC, Question Leaders, Table Leaders, and ETS content experts meet at the Reading site. They review and revise the draft scoring guidelines, and test them by pregrading randomly selected student papers.
3. Once the faculty consultants arrive for the Reading the CFC, Question Leaders, and Table Leaders conduct training sessions for each question which are attended by all the faculty consultants who are to score that question. If problems or ambiguities become apparent, the scoring guidelines are revised and refined until a final consensus is reached.

## Training Faculty Consultants to Apply the Scoring Guidelines

Since the training of the faculty consultants is so vital in ensuring that students receive a grade that accurately reflects their performance, the process is thorough:

1. The faculty consultants read sample papers that have been pregraded (see above). These samples reflect all levels of ability.

2. Each group of faculty consultants then compares and discusses the scores for the samples, based on the scoring guidelines. The objectives are to refine the scoring guidelines and to teach the faculty consultants to apply the scoring guidelines in a consistent and reliable manner.
3. Once the faculty consultants as a group can apply the standards consistently and without disagreement, they begin reading in teams. Scores and differences in judgment are discussed with the Question Leaders, the Table Leaders, or the CFC until agreement is reached.
4. After a team shows consistent agreement on its scores, its members proceed to score individually. Faculty consultants are encouraged to seek advice from each other, the Question Leaders and Table Leaders, or the CFC when in doubt about a score. A student response that is problematic receives multiple readings and evaluations.

## Maintaining the Scoring Guidelines

A potential problem is that a faculty consultant could give a student response a higher or lower score than it deserves because the same student has performed well or poorly on other questions. The following steps are taken to prevent this so-called “halo effect:”

- Each question is read by a different faculty consultant.
- All scores given by other faculty consultants are completely masked.
- The candidate’s identification information is covered. Using these practices permits each faculty consultant to evaluate free-response answers without being prejudiced by knowledge about individual candidates.

Here are some other methods that help ensure that everyone is adhering closely to the scoring guidelines:

- The entire group discusses pregraded papers each morning, and as necessary during the day.
- “Spot checks,” in which the same paper is read by each faculty consultant in the group, are conducted on a regular basis. These checks allow individual scores to be compared, and provide information on retraining needs.

- Each faculty consultant is asked at least once to rescore a set of selected papers that he or she has already scored, without seeing the previously assigned score. When differences between the original and rescored evaluations occur, the faculty consultant reconsiders the final score, perhaps in consultation with colleagues or the Question Leader.
- The CFC and the Question Leaders monitor use of the full range of the scoring scale for the group and for each faculty consultant by checking daily graphs of score distributions.

## Preparing Students for the Exam

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The free-response questions on the AP Psychology Exam are designed to address both basic and applied aspects of the field. They allow students to demonstrate their mastery of the scientific method, their recognition of the existence of competing paradigms within psychology, and their ability to apply basic psychological principles to a variety of problems within the field.

The AP Psychology Development Committee believes that the free-response questions should not be answerable on the basis of just one chapter in a textbook or just one lecture; rather, they should require an understanding that bridges several different contexts within psychology. Specific identification of the components of the scientific method (e.g., independent variable, dependent variable, controls) may be required, but, more importantly, the students should be able to apply their general knowledge to particular problems that they may not have studied in great detail. Students should avoid giving answers in an outline format, and instead, develop a coherent argument or explanation concerning the problem presented.

In all cases, it is important that students read the question carefully and direct their answers specifically to the question. Students are expected to be explicit in their use of psychological constructs and to be specific both in their reference to and discussion of psychological principles or problems, citing evidence and examples to illustrate their explanations. The faculty consultants especially look for and reward students' capacity to incorporate in their analysis correctly used psychological vocabulary. Students should also be advised that

restating the question at the beginning of the essay adds nothing to its value. Similarly, it is a waste of their time to provide tangential information that may be correct, but is irrelevant to the question. Finally, faculty consultants look for students to be familiar with the APA ethical principles so that they can draw upon them when responding to the free-response questions.

Students will be best prepared for writing their examination essays by being given a variety of opportunities to answer free-response questions during the academic year. Assignments might include designing and critiquing psychological studies, writing research papers that require a critical analysis of published studies of an issue, and analyzing essay questions that require comparison and contrast of theories or studies.

Samples of student writing from the AP Exam, the scoring guides used at the Reading by faculty consultants to evaluate student performance on the essays, and the rationales explaining why each sample essay received the score it did are routinely provided with published examinations, such as the 1994 AP Psychology Examination and the 1999 AP Psychology Examination offered here. Sample multiple-choice and essay questions are also published in each year's edition of the Advanced Placement Program's Course Description for a given subject. The free-response section of each examination is released to the public after the examinations have been given in May.

## Teacher Support

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There are a number of resources available to help teachers prepare their students — and themselves — for the AP course and exam.

**AP workshops and summer institutes.** New and experienced teachers are invited to attend workshops and seminars to learn the rudiments of teaching an AP course as well as the latest in each course's expectations. Sessions of one day to several weeks in length are held year-round. Dates, locations, topics, and fees are available through the College Board's Regional Offices, in the publication *Graduate Summer Courses and Institutes*, or in the "Teachers" section of our website.



**College Board Online® (CBO).** Up-to-date AP information is available via CBO at [www.collegeboard.org](http://www.collegeboard.org). Or, you can go directly to AP at [www.collegeboard.org/ap](http://www.collegeboard.org/ap). From there, you can enter the “Teachers” section, which includes a comprehensive list of FAQs; a searchable AP workshop and Summer Institute database; the latest free-response questions and scoring guidelines; multiple-choice questions; and information about how the teachers can join an online discussion group in their subject (see below). One of our newer features is a behind-the-scenes look at who creates the courses and exam; the AP Reading and grading process; the validity and reliability procedures used; and data on student performance. Because of CBO’s dynamic nature, and the difficulty of describing it in print, we encourage you to go online and see what’s there for yourself.

**Online discussion groups.** The AP Program has developed an electronic mailing list for each AP subject. Many AP teachers find this free resource to be an invaluable tool for sharing ideas with colleagues on syllabi, course texts, teaching techniques, and so on, and for discussing other AP issues and topics as they arise. To find out how to subscribe, go to the “Teachers” section of our website.

**AP publications and videos.** See the Appendix for descriptions of a variety of useful materials for teachers. Of particular interest is the publication that complements this *Released Exam* — the *Packet of 10 1999 AP Psychology Examinations*. Teachers can use these sets, which come with blank answer sheets, to simulate a national administration in their classroom.

**AP videoconferences.** Several videoconferences are held each year so that AP teachers can converse electronically with the high school and college teachers who develop AP courses and exams. Schools that participate in the AP Program are notified of the time, date, and subject of the videoconference in advance. Or, you can contact your Regional Office for more information. Videotapes of each conference are available shortly after the event; see the Appendix for ordering information.



# Chapter II The 1999 AP Psychology Examination

- Exam Content and Format
- Giving a Practice Exam
- Instructions for Administering the Exam
- The Exam

## Exam Content and Format

**Section I**, composed of 100 objective questions, assesses the breadth of a student's knowledge. The questions cover the 13 areas of scientific psychology described in the *AP Course Description in Psychology*. In some questions, students are asked to demonstrate their understanding of a psychological term, e.g., genotype, echoic memory, mania, or phonemes. In others, they are asked to apply concepts from a particular psychological theory, e.g., Kohlberg's theory of moral judgment or attribution theory, or to identify the theoretical framework with which a given explanation is associated, e.g., an explanation of depression in terms of norepinephrine levels. Other questions are designed to assess general understanding of the scientific method as well as knowledge of findings from major research studies or areas of study.

**Section II**, the free-response section of the examination, asks students to apply their understanding of psychological principles and research to major issues in psychology and to integrate their mastery of concepts across several subdomains within the field. In 1999, Question 1 asked students to describe the role of three biological mechanisms and three learning mechanisms in determining an individual's eating habits and body weight. They were then asked to choose one biological and one learning mechanism, and to discuss the

implications of each for weight management. Each of the eight components of this question was worth one point for a possible total score of eight points.

The second free-response question in 1999 described a research study examining perceptual tendencies, and asked students to describe how five psychological concepts could be used to help explain the perception of the research participants. Students received one point for defining each concept and one point for applying it to the research study. Therefore, students could receive a total of 10 points on this question.

Scoring guides and sample student responses are included in the discussion about the free-response section found later in this book.

## Giving a Practice Exam

The following pages contain the instructions, as printed in the 1999 *Coordinator's Manual*, for administering the AP Psychology Exam. A blank answer sheet and a copy of the 1999 AP Psychology Exam follow these instructions. If you plan to use this released exam to test your students, you may wish to use the instructions to create an exam situation that closely resembles a national administration. If you do, read only the directions in the boxes to the students; all other instructions are for the person administering the test and need not be read aloud. Some instructions, such as those referring to the date, the time, and page numbers, are no longer relevant; please ignore them.

Another publication that you might find useful is the so-called *Packet of 10*. This is a set of the 1999 AP Psychology Exam booklets and blank answer sheets. Information on ordering AP publications is available at the back of this book.

## Examination Structure

The number of questions in each section of the 1999 AP Psychology Examination, and the time allowed to administer them, were as follows:

### Multiple-Choice (Section I)

100 questions . . . . . 70 minutes

### Free-Response (Section II)

2 essay questions . . . . . 50 minutes

\*Of the 100 questions in the first section, two were eliminated after the exam was administered.

\*\*The first essay question was graded on a 0 to 8 point scale (8 being the top score), and the second question was graded on a 0 to 10 point scale (10 being the top score).

## Instructions for Administering the Exam (from the 1999 AP Coordinator's Manual)

### IMPORTANT

**For regular administrations**, read ALL of the boxed instructions below.

**For administrations using an alternate form of the exam**, read ALL of the boxed instructions below **except** for those marked specifically for the May 17th administration. If these instructions are being used for a late administration, all days, dates, and times to be read aloud should be adjusted as necessary.

Complete the general instructions beginning on page 34. Then say:

It is Monday morning, May 17, and you will be taking the AP Psychology Exam. Print your name, last name first, on the front cover of the unsealed Section I booklet and read the directions on the back of the booklet. When you have finished, look up. . . .

Work only on Section I until time is called. Do not open the Section II package until you are told to do so. Remember, when you come to the end of the multiple-choice questions, there will be answer ovals left on your answer sheet. Only No. 2 pencils may be used to mark your answers on Section I. Are there any questions?

Answer all questions regarding procedure.

When you are ready to begin the exam, note the time here \_\_\_\_\_. Then say:

Open your Section I booklet and begin. You have 1 hour and 10 minutes for Section I of this exam.

Allow 1 hour and 10 minutes. Note the time you will stop here \_\_\_\_\_. While the candidates are working on Section I, you and your proctors should make sure they are marking answers on their answer sheets in pencil and are not looking at their Section II booklets.

After 1 hour and 10 minutes, say:

Stop working. Close your exam booklet and keep it closed on your desk. Do not insert your answer sheet in the booklet. I will now collect the answer sheets.

After you have collected an answer sheet from every candidate, say:

Seal the Section I booklet with the three seals provided. Peel each seal from the backing sheet and press it on the front cover so it just covers the area marked "PLACE SEAL HERE." Fold it over the open edge and press it to the back cover. Use one seal for each open edge. Be careful not to let the seals touch anything except the marked areas. . . .

Collect the sealed Section I exam booklets. After you have collected a sealed booklet from every candidate, say:

Open the package containing your Section II booklet. Turn to the back cover of the booklet, and read the instructions at the upper left. . . . Using a pen with black or dark-blue ink, print your identification information in the boxes. . . . Taking care not to tear the sheet beneath the cover, detach the perforation at the top. . . . Fold the flap down, and moisten and press the glue strip firmly along the entire lower edge. . . . Your identification information should now be covered and will not be known by those scoring your answers.

Read the instructions at the upper right of the back cover. . . . Print your initials in the three boxes provided. . . . Next, take two AP number labels from the center of your Candidate Pack and place them in the two boxed areas, one below the instructions and one to the left. If you don't have number labels left, copy your number from the front cover of your Candidate Pack into both boxed areas. . . . Item 6 provides you with the option of giving permission to Educational Testing Service to use your free-response materials for educational research and instructional purposes. Your name would not be used in connection with the free-response materials. Read the statement and answer either "yes" or "no." . . . Are there any questions?

Answer all questions regarding procedure. Then say:

If you will be taking another AP Examination, I will collect your Candidate Pack. You may keep your Candidate Pack if this is your last or only AP Examination.

Collect the Candidate Packs. Then say:

Read the directions for Section II on the back of your booklet. Look up when you have finished. . . . Are there any questions?

Answer all questions regarding procedure. Then say:

**You have 50 minutes to answer the two questions in Section II. It is suggested you divide your time equally between the two questions. You may answer either of the questions first. Be sure to write down in the Section II booklet the number of the question you are answering. At the end of 25 minutes you will be advised that you have 25 minutes left. The announcement is a reminder only; you are responsible for pacing yourself.**

Answer all questions regarding procedure. Then say:

**Open the Section II booklet.**

**AT THE MAY 17TH  
ADMINISTRATION ONLY, SAY:**

**Tear out the green insert in the center of the booklet. . . . Print your name, teacher, and school in the upper left-hand corner of the insert. I will be collecting this insert at the end of the administration. It will be returned to you at a later date by your teacher. You may use the insert for notes but write all your answers on the lined pages in the Section II booklet. . . .**

When you are ready to begin, note the time here \_\_\_\_\_. Then say:

**Begin work on Section II.**

You and your proctors should check to be sure all candidates are writing their answers in the Section II booklets.

After 25 minutes, say:

**Twenty-five minutes have passed. You have 25 minutes left to complete the two essays.**

After 25 minutes, say:

**Stop working. Close your Section II booklet and keep it closed on your desk. I will now collect your booklets. Remain in your seats, without talking, while the exam materials are being collected. You will receive your grade reports by mid-July and grades will be available by phone beginning July 1st.**

Collect the Section II booklets and the green inserts. Be sure you have one of each from every candidate. Check the back of each Section II booklet to make sure the candidate's AP number appears in the two boxes. The green inserts must be stored securely for no less than 48 hours (2 school days) after they are collected. After the 48-hour holding time, the inserts may be given to the appropriate AP teacher(s) for return to the students. (The alternate exam for late administrations does not have an insert.)

