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# AP

# Barron's 生物

(第3版)

[美]戈尔德 (Deborah T. Golderg) 编著

- ∴ 备考指南 考点透析
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$$\frac{1}{\theta_c} = \frac{YQ(S_0 - S)}{XV} - K_d$$

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# AP

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$$\frac{1}{\theta_c} = \frac{Y_{\infty} - (S - K_d)}{XV}$$

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# Why Should I Buy This Book?

## 我为什么要买这本书?

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**T**his book includes:

- More than 400 pages of subject review
- More than 350 multiple-choice questions and answers with explanations in the content area
- One diagnostic test to help you identify your strengths and weaknesses
- Two practice tests with questions that mimic the actual AP Biology Exams
- Review of the 12 required AP labs
- Presentation of 5 themes to help you write a great essay on the AP exam
- Explanation of how to grade an essay the way the College Board does

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# INTRODUCTION

## 介绍

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# Introduction to the Exam 考试介绍

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CHAPTER

1

## GENERAL INFORMATION 概要

**T**he AP Biology course is designed to be the equivalent of a two-semester, college introductory biology course and is meant to be taken after a first-year high school biology course. This course is rigorous. The textbook you are using probably has more than twelve hundred pages. You have nine and a half months to complete it and to prepare for the exam, which is in mid-May. You will be reading volumes of text, devising and carrying out sophisticated experiments, and writing lots of essays.

This book has fifteen chapters of subject area review, which most likely follow the same order as the textbook you are using. All key words are in **bold**, and vocabulary terms are defined in the glossary. After each review section, the book provides sample multiple-choice questions with answers and explanations. There are many sample essays throughout the book, which will give you plenty of practice answering free-response questions.

The College Board requires AP Biology students to complete twelve college-level lab exercises before the examination. This book includes a complete review of all twelve labs and gives you detailed guidelines on how to devise an experiment.

During the school year, study from your textbook and your notes from class and then review from this book. This book is tailored to help you prepare for the AP Exam as well as for exams during the school year.

Good luck.



## THE AP EXAM AP考试

The AP Exam is three hours long and is composed of two parts. Part I consists of an 80-minute, 100-item multiple-choice section, which tests all content areas and counts for 60 percent of the exam grade. Part II begins with a 10-minute reading interval in which you have the opportunity to read the four required free-response questions, gather your thoughts and jot down key words, and prepare to write your essays. After the reading interval, you have 90 minutes in which to write the essays in the exam booklets. These essays count for 40 percent of the exam and consist of four mandatory questions that encompass broader topics than those in Part I. You get a short break between Part I and Part II.

Here is an example of the different types of questions you might find in each section. Whereas a Part I question might ask for a simple recall of a fact about muscle cells, the free-response question asks you to explain particular details and to *make connections* between separate broad themes.

### • Sample Part I Question

Which of the following is not involved in the regulation of blood sugar?

- (A) adrenaline
- (B) insulin
- (C) glucagon
- (D) cortisol
- (E) estrogen

### • Sample Part II Question

Regulation is a major theme in biology. Discuss one example of regulation at each of the following levels: molecular, cellular, organismal, and population.

Here is a breakdown of the topics and percentages covered in this course. The AP Exam seeks to be representative of these same percentages.

TABLE 1.1

## AP Biology Exam

Topics	Percent of Course
<b>I. Molecules and Cells</b> <b>A. Chemistry of Life</b> Water Organic molecules in organisms Free energy changes Enzymes <b>B. Cells</b> Prokaryotes and eukaryotes Membranes Subcellular organization Cell cycle and its regulation <b>C. Cellular Energetics</b> Coupled reactions Fermentation and cellular respiration Photosynthesis	25%
<b>II. Heredity and Evolution</b> <b>A. Heredity</b> Meiosis and gametogenesis Eukaryotic chromosomes Inheritance patterns <b>B. Molecular Genetics</b> RNA and DNA structure and function Gene regulation Mutation Viral structure and replication Nucleic acid technology and applications <b>C. Evolutionary biology</b> Early evolution of life Evidence of evolution Mechanisms of evolution	25%
<b>III. Organisms and Populations</b> <b>A. Diversity of Organisms</b> Evolutionary patterns Survey of the diversity of life Phylogenetic classification Evolutionary relationships <b>B. Structure and Function of Plants and Animals</b> Reproduction, growth, and development Structural, physiological, and behavioral adaptations Response to the environment <b>C. Ecology</b> Population dynamics Communities and ecosystems Global issues	50%