AP STATISTICS EXAM
(Topics and Format)

I. Topics

A. Exploratory Analysis (20% - 30%)

In examining distributions of data, you should be able to detect important characteristics such as shape, location, variability and unusual values. From careful observations of patterns in data, you should generate conjectures about relationships among variables. The notion of how one variable may be associated with another permeates almost all of statistics from simple comparisons of proportions through linear regression. The difference between association and causation accompanies this conceptual development throughout.

B. Planning A Study (10% - 15%)

If data are to be collected to provide an answer to a question of interest, a careful plan must be developed. Both the type of analysis that is appropriate and the nature of the conclusions that can be drawn from that analysis depend, in a critical way, on how the data was collected. Collecting data in a reasonable way, through either sampling or experimentation, is an essential step in the data analysis process.

C. Probability (20% - 30%)

Random phenomena are not haphazard: they display an order that emerges only in the long run and is described by a distribution. The mathematical description of variation is central to statistics. The probability required for statistical inference is oriented toward using probability distributions to describe data.

D. Statistical Inference (30% - 40%)

Models and data interact in statistical work: models are used to draw conclusions from data, while the data are allowed to criticize and even falsify the model through inferential and diagnostic methods. Inference from data can be thought of as the process of selecting a reasonable model, including a statement in probability language, of how confident one can be about the selection.

II. Format

A. 40-Multiple Choice Questions (50%)

1. 90-minutes
2. Guessing Penalty

B. 5-Free Response Questions (37.5%)

1. 60-minutes
2. Scored on a scale of 0 (no understanding) to 4 (complete understanding)

C. 1-Free Response Question (12.5%)

1. 30 minutes
2. Scored on a scale of 0 to 4
3. Designed to assess ability to integrate statistical ideas and apply them in a new context