**When all examination materials have been collected, dismiss the candidates.**

Fill in the necessary information for the Psychology Examination on the S&R Form. Alternate exams should be recorded on their respective line on the S&R Form. Put the exam materials in locked storage until they are returned to ETS in one shipment after your school's last administration. See "Activities After the Exam."



**AREA 1 – COMPLETE THIS AREA AT EVERY EXAMINATION.**

**PLACE AP®  
NUMBER  
LABEL HERE.**

**A. SIGNATURE**  
To maintain the security of the exam and the validity of my AP grade, I will allow no one other than myself to see the multiple-choice questions and will seal the appropriate section when asked to do so. In addition, I am aware of and agree to the Program's policies and procedures as outlined in the 1999 AP Bulletin for Students and Parents.

Sign your name as it will appear on your college applications.

<b>B. YOUR AP NUMBER</b>		<b>C. NAME</b>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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**Q. THIS SECTION IS FOR THE SURVEY QUESTIONS IN THE CANDIDATE PACK. (DO NOT PUT RESPONSES TO EXAM QUESTIONS IN THIS SECTION.) BE SURE EACH MARK IS DARK AND COMPLETELY FILLS THE OVAL.**

- 1 (A) (B) (C) (D) (E)  
2 (A) (B) (C) (D) (E)  
3 (A) (B) (C) (D) (E)

- 4 (A) (B) (C) (D) (E)  
5 (A) (B) (C) (D) (E)

**DO NOT COMPLETE THIS SECTION UNLESS INSTRUCTED TO DO SO.**

**R. If this answer sheet is for the French Language, French Literature, German Language, Spanish Language, or Spanish Literature Examination, please answer the following questions. (Your responses will not affect your grade.)**

1. Have you lived or studied for one month or more in a country where the language of the exam you are now taking is spoken?  Yes  No
2. Do you regularly speak or hear the language at home?  Yes  No

**INDICATE YOUR ANSWERS TO THE EXAM QUESTIONS IN THIS SECTION. IF A QUESTION HAS ONLY FOUR ANSWER OPTIONS, DO NOT MARK OPTION (E). YOUR ANSWER SHEET WILL BE SCORED BY MACHINE. USE ONLY NO. 2 PENCILS TO MARK YOUR ANSWERS ON PAGES 2 AND 3 (ONE RESPONSE PER QUESTION). AFTER YOU HAVE DETERMINED YOUR RESPONSE, BE SURE TO COMPLETELY FILL IN THE OVAL CORRESPONDING TO THE NUMBER OF THE QUESTION YOU ARE ANSWERING. STRAY MARKS AND SMUDGES COULD BE READ AS ANSWERS, SO ERASE CAREFULLY AND COMPLETELY. ANY IMPROPER GRIDDING MAY AFFECT YOUR GRADE.**

- |                        |                        |                        |
|------------------------|------------------------|------------------------|
| 1 (A) (B) (C) (D) (E)  | 26 (A) (B) (C) (D) (E) | 51 (A) (B) (C) (D) (E) |
| 2 (A) (B) (C) (D) (E)  | 27 (A) (B) (C) (D) (E) | 52 (A) (B) (C) (D) (E) |
| 3 (A) (B) (C) (D) (E)  | 28 (A) (B) (C) (D) (E) | 53 (A) (B) (C) (D) (E) |
| 4 (A) (B) (C) (D) (E)  | 29 (A) (B) (C) (D) (E) | 54 (A) (B) (C) (D) (E) |
| 5 (A) (B) (C) (D) (E)  | 30 (A) (B) (C) (D) (E) | 55 (A) (B) (C) (D) (E) |
| 6 (A) (B) (C) (D) (E)  | 31 (A) (B) (C) (D) (E) | 56 (A) (B) (C) (D) (E) |
| 7 (A) (B) (C) (D) (E)  | 32 (A) (B) (C) (D) (E) | 57 (A) (B) (C) (D) (E) |
| 8 (A) (B) (C) (D) (E)  | 33 (A) (B) (C) (D) (E) | 58 (A) (B) (C) (D) (E) |
| 9 (A) (B) (C) (D) (E)  | 34 (A) (B) (C) (D) (E) | 59 (A) (B) (C) (D) (E) |
| 10 (A) (B) (C) (D) (E) | 35 (A) (B) (C) (D) (E) | 60 (A) (B) (C) (D) (E) |
| 11 (A) (B) (C) (D) (E) | 36 (A) (B) (C) (D) (E) | 61 (A) (B) (C) (D) (E) |
| 12 (A) (B) (C) (D) (E) | 37 (A) (B) (C) (D) (E) | 62 (A) (B) (C) (D) (E) |
| 13 (A) (B) (C) (D) (E) | 38 (A) (B) (C) (D) (E) | 63 (A) (B) (C) (D) (E) |
| 14 (A) (B) (C) (D) (E) | 39 (A) (B) (C) (D) (E) | 64 (A) (B) (C) (D) (E) |
| 15 (A) (B) (C) (D) (E) | 40 (A) (B) (C) (D) (E) | 65 (A) (B) (C) (D) (E) |
| 16 (A) (B) (C) (D) (E) | 41 (A) (B) (C) (D) (E) | 66 (A) (B) (C) (D) (E) |
| 17 (A) (B) (C) (D) (E) | 42 (A) (B) (C) (D) (E) | 67 (A) (B) (C) (D) (E) |
| 18 (A) (B) (C) (D) (E) | 43 (A) (B) (C) (D) (E) | 68 (A) (B) (C) (D) (E) |
| 19 (A) (B) (C) (D) (E) | 44 (A) (B) (C) (D) (E) | 69 (A) (B) (C) (D) (E) |
| 20 (A) (B) (C) (D) (E) | 45 (A) (B) (C) (D) (E) | 70 (A) (B) (C) (D) (E) |
| 21 (A) (B) (C) (D) (E) | 46 (A) (B) (C) (D) (E) | 71 (A) (B) (C) (D) (E) |
| 22 (A) (B) (C) (D) (E) | 47 (A) (B) (C) (D) (E) | 72 (A) (B) (C) (D) (E) |
| 23 (A) (B) (C) (D) (E) | 48 (A) (B) (C) (D) (E) | 73 (A) (B) (C) (D) (E) |
| 24 (A) (B) (C) (D) (E) | 49 (A) (B) (C) (D) (E) | 74 (A) (B) (C) (D) (E) |
| 25 (A) (B) (C) (D) (E) | 50 (A) (B) (C) (D) (E) | 75 (A) (B) (C) (D) (E) |

FOR QUESTIONS 76-151, SEE PAGE 3.

**DO NOT WRITE IN THIS AREA.**



BE SURE EACH MARK IS DARK AND COMPLETELY FILLS THE OVAL. IF A QUESTION HAS ONLY FOUR ANSWER OPTIONS, DO NOT MARK OPTION E.

- |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 76  | (A) | (B) | (C) | (D) | (E) | 101 | (A) | (B) | (C) | (D) | (E) | 126 | (A) | (B) | (C) | (D) | (E) |
| 77  | (A) | (B) | (C) | (D) | (E) | 102 | (A) | (B) | (C) | (D) | (E) | 127 | (A) | (B) | (C) | (D) | (E) |
| 78  | (A) | (B) | (C) | (D) | (E) | 103 | (A) | (B) | (C) | (D) | (E) | 128 | (A) | (B) | (C) | (D) | (E) |
| 79  | (A) | (B) | (C) | (D) | (E) | 104 | (A) | (B) | (C) | (D) | (E) | 129 | (A) | (B) | (C) | (D) | (E) |
| 80  | (A) | (B) | (C) | (D) | (E) | 105 | (A) | (B) | (C) | (D) | (E) | 130 | (A) | (B) | (C) | (D) | (E) |
| 81  | (A) | (B) | (C) | (D) | (E) | 106 | (A) | (B) | (C) | (D) | (E) | 131 | (A) | (B) | (C) | (D) | (E) |
| 82  | (A) | (B) | (C) | (D) | (E) | 107 | (A) | (B) | (C) | (D) | (E) | 132 | (A) | (B) | (C) | (D) | (E) |
| 83  | (A) | (B) | (C) | (D) | (E) | 108 | (A) | (B) | (C) | (D) | (E) | 133 | (A) | (B) | (C) | (D) | (E) |
| 84  | (A) | (B) | (C) | (D) | (E) | 109 | (A) | (B) | (C) | (D) | (E) | 134 | (A) | (B) | (C) | (D) | (E) |
| 85  | (A) | (B) | (C) | (D) | (E) | 110 | (A) | (B) | (C) | (D) | (E) | 135 | (A) | (B) | (C) | (D) | (E) |
| 86  | (A) | (B) | (C) | (D) | (E) | 111 | (A) | (B) | (C) | (D) | (E) | 136 | (A) | (B) | (C) | (D) | (E) |
| 87  | (A) | (B) | (C) | (D) | (E) | 112 | (A) | (B) | (C) | (D) | (E) | 137 | (A) | (B) | (C) | (D) | (E) |
| 88  | (A) | (B) | (C) | (D) | (E) | 113 | (A) | (B) | (C) | (D) | (E) | 138 | (A) | (B) | (C) | (D) | (E) |
| 89  | (A) | (B) | (C) | (D) | (E) | 114 | (A) | (B) | (C) | (D) | (E) | 139 | (A) | (B) | (C) | (D) | (E) |
| 90  | (A) | (B) | (C) | (D) | (E) | 115 | (A) | (B) | (C) | (D) | (E) | 140 | (A) | (B) | (C) | (D) | (E) |
| 91  | (A) | (B) | (C) | (D) | (E) | 116 | (A) | (B) | (C) | (D) | (E) | 141 | (A) | (B) | (C) | (D) | (E) |
| 92  | (A) | (B) | (C) | (D) | (E) | 117 | (A) | (B) | (C) | (D) | (E) | 142 | (A) | (B) | (C) | (D) | (E) |
| 93  | (A) | (B) | (C) | (D) | (E) | 118 | (A) | (B) | (C) | (D) | (E) | 143 | (A) | (B) | (C) | (D) | (E) |
| 94  | (A) | (B) | (C) | (D) | (E) | 119 | (A) | (B) | (C) | (D) | (E) | 144 | (A) | (B) | (C) | (D) | (E) |
| 95  | (A) | (B) | (C) | (D) | (E) | 120 | (A) | (B) | (C) | (D) | (E) | 145 | (A) | (B) | (C) | (D) | (E) |
| 96  | (A) | (B) | (C) | (D) | (E) | 121 | (A) | (B) | (C) | (D) | (E) | 146 | (A) | (B) | (C) | (D) | (E) |
| 97  | (A) | (B) | (C) | (D) | (E) | 122 | (A) | (B) | (C) | (D) | (E) | 147 | (A) | (B) | (C) | (D) | (E) |
| 98  | (A) | (B) | (C) | (D) | (E) | 123 | (A) | (B) | (C) | (D) | (E) | 148 | (A) | (B) | (C) | (D) | (E) |
| 99  | (A) | (B) | (C) | (D) | (E) | 124 | (A) | (B) | (C) | (D) | (E) | 149 | (A) | (B) | (C) | (D) | (E) |
| 100 | (A) | (B) | (C) | (D) | (E) | 125 | (A) | (B) | (C) | (D) | (E) | 150 | (A) | (B) | (C) | (D) | (E) |
|     |     |     |     |     |     |     |     |     |     |     |     | 151 | (A) | (B) | (C) | (D) | (E) |

ETS USE ONLY			
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DO NOT WRITE IN THIS AREA.



## PSYCHOLOGY

Two hours are allotted for this examination: 1 hour and 10 minutes for Section I, which consists of multiple-choice questions; and 50 minutes for Section II, which consists of essay questions. Section I is printed in this examination booklet; Section II essay questions are printed in a separate booklet.

### SECTION I

Time — 1 hour and 10 minutes

Number of questions — 100

Percent of total grade —  $66\frac{2}{3}$

**This examination contains 100 multiple-choice questions. Therefore, please be careful to fill in only the ovals that are preceded by numbers 1 through 100 on your answer sheet.**

#### General Instructions

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE INSTRUCTED TO DO SO.

INDICATE ALL YOUR ANSWERS TO QUESTIONS IN SECTION I ON THE SEPARATE ANSWER SHEET. No credit will be given for anything written in this examination booklet, but you may use the booklet for notes or scratchwork. After you have decided which of the suggested answers is best, COMPLETELY fill in the corresponding oval on the answer sheet. Give only one answer to each question. If you change an answer, be sure that the previous mark is erased completely.

#### Example:

Chicago is a

- (A) state
- (B) city
- (C) country
- (D) continent
- (E) village

#### Sample Answer

(A) ● (C) (D) (E)

Many candidates wonder whether or not to guess the answers to questions about which they are not certain. In this section of the examination, as a correction for haphazard guessing, one-fourth of the number of questions you answer incorrectly will be subtracted from the number of questions you answer correctly. It is improbable, therefore, that mere guessing will improve your score significantly; it may even lower your score, and it does take time. If, however, you are not sure of the best answer but have some knowledge of the question and are able to eliminate one or more of the answer choices as wrong, your chance of getting the right answer is improved, and it may be to your advantage to answer such a question.

Use your time effectively, working as rapidly as you can without losing accuracy. Do not spend too much time on questions that are too difficult. Go on to other questions and come back to the difficult ones later if you have time. It is not expected that everyone will be able to answer all the multiple-choice questions.

## PSYCHOLOGY

## SECTION I

Time—1 hour and 10 minutes

100 Questions

**Directions:** Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case and then fill in the corresponding oval on the answer sheet.

