

1989 Advanced Placement Exam

Part I Multiple Choice

Note: For all questions referring to solutions, assume that the solvent is water unless otherwise stated.

Directions: Each set of lettered choices below refers to the numbered statements immediately following it. Select the one lettered choice that best fits each statement and then blacken the corresponding space on the answer sheet. A choice may be used once, more than once, or not at all in each set.

Questions 1–3

- a. O c. Rb e. N
b. La d. Mg

- What is the most electronegative element?
- Which element exhibits the greatest number of different oxidation states?
- Which of the elements above has the smallest ionic radius for its most commonly found ion?

Questions 4–7

- a. $1s^2 2s^2 2p^5 3s^2 3p^5$
b. $1s^2 2s^2 2p^6 3s^2 3p^6$
c. $1s^2 2s^2 2p^6 2d^{10} 3s^2 3p^6$
d. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5$
e. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2$

- An impossible electronic configuration
- The ground-state configuration for the atoms of a transition element
- The ground-state configuration of a negative ion of a halogen
- The ground-state configuration of a common ion of an alkaline earth element

Questions 8–10

- a. a solution with a pH less than 7 that is not a buffer solution
b. a buffer solution with a pH between 4 and 7
c. a buffer solution with a pH between 7 and 10
d. a solution with a pH greater than 7 that is not a buffer solution
e. a solution with a pH of 7

(Ionization constants:



- A solution prepared to be initially 1 M in NaCl and 1 M in HCl.
- A solution prepared to be initially 1 M in Na_2CO_3 and 1 M in CH_3COONa
- A solution prepared to be initially 0.5 M in CH_3COOH and 1 M in CH_3COONa

Questions 11–14

- a. hydrogen bonding
b. hybridization
c. ionic bonding
d. resonance
e. van der Waals forces (London dispersion forces)

- Is used to explain why iodine molecules are held together in the solid state
- Is used to explain why the boiling point of HF is greater than the boiling point of HBr
- Is used to explain the fact that the four bonds in methane are equivalent
- Is used to explain the fact that the carbon-to-carbon bonds in benzene, C_6H_6 , are identical

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

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PT Brinkman



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Understanding Psychological Processes that Underlie Test Takers' Choices of Constructed Response Items

Xiang Bo Wang,1999 **Astrochemistry of Cosmic Phenomena** P.D. Singh,2012-12-06 The IAU symposium No 150 Astrochemistry of Cosmic Phenomena was held at the beautiful and scenic town of Campos do Jordao Sao Paulo Brazil from August 5 to 9 1991 and was attended by 111 registered participants with 17 accompanied guests from 19 countries The symposium had a wide ranging discussion of the chemistry of astronomical environments with an emphasis on the description of molecular processes that critically influence the nature and evolution of astronomical objects and the identification of specific observations that directly address significant astronomical questions The subject areas of the symposium included atomic and molecular processes at low and high temperatures and photon interactions the chemical structure of molecular clouds in the Milky Way and in external galaxies the chemistry of outflows and their interactions with the interstellar medium the chemical connections between the interstellar medium and the solar system and pregalactic chemistry The scientific programme comprised of review talks and contributed papers with a general introduction by Professor A Dalgarno and a final overview of the whole symposium by Professor D A Williams Financial supports from the Sao Paulo State Foundation Support FAPESP Brazilian National Research Council CNPq Finance Company of Studies and Projects FINEP Institute of Astronomy and Geophysics of University of Sao Paulo IAG USP and International Astronomical Union IAU are gratefully acknowledged I am greatly indebted to Professor A Resources in Education ,1995 **How to Prepare for the AP Chemistry** Neil D. Jespersen,Neil Jespersen, PH. D.,1999-02 This manual offers two diagnostic exams to help students pinpoint their strengths and weaknesses plus three full length practice exams closely modeled on actual AP chemistry exams *Symposium* International Astronomical Union,1992 *Developing and Validating Test Items* Thomas M. Haladyna,Michael C. Rodriguez,2013-07-18 Since test items are the building blocks of any test learning how to develop and validate test items has always been critical to the teaching learning process As they grow in importance and use testing programs increasingly supplement the use of selected response multiple choice items with constructed response formats This trend is expected to continue As a result a new item writing book is needed one that provides comprehensive coverage of both types of items and of the validity theory underlying them This book is an outgrowth of the author's previous book *Developing and Validating Multiple Choice Test Items* 3e Haladyna 2004 That book achieved distinction as the leading source of guidance on creating and validating selected response test items Like its predecessor the content of this new book is based on both an extensive review of the literature and on its author's long experience in the testing field It is very timely in this era of burgeoning testing programs especially when these items are delivered in a computer based environment Key features include Comprehensive and Flexible No other book so thoroughly covers the field of test item development and its various applications Focus on Validity Validity the most important consideration in testing is stressed throughout and is based on the

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