- An individual experiencing a low blood-glucose level would be best advised to do which of the following?
  - Take a nap
  - Eat a snack
  - Drink a glass of water
  - Drink a diet soda
  - Get some exercise
- For several weeks—ever since she did not receive a raise that was given to several colleagues—Enid has lacked energy, has been unable to go to work, and has expected bad things to happen every day. Of the following, she is most likely experiencing
  - posttraumatic stress
  - mania
  - hypochondria
  - depression
  - fugue
- Phobic and panic disturbances are examples of which of the following kinds of disorder?
  - Personality
  - Schizophrenic
  - Anxiety
  - Somatoform
  - Dissociative
- In an experiment, which of the following variables refers to the outcome that is measured by the experimenter?
  - Independent
  - Dependent
  - Control
  - Random
  - Stimulus
- In Sigmund Freud's view, the role of the ego is to
  - make the individual feel superior to others
  - make the individual feel inferior to others
  - mediate among the id, the superego, and reality
  - serve the demands of the unconscious
  - serve the demands of the superego
- A hostile person with a type A personality is most at risk for developing which of the following?
  - Phobias
  - Heart disease
  - Bulimia nervosa
  - Multiple personality
  - Antisocial personality
- One major objection to the early Skinnerian approach to psychology is that it
  - did not take into account internal thoughts and feelings
  - did not take into account overt physical behaviors
  - did not take into account accumulated experiences
  - focused primarily on childhood experiences
  - focused primarily on the unconscious
- The coiled tube in the inner ear that contains the auditory receptors is called the
  - semicircular canal
  - ossicle
  - pinna
  - cochlea
  - oval window

9. One of the consistent research findings in the area of facial expressions and emotion is the
- (A) universality of facial expressions across cultures
  - (B) vast differences in facial expressions between males and females
  - (C) ease with which people can learn to change their facial expressions under differing circumstances
  - (D) way children's facial expressions differ from adults'
  - (E) way in which individuals' facial expressions change as they get older
10. Which of the following parts of the brain is most active in decision-making?
- (A) Reticular formation
  - (B) Corpus callosum
  - (C) Hypothalamus
  - (D) Cerebral cortex
  - (E) Pituitary gland
11. Psychotic disorders frequently involve perceptions of nonexistent sensory stimulation, such as voices. Symptoms such as these are called
- (A) delusions
  - (B) paraphilias
  - (C) hallucinations
  - (D) paranormal images
  - (E) psychic phenomena
12. Punishment is most effective in eliminating undesired behavior when the
- (A) behavior is complex
  - (B) behavior was very recently acquired
  - (C) punishment is delivered soon after the behavior
  - (D) punishment is delivered by someone with authority
  - (E) punishment is both mental and physical
13. According to the information-processing view of memory, the first stage in memory processing involves
- (A) retrieval
  - (B) storage
  - (C) rehearsal
  - (D) encoding
  - (E) transfer
14. John suffered a head injury in an accident five years ago. He now has clear memories of events that occurred before the accident, but he has great difficulty remembering any of the experiences he has had since the accident. John's symptoms describe
- (A) anterograde amnesia
  - (B) Broca's aphasia
  - (C) cue-dependent forgetting
  - (D) selective amnesia
  - (E) retroactive interference
15. Drive reduction as a motivational concept is best exemplified by which of the following?
- (A) The sweet taste of chocolate
  - (B) Electric stimulation to the pleasure center of the brain
  - (C) A monkey using its tail as a fifth limb to climb higher in a tree
  - (D) The injection of heroin by an addict to avoid withdrawal symptoms
  - (E) The enjoyment of a frightening movie
16. Drawing a random sample of people from a town for an interview study of social attitudes ensures that
- (A) each person in town has the same probability of being chosen for the study
  - (B) an equal number of males and females are selected for interviews
  - (C) the study includes at least some respondents from every social class in town
  - (D) the study will uncover widely differing social attitudes among the respondents
  - (E) the sample will be large enough even though some people may refuse to be interviewed

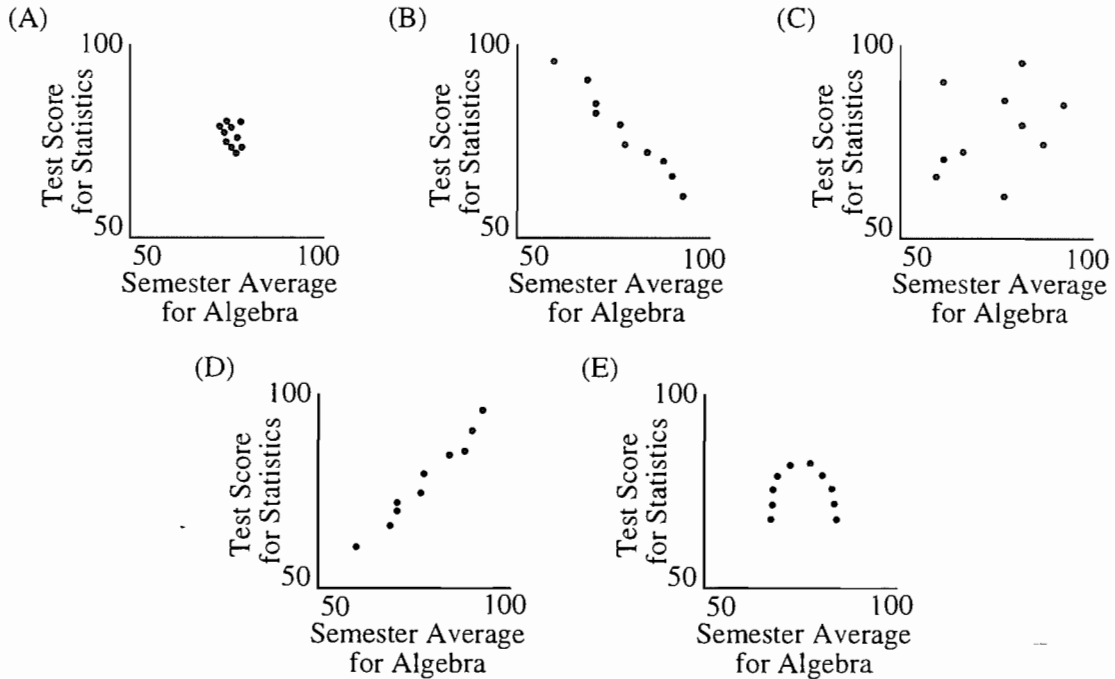
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## STUDENT SCORE DATA

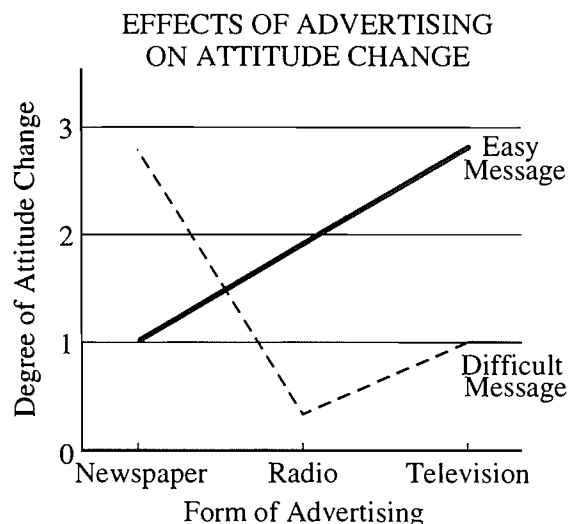
<u>Student</u>	<u>Test Score for Statistics</u>	<u>Semester Average for Algebra</u>
A	95	92
B	90	89
C	85	87
D	84	83
E	79	77
F	74	76
G	72	70
H	70	70
I	66	68
J	61	59

17. Which of the following scattergrams represents the data above?



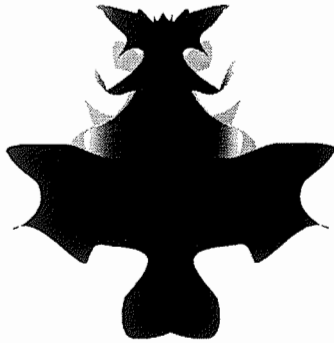
18. Climbing an irregular set of stairs is more difficult for an individual who wears a patch over one eye primarily because
- (A) some depth perception is lost
  - (B) half of the visual field is missing
  - (C) the ability to perceive interposition is lost
  - (D) the patch disrupts the functioning of the vestibular system
  - (E) the patch alters the ability of the open eye to compensate
19. Gustatory receptors are sensitive to all of the following taste qualities EXCEPT
- (A) bitter
  - (B) sweet
  - (C) salty
  - (D) spicy
  - (E) sour
20. When a list of words is learned in order, the words most likely to be forgotten are those that are
- (A) at the beginning of the list
  - (B) at the end of the list
  - (C) in the middle of the list
  - (D) hardest to pronounce
  - (E) easiest to spell
21. The rules of grammar are rules of
- (A) phonemes
  - (B) morphemes
  - (C) syntax
  - (D) semantics
  - (E) pragmatics
22. Psychologists who emphasize the importance of personality traits are most often criticized for
- (A) being naïve and overly optimistic
  - (B) being subjective in interpreting unverifiable phenomena
  - (C) overestimating the number of basic traits
  - (D) underestimating the role of emotions
  - (E) underestimating the variability of behavior from situation to situation
23. A genetically programmed action pattern is the ethologist's definition of
- (A) habit
  - (B) instinct
  - (C) adaptation
  - (D) altruism
  - (E) releasing mechanism
24. Hypnosis is best described as a state that
- (A) gives the hypnotist complete control over the thoughts and emotions of the hypnotized individual
  - (B) induces heightened suggestibility in the hypnotized individual
  - (C) is similar to an obsessive-compulsive personality disorder
  - (D) is similar to the condition produced by excessive alcohol consumption
  - (E) is similar to the REM stage of sleep

25. According to the Stanford-Binet formula for an intelligence quotient (IQ), the IQ of a ten-year-old child with a mental age of eight and a half years is
- (A) 85  
(B) 95  
(C) 100  
(D) 105  
(E) 115
26. The precipitous decline of the inpatient populations of state and county mental hospitals since the 1950's can be attributed to which of the following?
- I. Declining incidence of severe mental illnesses  
II. A policy of deinstitutionalization  
III. New drug therapies
- (A) I only  
(B) II only  
(C) III only  
(D) II and III only  
(E) I, II, and III
27. According to research on attraction, people are most likely to be attracted to others who are
- (A) very different from themselves  
(B) similar to themselves in many ways  
(C) barely known or complete strangers  
(D) more physically active than they themselves are  
(E) less physically attractive than they themselves are
28. An individual's ability to remember the day he or she first swam the length of a swimming pool is most clearly an example of which of the following kinds of memory?
- (A) Semantic  
(B) Flashbulb  
(C) Procedural  
(D) Priming  
(E) Episodic
29. Hans Selye's general adaptation syndrome is an attempt to explain
- (A) personality traits  
(B) artificial intelligence  
(C) memory organization  
(D) organic retardation  
(E) reactions to stress
30. The result of the evolutionary process that preserves traits that enhance the adaptation of an organism and suppresses traits that do not is called
- (A) habituation  
(B) accommodation  
(C) natural selection  
(D) eugenics  
(E) species assimilation



31. According to the graph above, the greatest degree of attitude change is likely to be produced by which of the following forms of advertising?
- (A) Radio only  
(B) Newspaper only  
(C) Television only  
(D) Easy messages in the newspaper and difficult messages on television  
(E) Easy messages on television and difficult messages in the newspaper

32. A baby looks under the sofa for a ball that has just rolled underneath it. According to Jean Piaget, the baby's action shows development of
- (A) conservation of mass
  - (B) reversibility
  - (C) object permanence
  - (D) logical thinking
  - (E) metacognition



33. Figures such as the one above are used in which of the following kinds of test?
- (A) Verbal intelligence
  - (B) Nonverbal intelligence
  - (C) Self-report personality
  - (D) Projective personality
  - (E) Cognitive reasoning
34. Intense artificial light is most successfully used as therapy for
- (A) disorganized (hebephrenic) schizophrenia
  - (B) seasonal affective disorder
  - (C) essential hypertension
  - (D) bipolar disorder
  - (E) panic disorder
35. Which of the following situations poses an approach-approach conflict for a person who listens only to classical music?
- (A) Having to sit through a good friend's rehearsal for a violin recital
  - (B) Attending a classical music event
  - (C) Being offered a cash bonus for ushering at an all-Beethoven concert
  - (D) Having to choose between an all-Beethoven concert and a punk-rock concert
  - (E) Choosing to study with one of two friends, both of whom listen to classical music while studying
36. In the James-Lange theory of emotion, which of the following immediately precedes an emotion?
- (A) Observation of the external stimulus
  - (B) Recollection of similar past experiences
  - (C) Experience of physiological changes
  - (D) Appraisal of cognitive factors
  - (E) Initiation of a fixed-action pattern
37. Which of the following research methods is being used if the same subjects are tested at two, four, and six years of age?
- (A) Cross-cultural
  - (B) Longitudinal
  - (C) Cross-sectional
  - (D) Correlational
  - (E) Projective

**GO ON TO THE NEXT PAGE** 

38. Which of the following is a circadian rhythm?
- (A) The ebb and flow of an individual's emotions during a 24-hour period
  - (B) Jet lag experienced after an airline flight from Los Angeles to Tokyo
  - (C) A cycle of biological functioning that lasts about 25 hours
  - (D) The series of five stages that people go through during a normal night's sleep
  - (E) The systematic alternation between alpha waves and delta waves during the different sleep stages
39. According to cognitive dissonance theory, human beings are motivated to
- (A) respond to an inborn need to pass their genes to the next generation
  - (B) maintain an optimal level of arousal
  - (C) satisfy basic needs such as hunger before proceeding to higher needs such as self-actualization
  - (D) reduce tensions produced by inconsistent thoughts
  - (E) satisfy needs resulting from tissue deficits
40. An important difference between humanistic and psychoanalytic approaches is that humanistic psychologists believe in the importance of
- (A) learning
  - (B) free will
  - (C) determinism
  - (D) biological instincts
  - (E) unconscious processes
42. The more people present at a scene, the less likely it is that anyone will help a person in need. This phenomenon is a manifestation of
- (A) diffusion of responsibility
  - (B) social facilitation
  - (C) situational ambiguity
  - (D) a social norm
  - (E) reciprocity
43. One suspected cause of schizophrenia is the abnormal increase of which of the following neurotransmitters in the brain?
- (A) Acetylcholine
  - (B) Somatotropin
  - (C) Dopamine
  - (D) Norepinephrine
  - (E) Serotonin
44. Studies of learning have shown that animals develop an aversion for tastes associated with
- (A) electric shock
  - (B) extinguished associations
  - (C) sickness
  - (D) novel stimuli
  - (E) starvation
45. An individual's fear of dogs that is lost as the individual is exposed to dogs in nonthreatening situations is referred to by behaviorists as a fear that has been
- (A) satiated
  - (B) suppressed
  - (C) repressed
  - (D) extinguished
  - (E) punished

Item 41 was not scored.

46. In psychology, Gestalt principles are used to explain
- (A) statistical probabilities
  - (B) somatic behavioral disorders
  - (C) perceptual organization
  - (D) stimulus-detection thresholds
  - (E) altered states of consciousness
47. Sabrina plays on a rugby team and collects antique dolls. Peter is on a football team and loves to cook. Both Sabrina and Peter demonstrate a high degree of
- (A) sex-role stereotyping
  - (B) sex-role confusion
  - (C) gender constancy
  - (D) androgyny
  - (E) sex-role identity
48. A student who obtained a percentile rank of 75 on an achievement test is best characterized as having
- (A) ranked 75th from the top in a group of 100 test takers
  - (B) answered 75% of the test questions correctly
  - (C) scored higher than 75% of the test takers
  - (D) scored 75% higher than the average test taker
  - (E) scored 75% of the highest score
49. The general function of the bones in the middle ear is to
- (A) convert the incoming sound from pounds per square inch to decibels
  - (B) protect the cochlea
  - (C) regulate changes in the air pressure of the inner ear
  - (D) transfer sound information from the tympanic membrane to the oval window
  - (E) provide information to the vestibular system
50. Which of the following regularities in behavior can most likely be accounted for by the existence of a group norm?
- (A) Students tend to use less profanity with adults than they do with their peers.
  - (B) Most people sleep at least six hours a night.
  - (C) The average annual income of industrial workers in 1972 was \$7,250.
  - (D) Male infants have a higher infant mortality rate than female infants.
  - (E) People perform well-learned behaviors better in the presence of others than when alone.
51. A brain tumor that results in obesity would most likely be located in the
- (A) left frontal lobe
  - (B) base of the brain stem
  - (C) area of the hypothalamus
  - (D) reticular activating system
  - (E) somatosensory cortex
52. Which of the following personality disorders is characterized by behavior that includes dishonesty, repeated trouble with authority figures, and an absence of remorse for these types of conduct?
- (A) Antisocial
  - (B) Histrionic
  - (C) Passive-aggressive
  - (D) Narcissistic
  - (E) Borderline

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53. The most distinctive characteristic of the experimental method is that it
- (A) studies a few people in great depth
  - (B) studies subjects in their natural environment
  - (C) is an efficient way to discover how people feel
  - (D) seeks to establish cause-effect relationships
  - (E) provides a chronological basis for reaching conclusions
54. The performance of the group on which an IQ test is standardized sets the
- (A) method of administration most suitable for the test
  - (B) extent to which IQ is determined by environment
  - (C) criteria for the diagnostic significance of intelligence
  - (D) degree of validity of the IQ test
  - (E) norms against which the performance of later test takers can be evaluated
55. Processing every possible combination of the letters DBRI to arrive at the word BIRD is an example of the use of
- (A) an algorithm
  - (B) an expert system
  - (C) an inference rule
  - (D) a hypothesis
  - (E) a heuristic
56. In experimental psychology, a significant difference refers to a
- (A) difference not likely due to chance
  - (B) difference not likely due to faulty design
  - (C) result that indicates a correlation equal to 1.0
  - (D) result that departs from previous findings
  - (E) result that proves a new theory
57. Although Paul seems bright and capable to his parents and friends, he has been failing in school. Paul agrees to speak with a psychologist, who suggests that his problems stem from internal processes such as unrealistic expectations and negative thinking. The psychologist's view is typical of which of the following models of behavior?
- (A) Psychoanalytic
  - (B) Humanistic
  - (C) Cognitive
  - (D) Sociobiological
  - (E) Behavioral
58. Assume that R represents a dominant gene in rats for normal running and that r represents a recessive gene in rats for an abnormal gait called waltzing. Mating a female Rr rat with a male RR rat will produce offspring that are
- (A) 50% runners and 50% waltzers
  - (B) 25% runners and 75% waltzers
  - (C) 75% runners and 25% waltzers
  - (D) 100% waltzers
  - (E) 100% runners
59. Mary Ainsworth's Strange Situation paradigm is typically used to test young children's
- (A) ego strength
  - (B) intelligence
  - (C) reaction time
  - (D) attachment
  - (E) incidental learning

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60. Taking a painkiller to relieve a toothache is behavior learned through which of the following processes?
- (A) Shaping
  - (B) Punishment
  - (C) Positive reinforcement
  - (D) Negative reinforcement
  - (E) Omission training
61. Montgomery prepares his résumé carelessly and arrives late for his job interview. He is rejected by the prospective employer. Montgomery concludes that "It's all a matter of dumb luck, anyway." Montgomery's judgment of his situation most clearly reflects
- (A) delay of gratification
  - (B) the mechanism of reaction formation
  - (C) unconscious inference
  - (D) fixation and regression
  - (E) external locus of control
62. Learned helplessness is most likely to result when
- (A) responses have no effect on the environment
  - (B) young organisms fail to imprint at the critical period
  - (C) a response is reinforced independently
  - (D) reinforcement occurs on an intermittent schedule
  - (E) an organism receives negative reinforcement
63. According to Elisabeth Kübler-Ross, one of five stages frequently experienced by people facing death is
- (A) mistrust
  - (B) regression
  - (C) bargaining
  - (D) projection
  - (E) sublimation
64. In Stanley Milgram's obedience experiments, subjects were LEAST likely to deliver maximum levels of shock when the
- (A) experiment was conducted at a prestigious institution
  - (B) "learner" screamed loudly in pain
  - (C) experimenter told hesitant subjects, "You have no choice, you must go on"
  - (D) "learner" said that he had a heart condition
  - (E) subjects observed other subjects who refused to obey the experimenter's orders
65. In rational-emotive therapy, the therapist helps clients by
- (A) using unconditional positive regard
  - (B) establishing anxiety hierarchies to be used in systematic desensitization
  - (C) promoting transference
  - (D) confronting clients with their faulty logic
  - (E) providing an environment in which new behaviors and emotions can be rehearsed
66. When participants in dichotic listening experiments are repeating aloud a message presented in one ear, they are most likely to notice information on the unattended channel if that channel
- (A) switches from one language to another
  - (B) switches to a nonlanguage
  - (C) mentions the participant's name
  - (D) presents information similar to that on the attended channel
  - (E) presents information in a foreign language

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67. Metacognition refers to
- (A) amnesia
  - (B) mental retardation
  - (C) artificial intelligence
  - (D) thinking without theory
  - (E) thinking about thinking
68. A double-blind control is essential for which of the following?
- (A) A study comparing the IQ test scores of children from different educational systems
  - (B) A study of relationships among family members
  - (C) An experiment to determine the effect of a food reward on the bar-pressing rate of a rat
  - (D) Assessment of a treatment designed to reduce schizophrenic symptoms
  - (E) A survey of drug use among teenagers
69. Which of the following findings would support an interpretation of aggression as catharsis?
- (A) Societies that value aggressive sports are generally less aggressive than societies that do not value aggressive sports.
  - (B) On average, levels of aggression are about equal across all societies.
  - (C) Aggressiveness in societies correlates highly with the average annual temperature.
  - (D) Societies in which media content is particularly aggressive are more aggressive than societies that have less violent media content.
  - (E) In most societies, aggression among individuals waxes and wanes with age.
70. For most people, speech functions are primarily localized in the
- (A) right cerebral hemisphere
  - (B) left cerebral hemisphere
  - (C) occipital lobe
  - (D) corpus callosum
  - (E) cerebellum
71. People who have experienced severe damage to the frontal lobe of the brain seldom regain their ability to
- (A) make and carry out plans
  - (B) recognize visual patterns
  - (C) process auditory information
  - (D) process olfactory information
  - (E) integrate their multiple personalities
72. A test that is labeled an achievement test is most likely to be given to
- (A) predict an individual's ability to succeed in a particular job
  - (B) allow a student to be exempted from a college course
  - (C) assess the mental age of a gifted eight-year-old
  - (D) determine whether a person is an extrovert or an introvert
  - (E) investigate an individual's cognitive style
73. The phenomenon of transference is a recognized component of which of the following therapeutic treatments?
- (A) Flooding
  - (B) Systematic desensitization
  - (C) Milieu therapy
  - (D) Psychoanalysis
  - (E) Family therapy
74. Contemporary definitions of abnormal behavior typically characterize such behavior as all of the following EXCEPT
- (A) atypical
  - (B) maladaptive
  - (C) inappropriate
  - (D) due to inappropriate child-rearing practices
  - (E) disturbing to the individual exhibiting the behavior

75. A nine-year-old girl first learning about her capabilities on the playground and in the classroom would be in which of Erikson's stages of development?
- (A) Industry vs. inferiority
  - (B) Identity vs. role confusion
  - (C) Autonomy vs. shame and doubt
  - (D) Integrity vs. despair
  - (E) Trust vs. mistrust
76. Which of the following therapeutic approaches is most likely to be criticized because it does not treat the underlying cause of the disorder?
- (A) Cognitive
  - (B) Behavioral
  - (C) Biological
  - (D) Psychoanalytic
  - (E) Phenomenological
77. Which of the following will NOT increase behavioral and mental activity?
- (A) Cocaine
  - (B) Caffeine
  - (C) Benzedrine
  - (D) Amphetamines
  - (E) Barbiturates
78. Behavior therapists emphasize which of the following in their treatment of clients?
- (A) Freedom of choice about the future
  - (B) The uncovering of unconscious defense mechanisms
  - (C) Responses that have been reinforced in the past
  - (D) Early childhood conflicts
  - (E) Repressed aggressive impulses
79. Which of the following is a brain-imaging technique that produces the most detailed picture of brain structure?
- (A) Electroencephalography (EEG)
  - (B) Magnetic resonance imaging (MRI)
  - (C) Positron emission tomography (PET)
  - (D) Computerized axial tomography (CAT)
  - (E) Electromyography (EMG)
80. Which of the following represent, respectively, superordinate and subordinate categories for the basic-level category of "automobile"?
- (A) Vehicle, transportation
  - (B) Vehicle, convertible
  - (C) Station wagon, minivan
  - (D) Sedan, compact car
  - (E) Foreign car, domestic car
81. Carol Gilligan's criticism of Lawrence Kohlberg's developmental theory is based on the argument that Kohlberg's
- (A) work has been invalidated by changes in the structure of families in the United States
  - (B) stages are too limited in their critical-period parameters
  - (C) theory underestimates the capabilities of infants and children
  - (D) stages do not apply equally well to all racial and ethnic groups
  - (E) theory fails to account sufficiently for differences between males and females

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82. Cognitive theorists emphasize the
- (A) powerful unconscious impulses that motivate behavior
  - (B) formation and modification of schemas
  - (C) impact of rewards and punishments
  - (D) individual's desire to become self-actualized
  - (E) social norms that determine expected behavior
83. Which of the following areas of the body has the largest number of sensory neurons?
- (A) Back
  - (B) Foot
  - (C) Ear
  - (D) Lips
  - (E) Wrist
84. Stimulation of portions of the left temporal lobe of the brain during surgery will cause the patient to
- (A) see lights
  - (B) lose the sense of smell
  - (C) jerk the left arm
  - (D) extend the tongue
  - (E) hear sounds
85. Noam Chomsky's view of language proposes that
- (A) there is an inherent language acquisition device
  - (B) thinking is merely subvocal language
  - (C) different levels of language ability are hereditarily determined
  - (D) language acquisition can be explained by social modeling
  - (E) language is learned principally through verbal reinforcement
86. The role of the parasympathetic division of the autonomic nervous system is to
- (A) facilitate the body's fight-or-flight response
  - (B) prepare the body to cope with stress
  - (C) promote rapid cognitive processing
  - (D) prompt the body to use its resources in responding to environmental stimuli
  - (E) establish homeostasis after a fight-or-flight response
87. A man who experiences sudden blindness on witnessing the death of his wife is probably suffering from a
- (A) type of paraphilia
  - (B) psychosis
  - (C) multiple personality disorder
  - (D) panic disorder
  - (E) conversion disorder
88. Which of the following methods is used in studies designed to determine the primary components of intelligence?
- (A) Test-retest
  - (B) Alternate forms
  - (C) Random sampling
  - (D) Factor analysis
  - (E) Standardization



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89. In operant conditioning, the concept of contingency is exemplified by an "if A, then B" relationship in which A and B, respectively, represent
- (A) stimulus, response
  - (B) response, reinforcement
  - (C) stimulus, reinforcement
  - (D) response, stimulus
  - (E) stimulus, stimulus
90. A normally functioning 65-year-old who cannot solve abstract logic puzzles as quickly as he did when he was younger is experiencing a
- (A) phenomenon that is uncommon for people of his age
  - (B) phenomenon predicted by Erik Erikson as part of the eight stages of psychosocial development
  - (C) decrease in his crystallized intelligence
  - (D) decrease in his fluid intelligence
  - (E) difficulty with concrete operational thinking
91. When a pair of lights flashing in quick succession seems to an observer to be one light moving from place to place, the effect is referred to as
- (A) stroboscopic movement
  - (B) the phi phenomenon
  - (C) autokinetic motion
  - (D) binocular vision
  - (E) induced displacement
92. Which of the following occurs when a neuron is stimulated to its threshold?
- (A) The movement of sodium and potassium ions across the membrane creates an action potential.
  - (B) The neuron hyperpolarizes.
  - (C) Neurotransmitters are released from the dendrites.
  - (D) The absolute refractory period of the neuron prevents it from responding.
  - (E) The neuron's equilibrium potential is reached.
93. Wolfgang Köhler considered a chimpanzee's sudden solving of a problem evidence of
- (A) instinct
  - (B) modeling
  - (C) learning set
  - (D) insight
  - (E) spontaneous recovery
94. Which of the following is the most appropriate criterion for evaluating the predictive validity of an intelligence test?
- (A) Intelligence quotient
  - (B) Mental age
  - (C) Chronological age
  - (D) Scholastic aptitude
  - (E) School grades

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95. REM sleep, generally an “active” state of sleep, is accompanied by which of the following paradoxical characteristics?
- (A) Slowed heart rate
  - (B) Slowed respiration rate
  - (C) Lowered blood pressure
  - (D) Lowered muscle tone
  - (E) Reduced eye movements
96. A teacher who is mistakenly informed that a student is learning disabled begins to treat that student differently from others. The teacher does not call on the student in class or help her with challenging material. The student’s grades gradually decline. This result is an example of which of the following?
- (A) Reactance
  - (B) Social loafing
  - (C) Actor-observer bias
  - (D) Self-fulfilling prophecy
  - (E) Fundamental attribution error
97. When struck by light energy, cones and rods in the retina generate neural signals that then activate the
- (A) parietal lobe
  - (B) ganglion cells
  - (C) bipolar cells
  - (D) ciliary muscle
  - (E) optic nerve fibers
98. The first area of psychology to be studied as a science is known as
- (A) psychoanalysis
  - (B) phrenology
  - (C) classical conditioning
  - (D) mesmerism
  - (E) psychophysics
- Item 99 was not scored.
100. The thalamus processes information for all of the following senses EXCEPT
- (A) smell
  - (B) hearing
  - (C) taste
  - (D) vision
  - (E) touch

END OF SECTION I

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY  
CHECK YOUR WORK ON THIS SECTION.

DO NOT GO ON TO SECTION II UNTIL YOU ARE TOLD TO DO SO.

PSYCHOLOGY

SECTION II

Time — 50 minutes

Percent of total grade— $33\frac{1}{3}$

Section II contains two questions, each of which counts one-half of the total essay section score. You should answer both questions. Divide your time about equally between the two questions. If you finish the examination in less than the time allotted, you may go back and work on either essay question.

You should write your answers with a pen, preferably one with black or dark blue ink. Be sure to write CLEARLY and LEGIBLY. Cross out any errors you make.

The questions for Section II are printed in the green Section II insert. Use the green insert to organize your answers and for scratchwork, but write your answers in the pink booklet. Number each answer as the question is numbered in the examination. Do not skip lines. Begin each answer on a new page in the pink booklet.

PSYCHOLOGY

SECTION II

Time—50 minutes

Percent of total grade— $33\frac{1}{3}$

**Directions:** You have 50 minutes to answer **BOTH** of the following questions. It is not enough to answer a question by merely listing facts. You should present a cogent argument based on your critical analysis of the question posed.

1. A. Describe the role of each of the following mechanisms in determining an individual's eating habits and body weight.

Biological Mechanisms

Body or brain chemistry  
Brain structure  
Genetics

Learning Mechanisms

Reinforcement  
Modeling  
Cultural factors

- B. Select *one* biological and *one* learning mechanism and discuss the implications of each for weight management.

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2. In a study, researchers use a photograph taken in a public park to examine how people perceive, learn, and remember information. In the photograph, a woman is standing near a man who is seated on a park bench. The woman appears to be shouting at the man.

Participants in the study are exposed to the photograph for ten seconds and then are shown, each for ten seconds, several other photographs of people interacting. When all the photographs have been shown, the participants are asked about what they saw in the “public park” photograph. A significant number of participants describe the man as being the aggressor in an apparent disagreement with the woman.

Describe how each of the following concepts helps explain the perception of these participants. Be sure to begin by defining each concept in psychological terms.

- schema
- retroactive interference
- representativeness heuristic
- confirmation bias
- framing

END OF EXAMINATION

This chapter includes the answer key to the multiple-choice questions and the scoring guides that the faculty consultants used to grade the 1999 essays. It also contains an overview of the exam and the free-response questions by the Chief Faculty Consultant, and sample student responses representing the high, middle, and low ranges of the scoring scales. When reading these responses, please remember that they were written under examination conditions.

- Section I: Multiple Choice
- Section II: Free Response

### **Section I: Multiple Choice**

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Listed on page 34 are the correct answers to the multiple-choice questions and the percentage of AP candidates who answered each question correctly.

## Section I Answer Key and Percent Answering Correctly

Item No.*	Correct Answer	Percent Correct by Grade					Total
		5	4	3	2	1	
1	B	96	91	88	82	76	88
2	D	97	94	91	84	74	89
3	C	98	92	84	75	59	83
4	B	94	88	80	64	46	78
5	C	95	89	81	72	54	80
6	B	79	65	51	39	25	54
7	A	85	72	57	41	25	59
8	D	90	83	78	69	59	77
9	A	98	96	93	83	60	89
10	D	86	73	62	50	36	64
11	C	86	74	64	58	53	69
12	C	96	95	91	89	75	90
13	D	83	75	67	58	48	67
14	A	72	61	50	41	31	53
15	D	84	69	55	46	31	60
16	A	87	80	75	65	48	73
17	D	94	88	83	77	65	83
18	A	86	78	70	61	53	72
19	D	90	83	74	64	53	75
20	C	94	87	81	73	65	81
21	C	83	67	55	43	34	58
22	E	83	72	62	55	48	65
23	B	96	92	88	75	56	85
24	B	92	83	74	62	39	73
25	A	96	89	80	73	61	82
26	D	87	82	75	61	41	72
27	B	96	90	85	78	66	84
28	E	79	76	75	67	51	72
29	E	87	75	56	42	25	60
30	C	86	72	60	44	35	61
31	E	92	86	76	67	52	76
32	C	99	93	85	70	52	83
33	D	92	81	70	58	42	70
34	B	79	70	60	48	32	61
35	E	74	68	61	53	39	61
36	C	76	54	37	24	20	44
37	B	96	90	84	71	49	82
38	C	78	61	48	33	18	50
39	D	92	73	53	28	13	55
40	B	81	73	63	54	38	65
42	A	95	89	80	67	46	79
43	C	72	58	47	42	38	53
44	C	83	71	57	39	22	58
45	D	90	81	71	56	34	70
46	C	84	68	51	32	20	53
47	D	45	36	28	22	14	30
48	C	87	79	70	57	39	69
49	D	73	55	43	31	23	47
50	A	80	70	63	55	47	64

Item No.*	Correct Answer	Percent Correct by Grade					Total
		5	4	3	2	1	
51	C	91	81	73	62	47	73
52	A	92	82	69	50	31	69
53	D	88	79	70	55	38	69
54	E	87	72	62	44	25	60
55	A	82	66	58	56	55	63
56	A	67	44	31	19	13	37
57	C	88	75	60	48	30	63
58	E	80	65	54	38	21	54
59	D	51	37	25	21	19	31
60	D	75	51	34	19	11	40
61	E	83	62	43	27	17	49
62	A	82	61	42	28	16	49
63	C	85	73	63	54	36	64
64	E	87	75	62	48	30	63
65	D	85	64	45	28	15	50
66	C	76	70	60	52	37	61
67	E	77	64	55	43	27	55
68	D	77	60	48	32	18	50
69	A	57	36	20	12	10	28
70	B	80	62	49	39	26	53
71	A	85	72	56	47	27	60
72	B	82	68	50	36	22	55
73	D	80	62	44	35	31	51
74	D	78	59	39	25	17	46
75	A	62	55	45	35	23	45
76	B	71	56	43	26	19	45
77	E	81	69	56	44	31	57
78	C	91	78	62	41	22	63
79	B	45	37	31	26	22	33
80	B	68	49	35	24	12	39
81	E	46	36	29	22	16	30
82	B	86	73	59	38	19	59
83	D	60	45	35	27	17	37
84	E	78	59	43	34	23	50
85	A	77	58	41	23	13	45
86	E	90	72	51	32	15	56
87	E	75	59	45	31	19	48
88	D	69	45	29	20	13	37
89	B	66	50	35	21	12	38
90	D	78	58	39	24	13	45
91	B	56	40	29	18	11	33
92	A	71	48	33	20	11	38
93	D	89	70	50	32	18	56
94	E	40	24	14	10	6	19
95	D	61	46	32	25	17	38
96	D	70	47	31	17	10	37
97	C	34	15	9	6	9	14
98	E	20	20	19	16	15	19
100	A	31	20	15	10	9	17

\* Please note that questions 41 and 99 were not scored.

## Section II: Free Response

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### Overview by the Chief Faculty Consultant

Both free-response questions were extremely challenging. In particular, many students experienced difficulties on question 2; the mean score for that question was 2.64 out of a possible 10 points. However, although it was a tough question, it did an excellent job of discriminating among the top students and differentiating them from the average students. Students who did well on question 2 were the same students who did well on the exam as a whole. Consequently, the difficulty level of the two questions did not alter the relative standings of students. The top students were able to perform well on all portions of the exam, and faculty consultants commented on the excellent essays written by top students in response to both question 1 and question 2. In general, students seemed well prepared for the overall exam.

The AP Psychology Development Committee and faculty consultants continue to voice a desire that the exam questions require, and student responses evidence, a high degree of psychological knowledge and sophistication. Answers that use generalities and “buzz words” and could be produced by “the person on the street” are not acceptable. The questions and the rubrics increasingly call for use of psychological terms with evidence that the student understands the meaning and use of these terms by explanation, example, or the citation of relevant psychological theory and/or research.

### Question 1

The intent of this question was twofold. First, the student was asked to show knowledge of the various biological and learning mechanisms that control or influence eating behavior and body weight. Then the student was asked to apply one biological and one

learning mechanism to a program of weight management. The mechanisms involved in eating behavior and body weight are standard topics in all introductory textbooks and courses. The second part of the question asks that the student act as an applied psychologist by using these academic factors in a real world problem.

Students handled both aspects of the question well. They showed good understanding of the various mechanisms, both biological and learning, involved in eating behavior and body weight. The rubric looked for the use of fairly specific mechanisms and did not credit generalities that could be learned by reading popular literature. For instance, to receive credit for the role of body or brain chemistry in eating and body weight, the student had to name a specific substance (such as blood glucose) or a specific neurotransmitter (such as serotonin) and state whether it increased or decreased eating and/or body weight. Despite the rigor of the rubric, students did quite well in meeting this level of specificity. Similarly with the role of genetics, the rubric asked that the student do more than just rephrase the question. Thus, merely stating that a person’s eating behavior and body weight could be due to an inherited tendency or predisposition was considered too vague to score. Instead, the rubric required that the student identify a specific mechanism that might be genetically determined such as body weight, set point, or metabolic weight.

A similar high standard was required for an acceptable explanation of the role of psychological factors. The student had to go beyond merely using the same term or its synonym. For instance, saying that a child models the eating behavior of her mother does not add anything beyond what is stated in the question. However, stating that a child sees her mother eating high calorie foods and adopts this eating habit describes the process of modeling and demonstrates the student’s understanding of the concept.



## Question 1 Scoring Guidelines

Answers to both Part A and B **must be cogent arguments**. The essay should explain by definition and/or example rather than merely mention mechanisms and their effects on eating habits and body weight.

### Part A

#### Point 1: Body/brain chemistry

Name a specific body/brain chemical (e.g., hormone, neurotransmitter) and identify its directional effect on an eating-related behavior, hunger, or body weight.

#### Exception:

Saying that substances released from the pituitary (or an appropriate endocrine gland, e.g., thyroid) affect eating-related behaviors or body weight is *acceptable without identifying the specific hormone*.

#### Examples:

If no direction is specified for a substance, assume its presence.

Blood glucose Cholecystokinin (CCK) Norepinephrine Dopamine Serotonin Glucagon Leptin	When levels of these substances are low, hunger or eating results  When levels of these substances are high, satiety (fullness) results
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Insulin Neuropeptide Y	When levels of these substances are high, hunger or eating results When levels of these substances are low, satiety (fullness) results
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#### Too vague to score:

- “Low blood sugar” (no explanation).
- “Blood sugar relates to hunger” (doesn’t specify direction of effect).
- “Marijuana causes munchies” (exogenous drugs don’t score).

#### Other considerations:

- Trap: Metabolism is a process, not a chemical. Do not score.
- Accept abbreviations (e.g., CCK). Allow for reasonable permutations.
- Ignore (do not penalize) misstatements about a specific chemical agent in an otherwise correct answer (e.g., glucose as a neurotransmitter or CCK from stomach).
- Exogenous drugs don’t score, but watch for the naming of a specific endogenous mechanism (e.g., “Prozac decreases hunger by increasing serotonin” scores because of the correct reference to serotonin, but “Prozac decreases hunger” is not sufficient).

## Point 2: Brain structure

A. Name the lateral hypothalamus, ventromedial hypothalamus, or other specific brain structure and explain its role in the regulation of eating or body weight.

OR

B. Identify the hypothalamus as regulating eating/body weight **in both directions** (concept of dual function of hunger and satiety).

### Examples:

A. Specific brain structure

- Lateral hypothalamus (LH) as eating center (e.g., “stimulation produces eating” or “damage leads to no eating”).
- Ventromedial hypothalamus (VMH) as satiety center (e.g., “stimulation results in satiety” or “lesion produces overeating”).
- Reference to the pituitary controlling metabolism.

B. Dual function of hypothalamus

- “The hypothalamus regulates both eating and satiety.”
- “Damage to the hypothalamus can either increase eating or produce a feeling of fullness.”

### Too vague to score:

- “Brain damage causes obesity” (no mechanism specified).
- “Stimulation of the hypothalamus increases hunger” (only one function acknowledged).
- “The hypothalamus regulates eating” (dual role not acknowledged).

### Other considerations:

- Trap: Metabolism is a process, not a brain structure. Don't score.
- Score sensory deficits only if appropriate brain structure or neural pathway is specified (e.g., “if the olfactory bulb is damaged, a person will eat less because food is less appealing”).
- Accept abbreviations (e.g., LH, VMH) and allow for reasonable permutations.

## Point 3: Genetics

Identify one of the following as being genetically-determined:

1. Body weight set point
2. Metabolic rate (BMR).
3. Number of fat cells
4. Obese (OB) gene (accept chromosome 15)
5. Other scientifically-established, genetically-based disorders that have a direct effect on eating habits or body weight (e.g., diabetes, hyperthyroidism, hypothyroidism)

### Too vague to score:

- Inherited tendency or predisposition without reference to one of the acceptable effects, e.g., “a person is genetically programmed to be obese.”

**Other considerations:**

- Trap: Size of fat cells (not number). Don't score.
- Trap: Can't inherit behaviors (Lamarckian). Don't score.

**Point 4: Reinforcement**

*Identify a behavior related to eating or body-weight regulation and explain how it is acquired or maintained by reinforcement (or diminished by punishment). The mechanism of reinforcement can be defined conceptually or established by example.*

**Reinforcement mechanism:**

Terms like "positive reinforcement" and "reward" are sufficient definitions, but "reinforcement" alone is not because it adds nothing to the language of the question. In this latter case, specification of the reinforcer and its relationship to the behavior is necessary.

**Allowable relationships:**

- Eating (or not eating) behaviors can be reinforced (or punished). Examples: "Eating habits are positively reinforced by parents;" "Poor eating habits are punished by scolding;" "Eating tasty foods is reinforcing, which encourages consumption of those foods."
- Taste aversions can develop, modifying eating habits. For example: "Chemotherapy patients may learn to avoid foods eaten during therapy."
- Food can be used consistently as a reinforcer, thereby changing the recipient's body weight. For example: "A child is given candy for doing daily chores and gains weight."
- Delay of reinforcement affects degree of learning associated with eating. For example: "Eating fruit instead of candy does not immediately improve health so it may be difficult to change eating habits."

**Too vague to score:**

- "Eating reduces stress" (no reinforcement mechanism identified).
- Child's eating habits reinforced by parents (mechanism of reinforcement not established).

**Point 5: Modeling**

*Acquisition of a behavior related to eating or body weight regulation through observational learning/role modeling*

**Examples:**

- "A child sees her father eating cheeseburgers and adopts this eating habit."
- "A person hears that his favorite athlete eats a special food and begins eating this item."
- "A person reads that a model eats only salads and does the same."

**Too vague to score:**

- “Your parents eat too much and you do too” (no modeling mechanism identified).
- “I want to be a model” (no eating-related behavior specified).
- “A child models the eating habits of her mother” (repeats the word “model” from the question without adding additional explanation).

**Other considerations:**

- Mechanism must be explicit — person must observe/see/hear about/be exposed to another’s behavior.
- Can be a good or bad outcome on eating-related behavior or behaviors associated with body weight regulation.
- No credit for simply parroting the word “model” unless an appropriate example or explanation is given.

**Point 6: Cultural factors**

*Indicate how cultural pressures, expectations, or norms influence eating-related behavior or standards for body weight. The concept of cultural **pressure** on an individual must be explicit.*

**Examples:**

- “A thin body ideal in America encourages people to diet.”
- “Cultural variations in diet dictate what is eaten.”

**Too vague to score:**

- “In the United States, people are thin” (no pressure).
- “The media pressures people to look like models” (no reference to body weight).
- “Anorexia is caused by the media.”

**Other considerations:**

- Cultural standard must make explicit reference to eating habit or body weight (e.g., thin, not just beauty).
- Trap: Fitness is *not* synonymous with eating habits or body weight regulation.
- Treat societal factors as cultural.

**Part B**

*An essay must give a **cogent** argument showing how the selected mechanism has the potential to manage weight. Management requires an attempt at behavioral regulation; it is not established by merely stating that certain biological or learning factors are difficult or impossible to overcome.*

*The essay must identify a selected mechanism (biological or learning).*

**Special consideration:**

- Students often combine biological and learning mechanisms in one paragraph. Points can be awarded for both as long as each mechanism is identified as biological or learning and a strategy for management of each is clear.

### **Point 7: Biological implications**

#### **Examples:**

- Strategies designed to correct a physiological dysfunction are identified (e.g., a diabetic using insulin).
- “Monitoring one’s diet to counter a genetic predisposition to obesity.”

#### **Too vague to score:**

- “Inheriting a slow metabolism will make it hard to lose weight” (no action/strategy of weight management).

### **Point 8: Learning implications**

#### **Examples:**

- “Learning to eat a balanced diet as a child makes it easier to maintain proper weight.”
- “Anorexics actively seek/defend unhealthy body weight.”
- “Children in Spain walk a lot and eat a large meal only at lunch, so they are seldom fat.”

#### **Too vague to score:**

- “A young woman succumbing to cultural pressure to look thin, becomes anorexic” (no mention of weight management).

## Sample Student Responses for Question 1

### Student Response 1 — Excellent

Both biological and learning mechanisms help determine an individual's eating habits and body weight. Biological factors effecting eating habits and body weight are body or brain chemistry, brain structure, and genetics. Body and brain chemistry is the balance of hormones and chemicals in the body and brain. The endocrine system in the brain controls the release of hormones in the body. If there is an improper balance of hormones or chemicals in the body, such as too much or too little glucagon, an individual may eat too much or too little. The brain structure important in controlling hunger and eating habits is the hypothalamus. Lesions on the ventral medial hypothalamus, identified as the satiety center, ~~that~~ causes overeating because the brain does not communicate that it is satisfied. Lesions on the lateral hypothalamus, identified as the hunger center of the brain, cause aphagia, or starvation despite a food source present, because the brain does not send the message that it is hungry. Genetics is another biological function that plays a role in determining an individual's eating habits and body weight is genetics. Genetics are the study of heredity. Set point, or the amount of body fat an individual

has is genetically predetermined by information on a person's chromosomes. ~~is~~

Learning mechanisms also impact body weight and eating habits of the individual.

Reinforcement is the rewarding or punishing of a response, associated with operant conditioning. IF a ~~is~~ certain

behavior is rewarded it will continue, and if it is punished the behavior will stop. IF

overeating ~~is rewarded~~ or poor eating habits are rewarded, an individual is likely to continue those bad habits and become overweight. IF

those habits are however discouraged, an individual may be at weight or underweight.

Positive reinforcement of good eating habits increases the chance that an individual will have healthy habits and weight. Modeling

is ~~the observation of~~ how an individual learns by imitation of someone else. IF an individual

is reared in a home of parents with good eating habits he is likely to copy those habits or

imitate poor habits if his parents have poor habits. Cultural factors, or the traditions and

practices of one's ethnic, religious or social group also impact body weight and eating

habits. Depending on the eating habits encouraged by a cultural group, an individual

may be overweight or underweight. Many culture ~~and~~ ~~behavior~~ groups adhere to certain diets



prescribed to them by their religion.  
Biological and learning mechanisms have many implications for weight management. If an individual has improper brain or body chemistry, it is possible that their weight problems could be controlled by the development of a drug that restores proper balance of chemicals or hormones in the brain or body. Reinforcement could be used to control the eating habits associated with weight problems. For example an overweight person could be trained through punishment not to eat too much and/or positive reinforcement could be used to encourage good habits. The appetite could be used for individuals who are underweight.

#### Commentary

This response earned a score of 8. The student made reference to the endocrine system releasing hormones to control eating behaviors and to body weight set point, and both the ventromedial hypothalamus and lateral hypothalamus are identified by name and function. The student mentioned that rewarded eating habits will continue, that children acquire their parents' eating habits through imitation, and that cultural practices affect individual eating habits by encouraging consumption. The student also demonstrates how faulty body chemistry can be corrected pharmacologically and how punishment could be used to treat a person who is overweight.

A person's body weight and eating habits can be attributed by either an internal biological factor - (which can be accounted for by heredity or genetics, or stimulus to certain parts of the brain), or by learning, external factors (which may include modeling, peer pressure, or reinforcements). Both can be used to account for a person's weight and habits.

Biological mechanisms deal with the body's internal factors which contribute to weight/habits.

The first one is body or brain chemistry. Body/Brain chemistry can be explained by the body's set point and its metabolic weight. If a person is losing a lot of weight, then the body's set point will adjust the metabolism in a person's body to maintain the normal body weight suited for the person. It will stimulate the brain to send hunger pangs and the acid in the stomach will increase; as well as the increase in the contraction of the stomach muscles to alert the person to eat, and to relieve itself of the hunger.

Brain structures are explained by the parts which deals with hunger, which is the hypothalamus. The hypothalamus can either stimulate hunger, or cease hunger by stimulating the ventromedial or the

These parts in the brains regulate the body's metabolic rate, and controls the body's need to satisfy the hunger. Studies done with lab rats have shown that when certain parts of the brain are stimulated, the rat either begins to eat or stop, or not to eat at all even though it is obviously hungry.

This is because the brain has the ability to control the notification of hunger and well as the body's response to it.

Genetics attribute to eating habits and body weight because some obese cases seems to be linked to genetics. Studies have shown that obese parents are likely to have obese kids, and in turn studies, research has shown a high concordance rate among obese twins. However, this can be a confounding factor because it can be environmental. What if the children are obese because the parents load the house with junk food and that's all the kids like to eat?

Learning mechanisms also have an effect on eating habits and body weight. Modeling can account for it based on parents to children studies. Obese parents might cause obese children because the children learn to model the parents' unhealthy eating habits and lack of exercise. The children grow to think that it's okay to eat twinkies and ice cream all day. They imitate what their parents do.

Cultural factors are big too in a sense that certain ethnic groups may bow to certain fatty foods and adopt unhealthy eating habits. Asians who feed mostly on rice and noodles, who avoid sweets may be slimmer than, let's say, the average american who is used to sweets for snacks, and also the habit of eating a dessert after a meal.

Reinforcement can attribute to weight/habit as well. A depressed person who finds that after a fruit, and after a bag of ~~crackers~~, cheese puffs, feels better, may learn to turn to food every time he's depressed. The food ~~acts~~ has a calming effect on him, which is positive reinforcement. ~~for this~~ Each time he's depressed, he turns to food, which in turn ~~will~~ make him feel better.

For a person looking to seek help in weight management, they can turn either to vicarious or learning mechanisms. People who have modeled eating habits can learn to model good eating habits of health and food experts instead of their obese parents, or junk food eating friends. This can help them to control their eating habits as well as help them reach an ideal weight.

Body and brain chemistry can be altered by the body's reaction to it. An athlete's high metabolism which keeps him slim may slow down if he stops exercising. However, a person can speed up his metabolic rate to stay in shape and keep slim simply by exercising more.

#### Commentary

This response earned a score of 6. The student received a point for recognizing the dual functions of the hypothalamus. However, the discussion of metabolism and body weight set point does not address the issue of body chemistry and no genetically determined effect is provided. The student was awarded points for describing how a depressed individual who eats and feels less depressed will learn to turn to food when depressed, for stating that children imitate parents' unhealthy eating habits, and for providing examples of culturally-determined eating practices. The student also earned points by suggesting that a person could speed up metabolism, and thus reduce weight, by exercising, and by providing an example of modeled eating habits.

Both biological and learning mechanisms play important roles in determining an individual's eating habits and body weight. Genetics is a biological mechanism that affects eating habits and body weight that is predetermined, even before birth. Genetics takes into account genes and genetic material from both the mother and father. The baby's DNA is coded with information concerning eating habits and body weight based on genetic information of family members for generations. Therefore, certain individuals may be predisposed to obesity or high metabolisms. Also genetics plays a role in certain foods that individuals may or may not be able to digest such as lactose. Individuals are able to go for blood testing and have genetic tests done to determine what if any problems they may have concerning their eating habits and body weight. The most effective method for managing genetic mechanisms concerning weight is to simply be aware of them. If an individual knows that high blood pressure runs in their family, it will be easier for him/her to adjust the diet in order to reduce the risk. Also, doctors can prescribe medication to

help with certain problems. Cultural factors are a learning mechanism that also influence eating habits and body weight. Throughout history, society and culture ~~proposed~~ ~~accepted~~ mold people to fit an "accepted" image. In the past, people who were overweight and ate a lot were placed above thin, emaciated people in the social hierarchy. The overweight people had more money and were, therefore, able to have huge feasts and eat a lot. Thin people were those who could not afford to eat. In today's society, our culture does not view obese people as attractive. The current fad is to be thin. On t.v., all the people are extremely thin because that is what is seen as attractive. Therefore, people try to fit this mold by not eating a lot or simply not eating at all. Our culture is also one that produces a fast paced way of life. People are always moving. Many times they don't have time to eat or eat fast food. As a whole, our culture has produced a lazier generation of people. People today eat unhealthy and many are either too thin or too fat. The way



to manage cultural influence on weight management is to eat right and exercise. Also people need to be happy with who they are and not get so obsessed with what they look like on the outside. Both biological and learning mechanisms can influence eating habits and weight, but both can be controlled simply by being aware they exist.

#### Commentary

This essay earned a score of 4. The student earned points for a reference to the genetic determination of metabolism and for saying that people try to fit a mold of a thin body weight ideal by not eating. The student was also awarded points for discussing dietary and pharmacological interventions related to high blood pressure and for the statement regarding the management of cultural influence on weight.



Genetics - the traits of an individual are used in how a person is already instinctually motivated towards a particular way of feeling about their body weight and the way their body will deal with the level of food they intake  
body/brain chemistry - a slow or high metabolism rate will affect one's biological reaction to the amount of food eaten

### Learning Mechanisms

Cultural Factors - influences individual by society preference in <sup>reference to</sup> eating habits/body weight  
ex: certain African cultures ~~is~~ desire heavier females as oppose to ~~is~~ thinner, which will cause them to appear that way to be more socially acceptable

Reinforcement - negative and positive outcomes of actions in reference to body weight/eating habits will cause an individual to continue a particular habit of eating/sustaining their weight. Ex: if someone has recently been getting heart-attacks, then finds that it has to do with the level of fat intake, they will most likely avoid any ~~further~~ foods w/ high level to avoid further attacks

#### **Commentary**

This student's essay earned a score of 2. Points were awarded to the student for providing the examples of making a change in diet following a heart attack and individuals seeking a heavier body weight in a culture in which this is the ideal.

## Question 2

This question proved to be very difficult for all but the most capable students. The typical student showed limited recall of the concepts in this question and consequently was not able to apply them to interpret the results of the experiment. On the other hand, capable students (as defined by scores on the multiple-choice section and question 1) were able to recall these concepts, give clear and accurate definitions, and correctly apply them to the experimental results. The question also differentiated among these top students (students receiving scores of 4 and 5 on the exam). Faculty consultants were immensely impressed by the clarity and cogency of these top essays.

Most of the concepts on this question deal with cognition. The results of the question suggest that many teachers do not give adequate weight to this section of psychology. It is hard, otherwise, to explain their students' difficulty in recalling the frequently and widely discussed concepts of schema and retroactive interference. The area of cognition has been called a "third wave" in the history of contemporary psychology

and has revolutionized our understanding of the science and its application to the world we live in. It might behoove more teachers to pay at least as much attention to this area of psychology as they obviously do to behavioral and biological orientations.

One final note: The fact that a concept is not in every textbook, is in a chapter that is not always covered, and/or is not in older textbooks is not a cogent argument against testing students' knowledge of the concept. It is vital that AP teachers keep up with major developments in psychology and go beyond the textbook in their efforts to acquaint their students with these new developments. Of course, many AP teachers do not enjoy the luxury of being able to use new, up-to-date textbooks each year. In such cases, they should continue to press their administration for the purchase of the most recent textbooks, or supplement older textbooks with more recent materials, so that the students in their school district are able to compete successfully with students from school districts that do provide their AP students with current textbooks.

## Question 2 Scoring Guidelines

- Definition for each term is 1 point and each application is 1 point; they are not dependent on each other. The application must be identified with the correct term and linked back to the experiment.
- Definition is an odd number point and application is an even number point.
- The first four concepts are from the subject's point of view and the last concept is from the experimenter's point of view.

### Schema — Points 1 and 2

#### Definition (1 point):

A framework used to organize information.

Concept	OR	Process for input of information
template structure framework set plan model expectations representations blueprints set of ideas mental set network		organizing interpreting incorporating ordering shaping predicting

**Not acceptable:**

- Perception alone will not do it (e.g., “the way you perceive”).
- Mind set, preconceived ideas, patterns of thought.
- Example is not a definition.
- Outcome only — understanding, how I see the world, knowledge.

**Application (1 point):**

Participants have formed the expectation that the male is the aggressor. Outcome is acceptable in the application.

**Retroactive Interference — Points 3 and 4**

**Definition (1 point):**

Information that is presented *after* the presentation of information to be remembered interferes with or blocks old information.

*The definition of retroactive interference can be phrased in terms of information without specific reference to memory processes.*

- Disruptive effect of new learning on old information.
- New information distorts old information.

**Application (1 point):**

The photographs that were presented after the photo of the “public park” might interfere with or block the details of the “public park” photo.

**Representativeness Heuristic — Points 5 and 6**

**Definition (1 point):**

A rule of thumb for judging the likelihood of events based on how well something fits a prototype. That is, how similar are people (or an individual) in the event to prototypical views of such people?

*Defining the representative heuristic as a concept, conclusion, or reasoning process is acceptable. These are presented, respectively, in the boxes below.*

■ “rule of thumb,” or “problem-solving strategy,” or “cognitive shortcut” may stand alone.

OR

■ a judgment, decision, solution, or conclusion based on how well an observation or event fits one of the following: a prototype, schema, cultural norm, or stereotype.

OR

■ judging, deciding, solving, figuring out or processing in line with what one	normally	experiences in most situations as related to the issue of male-female aggression depicted in the photographs.
	typically	
	generally	
	usually	

**Not acceptable:**

- References to perception or perceptual experiences alone.
- References to memory, remembering, or recall (e.g., “remembering things that stand out the most”).
- Individual is representative of a population or group (i.e., the representativeness heuristic does not refer to how an individual may or may not be representative of a population; this is not representative sampling).

**Application (1 point):**

Aggressive men/non-aggressive women are seen as more “typical.” An aggressive man fits this prototype, an aggressive woman does not. Hence, participants conclude that the man is the aggressor or that the woman is not the aggressor. Participant chooses, decides, judges, perceives, or selects a strategy which leads to the conclusion that the male is the aggressor (or that the woman is not the aggressor as depicted in the photograph). Answers must relate the error to this study and context.

**Confirmation Bias — Points 7 and 8**

**Definition (1 point):**

Attending to information that supports one’s preconceptions. You pay attention to information that confirms your preconceptions and/or ignore information that does not.

■ Tendency to search for information or cues that	confirm	our	ideas.
	support		beliefs.
	go hand in hand with		preconceptions.

OR

■ Pay attention to information that confirms our bias.
--

OR

■ Ignore or reject information that is contrary to beliefs or that	interferes with	new information.
	prejudices	
	blocks	
	distorts	

**Not acceptable:**

- Something that confirms our bias.
- Identifying experimenter bias.

**Application (1 point):**

Participants pay attention to the aggression in the “public park” photo, but do not pay attention to the fact that the woman is the aggressor because that does not fit their preconceptions.

**Framing — Points 9 and 10**

**Definition (1 point):**

The way a question is posed (how it is “framed”) can alter judgment, decision-making, and recall.

■ The way an issue or question is	posed	can	alter	the participant’s response.
	framed		change	
	asked		influence	
	presented		affect	

**Not acceptable:**

- Procedural manipulation (e.g., changing sequence of photographs, changing the location of the experiment).
- Body language or other nonverbal communication.

**Application (1 point):**

The way the experimenter asks the question or describes the procedure will influence the participant’s description of the photo. The open-ended question may allow preconceived notions to have maximum effect.

## Sample Student Responses for Question 2

### Student Response 1 — Excellent

2 The participants' perceptions of this photograph are influenced by a lot of factors.

First, there is the individual's preexisting schemas. A schema is a set of ideas held by someone. Many people's schemas include stereotypes of gender roles, in that men are more aggressive. Someone with this type of schema would see the man as the aggressor in this situation, because he ~~is naturally the aggressor~~ ~~is more aggressive and~~ applies his stereotype to this particular situation.

Retrospective interference is the effect of new information going back and interfering with memories of older information. Seeing all of the photographs after the "public park" photo might cause something in a more recent photograph to affect perception of the older one.

For example, if a man in a recent photograph was clearly being aggressive, the subject would remember this and apply it to the interpretation of the park picture.

The representativeness heuristic is interpreting information <sup>and drawing conclusions</sup> based on how well something matches a particular prototype. The argument between the man and the woman in the picture may simply be remembered as a standard "argument" prototype. In the standard model the man has started the fight, and this model is now representative of all arguments. Therefore the subject would recall the man as being the aggressor in the argument.

Confirmation bias is seeking only information that confirms one's preconceptions. If one naturally assumes that the man started the fight, one would only look for evidence supporting that belief. The subject would be looking for cues such as the woman being upset or the man looking mean, not for indications like the fact that the woman is shouting or the man is sitting down.

Framing is the way a question is worded. If the researchers of asked the participants leading questions, it could definitely affect their perceptions. For example, the researcher could ask: "Why was the man arguing with the woman?" or "Was the man yelling at the woman?" or "Did you feel sorry for the woman?" Questions such as these would bias the subject beforehand and cause him or her to think less objectively about what was seen in the picture. Assuming beforehand that the man started the argument would cause the subject to believe that, and report it that way in subsequent questions.

#### Commentary

This response earned a score of 10. All terms are defined properly. The student provides an example of how interpretation of the picture might vary due to a schema involving aggression and gender roles. The student discusses how retroactive interference could occur from seeing more photographs after the public park photo. Application points are also awarded for discussing a standard argument prototype involving males starting fights, seeking evidence for the assumption that the man started the fight, and leading questions.

## Student Response 2 — Good

Schemas are concepts or cognitive groupings ~~which are formed~~ which are formed as we interpret and organize information. People who have observed more instances of men being aggressors and women being victims, either through observing family, friends, society, and/or the media, have developed schemas of aggressive men and victimized women through their observations and interpretations. When asked a question about the nature of the argument in the picture, people retrieve information from their pre-existing schemas and respond by saying the man was the aggressor, even though that is false.

Retroactive interference is when the learning and existing memory of old information inhibits the learning of new information. If people have learned in the past that men are more aggressive while women are mild and meek, then it would be harder to interpret this new information of a woman being the aggressor.

Since pre-existing memory interferes with the learning of what occurred in this novel situation, the witnesses cannot remember the woman as being the aggressor and turn to their old memory of the man being aggressive.

Representativeness heuristic is the readiness with which we match new information with a representative prototype. ~~Our prot~~ The prototype of aggressive people in the minds of the



witnesses is an aggressive man, so they respond to the photograph by saying that the man is the aggressor because they can more readily match him with their aggressive-man prototype.

Confirmation bias is the tendency to only notice information that confirms our own beliefs. ~~When~~ If the people had a belief that men are aggressive, they respond to the picture by saying the argument was caused by the man because that confirms their existing beliefs.

Framing is the way a question is presented to a person, which may influence his/her answer. The way the ques was asked may have influenced the person to say the man was the aggressor.

#### Commentary

This essay earned a score of 8. All definitions and applications are correct except those provided for retroactive interference. Application points are earned by the discussions of a relationship between experience with aggression and schema development, the use of a prototype, confirmation of existing beliefs, and the influence of the way a question is asked.

A schema is a structure for learning and assimilating information. ~~Do~~ When viewing traditional roles, males are generally perceived as aggressors. If the participants have a schema that suggests males are more violent or aggressive than females, it seems more likely to them that the man would be hostile toward the traditionally more calm and complacent woman.

Retroactive interference is learning one concept and then learning a second concept that interferes or overshadows the memory of the first. If this took place with the participants, ~~they~~ the several photographs shown after the public park picture may have interfered with the encoding of the memory of the picture from the public park. Therefore, the participants used the "most likely" reconstructive memory, according to their schema.

A heuristic is a "rule of thumb" for learning and remembering information. ~~A~~ A representativeness heuristic is a rule of thumb for certain ~~to~~ situations and objects. If the participants believe that men incite arguments as a general rule, they will be inclined to remember that the man in the photo was the aggressor.

#### Commentary

This student's essay earned a score of 5. Schema, retroactive interference, and representativeness heuristic are defined correctly. Application points are awarded for the discussion of how a schema makes one interpretation more likely than another and how a belief will influence the memory of the situation depicted in the photograph.

Student Response 4 — Poor

The photographs that were shown to the people after the original photograph all interfered with the memory of the first photograph. The participants probably did not think to rehearse the memory of the first photograph, and thus could only remember a ~~partial~~ vague idea of the photograph. This theory of forgetting is called retroactive interference, because the viewing of new pictures interfered with the memory of the first picture. Furthermore, people assumed that the man was the aggressor even though the opposite was true. This is because of gender roles. People had a vague memory of the argument in the picture and picked the man as the aggressor because that is the most obvious choice. They also may have misinterpreted the picture from the beginning due to gender roles. So this may have been a problem with encoding rather than a problem in retrieval (retrieval)

**Commentary**

Response 4 earned a score of 2. Both points are awarded for retroactive interference. The definition at the end of the first paragraph is correct. The application point can be awarded either for the example embedded within the definition or for the earlier description of how the photographs shown after the original photograph interfered with the memory of it.

# Chapter IV Statistical Information

- Table 4.1 — Section I Scores and AP Grades
- How AP Grades Are Determined
- Table 4.2 — Scoring Worksheet
- Table 4.3 — Grade Distributions
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- College Comparability Studies
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- Reporting AP Grades
- Purpose of AP Grades

**Table 4.1 — Section I Scores and AP Grades**

These are the score distributions for the total group of candidates on each free-response question from the 1999 exam.

Score	Question 1		Question 2	
	Number of Students	% At Score	Number of Students	% At Score
10			238	0.8
9			257	0.9
8	273	1.0	804	2.9
7	1,125	4.0	870	3.1
6	2,904	10.4	1,616	5.8
5	4,699	16.8	1,999	7.1
4	5,481	19.6	3,028	10.8
3	5,309	19.0	3,622	12.9
2	4,562	16.3	4,741	16.9
1	2,742	9.8	4,596	16.4
0	801	2.9	5,045	18.0
*NR	117	0.4	1,197	4.3
Total Candidates	28,013		28,013	
Mean	3.59		2.64	
Standard Deviation	1.78		2.36	
Mean as % of Maximum Score	45		26	

\*NR — No response. Student gave either no response or a response not on the topic.

## How AP Grades Are Determined

Students could have received 0 to 98 points in Section I and 0 to 18 points in Section II of this exam. However, these scores are not released to the student, school, or college. Instead, these raw scores are converted to grades on an AP 5-point scale, and it is these grades that are reported. This conversion involves a number of steps, which are detailed on the Scoring Worksheet on the facing page:

1. **The multiple-choice score is calculated.** To adjust for random guessing, a fraction of the number of wrong answers is subtracted from the number of right answers. This fraction is  $1/4$  for five-choice questions (as on the Psychology Exam), so that the expected score from random guessing will be zero.
2. **The free-response score is calculated.** When the free-response section includes two or more parts, those parts are weighted according to the value assigned to them by the Development Committee. This allows the committee to place more importance on certain skills to correspond to their emphasis in the corresponding college curriculum. In the case of the 1999 AP Psychology Exam, the two free-response questions were weighted equally.
3. **A composite score is calculated.** Weighting also comes into play when looking at the multiple-choice section in comparison to the free-response section. In consultation with experts from the College Board and ETS, the Psychology Committee decided that Section I should contribute two thirds, and Section II should contribute one third

to the total score. The maximum composite score was 150. The Scoring Worksheet on the facing page details the process of converting section scores to composite scores for this exam.

4. **AP grades are calculated.** The Chief Faculty Consultant sets the four cut points that divide the composite scores into groups. A variety of information is available to help the CFC determine the score ranges into which the exam grades should fall:
  - Distributions of scores on each portion of the multiple-choice and free-response sections of the exam, along with totals for each section and the composite score total, are provided.
  - With these tables and special statistical tables presenting grade distributions from previous years, the CFC can compare the exam at hand to results of other years.
  - For each composite score, a roster summarizes student performance on all sections of the exam.
  - Finally, on the basis of professional judgment regarding the quality of performance represented by the achieved scores, the CFC determines the candidates' final AP grades.

See Table 4.3 for the 1999 AP Psychology Exam grade distributions.

If you're interested in more detailed information about this process, please see the "Technical Corner" of our website: [www.collegeboard.org/ap](http://www.collegeboard.org/ap). There you'll also find information about how the AP Exams are developed, how validity and reliability studies are conducted, and other nuts-and-bolts data on all AP subjects.

Table 4.2 — Scoring Worksheet — Psychology

**Section I: Multiple Choice**

$$\left[ \frac{\text{Number correct (out of 98)}}{\text{Number correct (out of 98)}} - \left( \frac{1}{4} \times \frac{\text{Number wrong}}{\text{Number correct (out of 98)}} \right) \right] \times 1.0204 = \frac{\text{Multiple-Choice Score}}{\text{Multiple-Choice Score}} = \frac{\text{Weighted Section I Score}}{\text{Weighted Section I Score}}$$

**Section II: Free Response**

Question 1  $\frac{\text{_____ (out of 8)}}{\text{(out of 8)}} \times 3.1250 = \text{_____}$

Question 2  $\frac{\text{_____ (out of 10)}}{\text{(out of 10)}} \times 2.5000 = \text{_____}$

Sum = \_\_\_\_\_  
 Weighted Section II Score

**Composite Score**

$$\frac{\text{Weighted Section I Score}}{\text{Weighted Section I Score}} + \frac{\text{Weighted Section II Score}}{\text{Weighted Section II Score}} = \frac{\text{Composite Score (Round to nearest whole number.)}}{\text{Composite Score (Round to nearest whole number.)}}$$

**AP Grade Conversion Chart Psychology 1999**

Composite Score Range*	AP Grade
93-150	5
72-92	4
53-71	3
34-52	2
0-33	1

\*The candidates' scores are weighted according to formulas determined in advance each year by the Development Committee to yield raw composite scores; the Chief Faculty Consultant is responsible for converting composite scores to the 5-point AP scale.



**Table 4.3 — Grade Distributions**

Nearly 70% of the candidates earned an AP grade of 3 or higher.

	Examination Grade	Total Group	
		Number of Students	Percent at Grade
Extremely well qualified	5	4,909	17.5
Well qualified	4	7,012	25.0
Qualified	3	7,384	26.4
Possibly qualified	2	5,634	20.1
No recommendation	1	3,074	11.0

Total Number of Students	28,013
Mean Grade	3.18
Standard Deviation	1.25

**Table 4.4 — Section I Scores and AP Grades**

This table gives the probabilities that a student would receive a particular grade on the 1999 AP Psychology Exam given that student's particular score on the multiple-choice section.

Multiple-Choice Score	AP Grade					Total
	1	2	3	4	5	
68 to 98	0.0%	0.0%	0.0%	15.8%	84.2%	16.2%
53 to 67	0.0%	0.0%	14.6%	70.2%	15.2%	25.6%
39 to 52	0.0%	11.2%	71.6%	17.3%	0.0%	26.0%
25 to 38	6.6%	73.6%	19.7%	0.1%	0.0%	20.2%
0 to 24	80.4%	19.5%	0.1%	0.0%	0.0%	12.0%
<b>Total</b>	<b>11.0%</b>	<b>20.1%</b>	<b>26.4%</b>	<b>25.0%</b>	<b>17.5%</b>	<b>100.0%</b>

## College Comparability Studies

The Advanced Placement Program has conducted college grade comparability studies in all AP subjects. These studies have compared the performance of AP Exam candidates with that of college students in related courses who have taken the AP Exam at the end of their course. In general, AP cutpoints are selected so that the lowest AP 5 is equivalent to the average A student in college, the lowest AP 4 equivalent to the average B student, and the lowest AP 3 equivalent to the average C student (see figure below).

AP Grade	Average College Grade
5	A
4	B
3	C
2	D
1	

Other studies conducted by colleges and universities indicate that AP students generally receive higher grades in advanced courses than do the students who have taken the regular freshman-level courses at the institution. Each college is encouraged to undertake such studies in order to establish appropriate policy for the acceptance of AP grades. Data for these studies are readily available as large percentages of AP students successfully handle the associated course work. Some institutions have found that until these studies are undertaken, placing students into advanced classes but allowing them to transfer to a lower-level course if necessary, is a desirable educational strategy.

## Reminders for All Grade Report Recipients

AP Examinations are designed to provide accurate assessments of achievement. However, any examination has limitations, especially when used for purposes

other than those intended. Presented here are some suggestions for teachers to aid in the use and interpretation of AP grades.

- AP Examinations in different subjects are developed and evaluated independently of each other. They are linked only by common purpose, format, and method of reporting results. Therefore, comparisons should not be made between grades on different AP Examinations. An AP grade in one subject may not have the same meaning as the same AP grade in another subject, just as national and college standards vary from one discipline to another.
- AP grades are not exactly comparable to college course grades. However, the AP Program conducts research studies every few years in each AP subject to ensure that the AP grading standards are comparable to those used in colleges with similar courses.
- The confidentiality of candidate grade reports should be recognized and maintained. All individuals who have access to AP grades should be aware of the confidential nature of the grades and agree to maintain their security. In addition, school districts and states should not release data about high school performance without the school's permission.
- AP Examinations are not designed as instruments for teacher or school evaluation. A large number of factors influence AP Exam performance in a particular course or school in any given year. As a result, differences in AP Exam performance should be carefully studied before being attributed to the teacher or school.
- Where evaluation of AP students, teachers, or courses is desired, local evaluation models should be developed. An important aspect of any evaluation model is the use of an appropriate method of comparison or frame of reference to account for yearly changes in student composition and ability, as well as local differences in resources, educational methods, and socioeconomic factors.



- The “Report to AP Teachers,” sent to schools automatically when five or more students take a particular AP Exam, can be a useful diagnostic tool in reviewing course results. This report identifies areas of strength and weakness for the students in each AP course. The information may also provide teachers with guidance for course emphasis and student evaluation.
- Many factors can influence course results. AP Exam performance may be due to the degree of agreement between your course and the course defined in the relevant AP Course Description, use of different instructional methods, differences in emphasis or preparation on particular parts of the examination, differences in pre-AP curriculum, or differences in student background and preparation in comparison with the national group.

## Reporting AP Grades

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The results of AP Examinations are disseminated in several ways to candidates, their secondary schools, and the colleges they select.

- College and candidate grade reports contain a cumulative record of all grades earned by the candidate on AP Exams during the current or previous years. These reports are sent in early July. (School grade reports are sent shortly thereafter.)
- Group results for AP Examinations are available to AP teachers whenever five or more candidates at a school have taken a particular AP Exam. This

“Report to AP Teachers” provides useful information comparing local candidate performance with that of the total group of candidates taking an exam, as well as details on different subsections of the exam.

Several other reports produced by the AP Program provide summary information on AP Examinations.

- State and National Reports show the distribution of grades obtained on each AP Exam for all candidates and for subsets of candidates broken down by sex and by ethnic group.
- The Program also produces a one-page summary of AP grade distributions for all exams in a given year.

For information on any of the above, please call AP Services at (609) 771-7300 or contact them via e-mail at [apexams@ets.org](mailto:apexams@ets.org).

## Purpose of AP Grades

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AP grades are intended to allow participating colleges and universities to award college credit, advanced placement, or both to qualified students. In general, an AP grade of 3 or higher indicates sufficient mastery of course content to allow placement in the succeeding college course, or credit for and exemption from a college course comparable to the AP course. Credit and placement policies are determined by each college or university, however, and students should be urged to contact their colleges directly to ask for specific advanced placement policies in writing.

A number of AP publications, CD-ROMs, and videos are available to help students, parents, AP Coordinators, and high school and college faculty learn more about the AP Program and its courses and exams. To sort out those publications that may be of particular use to you, refer to the following key:

Students and Parents	SP
Teachers	T
AP Coordinators and Administrators	A
College Faculty	C

You can order many items online through the AP Aisle of the College Board Online store at <http://cbweb2.collegeboard.org/shopping/>. Alternatively, call AP Order Services at (609) 771-7243. American Express, VISA, and MasterCard are accepted for payment.

If you are mailing your order, send it to the Advanced Placement Program, Dept. E-05, P.O. Box 6670, Princeton, NJ 08541-6670. Payment must accompany all orders not on an institutional purchase order or credit card, and checks should be made payable to the College Board.

The College Board pays fourth-class book rate postage (or its equivalent) on all prepaid orders; you should allow between four and six weeks for delivery. Postage will be charged on all orders requiring billing and/or requesting a faster method of shipment.

Publications may be returned within 15 days of receipt if postage is prepaid and publications are in resalable condition and still in print. Unless otherwise specified, orders will be filled with the currently available edition; prices are subject to change without notice.

### **AP Bulletin for Students and Parents: Free** **SP**

This bulletin provides a general description of the AP Program, including policies and procedures for preparing to take the exams, and registering for the AP courses. It describes each AP Exam, lists the advantages of taking the exams, describes the grade and award options available to students, and includes the upcoming exam schedule.

### **Student Guides (available for Calculus, English, and U.S. History): \$12** **SP**

These are course and exam preparation manuals designed for high school students who are thinking about or taking a specific AP course. Each guide answers questions about the AP course and exam, suggests helpful study resources and test-taking strategies, provides sample test questions with answers, and discusses how the free-response questions are scored.

### **College and University Guide to the AP Program: \$10** **C, A**

This guide is intended to help college and university faculty and administrators understand the benefits of having a coherent, equitable AP policy. Topics included are validity of AP grades; developing and maintaining scoring standards; ensuring equivalent achievement; state legislation supporting AP; and quantitative profiles of AP students by each AP subject.

### **Course Descriptions: \$12** **SP, T, A, C**

Course Descriptions provide an outline of the AP course content, explain the kinds of skills students are expected to demonstrate in the corresponding introductory college-level course, and describe the AP Exam. They also provide sample multiple-choice questions with an answer key, as well as sample free-response questions. A set of Course Descriptions for all AP subjects is available for \$100. Course Descriptions are also available for downloading from the AP section of the College Board website (free of charge).

### **Five-Year Set of Free-Response Questions: \$5** **T**

This is our no-frills publication. Each booklet contains copies of all the free-response questions from the last five exams in its subject; nothing more, nothing less. Collectively, the questions represent a comprehensive sampling of the concepts assessed on the exam in recent years and will give teachers plenty of materials to use for essay-writing or problem-solving practice during the year. (If there have been any content changes to the exam in the past five years, it will be noted on the cover of the booklet.)

**Interpreting and Using AP Grades: Free** A, C, T

A booklet containing information on the development of scoring standards, the AP Reading, grade-setting procedures, and suggestions on how to interpret AP grades.

**Guide to the Advanced Placement Program: Free** A

Written for both administrators and AP Coordinators, this guide is divided into two sections. The first section provides general information about AP, such as how to organize an AP program at your high school, the kind of training and support that is available for AP teachers, and a look at the AP Exams and grades. The second section contains more specific details about testing procedures and policies and is intended for AP Coordinators.

**Released Exams: \$20**

**(\$30 for “double” subjects: Calculus, Latin, Physics) T**

About every four years, on a staggered schedule, the AP Program releases a complete copy (multiple-choice and free-response sections) of each exam, as in the case of the 1999 Psychology Exam.

*Packets of 10: \$30.* For each subject with a released exam, you can purchase a packet of 10 copies of that year’s exams (\$30) for use in your classroom (e.g., to simulate an AP exam administration).

**Secondary School Guide to the AP Program: \$10**

A, T

This guide is a comprehensive consideration of the AP Program. It covers topics such as: developing or expanding an AP program; gaining faculty, administration, and community support; AP grade reports, their use and interpretation; AP Scholar Awards; receiving college credit for AP; AP teacher training resources; descriptions of successful AP programs in nine schools around the country; and “Voices of Experience,” a collection of ideas and tips from AP teachers and administrators.

**Teacher’s Guides: \$12**

T

Whether you’re about to teach an AP course for the first time, or you’ve done it for years but would like to get some fresh ideas for your classroom, the Teacher’s Guide can be your adviser. It contains syllabi developed by high school teachers currently teaching the AP course

and college faculty who teach the equivalent course at their institution. Along with detailed course outlines and innovative teaching tips, you’ll also find extensive lists of recommended teaching resources.

**AP Vertical Team Guides**

T, A

An AP Vertical Team (APVT) is made up of teachers from different grade levels who work together to develop and implement a sequential curriculum in a given discipline. The team’s goal is to help students acquire the skills necessary for success in AP. In order to help teachers and administrators who are interested in establishing an APVT at their school, the College Board has published three guides: *AP Vertical Teams in Science, Social Studies, Foreign Language, Studio Art, and Music Theory: An Introduction* (\$12); *A Guide for Advanced Placement English Vertical Teams* (\$10); and *Advanced Placement Program Mathematics Vertical Teams Toolkit* (\$35). A discussion of the English Vertical Teams guide, and the APVT concept, is also available on a 15-minute VHS videotape (\$10).

**EssayPrep™**

SP, T

EssayPrep is available through CBO ([www.collegeboard.org](http://www.collegeboard.org)). Students can select an essay topic, type a response, and get an evaluation from an experienced reader. The service is offered for the free-response portions of the AP Biology, English Language and Composition, English Literature and Composition, and U.S. History exams. The fee is \$15 per response for each evaluation. SAT II: Writing topics are also offered for a fee of \$10. Multiple evaluations can be purchased at a 10-20% discount. You can access EssayPrep from the CBO home page, or from the individual AP subject pages.

**The College Handbook with College Explorer® CD-ROM: \$25.95**

SP, T, A, C

Includes brief outlines of AP placement and credit policies at two- and four-year colleges across the country. Notes number of freshmen granted placement and/or credit for AP in the prior year.

**APCDs®: \$49 (home version),  
\$450 (multi-network site license)**

**SP, T**

These CD-ROMs are currently available for U.S. History, English Literature, English Language, and European History; the Calculus AB and Spanish Language versions will follow in spring 2000. They each include actual AP Exams, interactive tutorials, and other features including exam descriptions, answers to frequently asked questions, study skill suggestions, and test-taking strategies. There is also a listing of resources for further study and a planner for students to schedule and organize their study time.

**Videoconference Tapes: \$15**

**SP, A, C, T**

AP conducts live, interactive videoconferences for various subjects, enabling AP teachers and students to talk directly with the Development Committees that design the AP Exams. Tapes of these events are available in VHS format and are approximately 90 minutes long.

**AP Pathway to Success (video available  
in English and Spanish): \$15**

**SP, T, A, C**

This 25-minute-long video takes a look at the AP Program through the eyes of people who know AP: students, parents, teachers, and college admissions staff. They answer such questions as “Why Do It?”, “Who teaches AP Courses?”, and “Is AP For You?”. College

students discuss the advantages they gained through taking AP, such as academic self-confidence, writing skills, and course credit. AP teachers explain what the challenge of teaching AP courses means to them and their school, and admissions staff explain how they view students who have stretched themselves by taking AP Exams. There is also a discussion of the impact that an AP program has on an entire school and its community, and a look at resources available to help AP teachers, such as regional workshops, teacher conferences, and summer institutes.

**What’s in a Grade? (video): \$15**

**T, C**

AP Exams are composed of multiple-choice questions (scored by computer), and free-response questions that are scored by qualified professors and teachers. This video presents a behind-the-scenes look at the scoring process featuring footage shot on location at the 1992 AP Reading at Clemson University and other Reading sites. Using the AP European History Exam as a basis, the video documents the scoring process. It shows AP faculty consultants in action as they engage in scholarly debate to define precise scoring standards, then train others to recognize and apply those standards. Footage of other subjects, interviews with AP faculty consultants, and explanatory graphics round out the video.



# AP<sup>®</sup> Psychology

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