

Revised April 2013

Comments on 2002 Multiple Choice

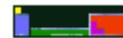
- **Hard Questions**

Of the 75 multiple-choice questions on the MC AP test, there will be a few that are either at the periphery of your knowledge, subtly disguised, or perhaps just really difficult. These used to be (prior to 2011) the ones that you left blank **BUT now there is no penalty for wrong answers, so you should have ZERO blanks – you must guess on all questions that you cannot answer.**

The following questions from the 2002 test are in that, 'hard question' category.

Question	Explanation/Comment	Answer
32	A, C and E are metals that are likely to form ionic (high melting and boiling point) oxides that will be solids at room temperature and pressure. Silicon dioxide forms a giant covalent structure with strong bonds and a high melting and boiling point. Should be able to eliminate A, C and E. Silicon, like carbon (also in group 14) can form giant structures	B
36	Pb^{2+} forms a yellow precipitate of PbI_2 and Ag^+ forms a white precipitate of AgCl . AgCl is soluble in aqueous ammonia to form $[\text{Ag}(\text{NH}_3)_2]^+$. Helps to know color of Lead (II) iodide	B
39	The solubility of potassium nitrate decreases to the greatest extent from 90°C to 30°C , hence it can be recovered most readily by cooling a solution. Solubility curves have not been discussed. Might be able to interpret the graph to get the answer	B
50	Others obviously wrong. If the solid is to be dissolved in distilled water anyway, it doesn't matter that the flask is wet. Should be able to eliminate A, B, D and E even if you do not understand why C is the answer.	C
70	Silicon dioxide forms a giant covalent structure with strong bonds and a high melting and boiling point. Silicon, like carbon (also in group 14) can form giant structures	C

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• Question Analysis

TOPIC	Question Numbers	# of questions	Comments
1 Matter & Measurement	-	0	
2 Atoms, Ions & Nomenclature	23, 43, 55*	3	
3 Electronic Configuration	1, 2	2	
4 Stoichiometry	24, 26, 58, 60, 69	5	
5 Aqueous Solution	7, 11*, 13*, 19, 38, 49*, 51, 65	8	
6 Gases	8, 9, 10, 20, 31, 40*, 66	7	
7 Periodicity	17*, 44, 46	3	
8 Bonding	3*, 4, 5, 28, 29, 32, 48, 53, 56, 67, 70	11	
9 Thermochemistry	14*, 25, 41, 52*, 54*, 73, 74	7	
10 Transition Metal Basics	6, 12*	2	
11 Organic Basics	-	0	
12 Equation Writing	21, 36, 72, 74	4	
13 Equilibrium	15, 16, 18, 37, 42, 68, 75	7	
14 Acids & Bases	22, 30, 33, 34, 61, 63, 64	7	
15 Kinetics	27, 47, 57	3	
16 Electrochemistry	71	1	
17 Colligative Properties	35, 45	2	
Miscellaneous (peripheral knowledge)	39, 50, 59, 62	4	39 Solubility Curves 50 Lab Procedure 59 General Knowledge 62 Organic Isomerism
		75	

3* could also be considered topic 12
11* could also be considered topic 12
12* could also be considered topic 12
13* could also be considered topic 12
14* could also be considered topic 12
17* could also be considered topic 3
40* could also be considered topic 12
49* could also be considered topic 4
52* could also be considered topic 12
54* could also be considered topic 15
55* could also be considered topic 15

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• **Scoring Analysis**

The grade boundaries below are based upon calculating a multiple-choice score by awarding one point for each correct answer, and subtracting 0.25 points for each wrong answer. Questions omitted (blanks) are ignored and do not contribute anything to your overall multiple-choice score. Prior to 2011, the advice was to leave blank any question that you were clueless about, blank; 'clueless' meaning it was not even possible for you to eliminate a single answer choice.

THIS WAS THE FORMAT USED IN THE 2002 EXAM, But from 2011 onwards, there is no penalty for an incorrect answer, i.e., you should ALWAYS guess and you will have ZERO blanks

Since these grade boundaries are calculated using the old format, and we currently have no data for the new format, here is how you should treat your 75 answers to give you an idea of where you currently stand in terms of an AP score.

1. Award one point for each correct answer.
2. Look at all of the questions that you got wrong, and assign them to one of two categories, EITHER
 - a. A question that under the old format you would have left blank, i.e. a question that you were totally clueless about and could not eliminate even ONE answer. (There should be VERY few of these, and in recent years EVEN UNDER THE OLD FORMAT, many Westminster AP chemistry students have had closer to ZERO 'blanks'), OR
 - b. A question that you could eliminate at least one answer, i.e. one that you WOULD have guessed at on the old format.
3. For each question in category 2b., subtract 0.25 points from the total in #1. Do nothing with the questions in category 2a.

Then, in the first column of the chart below, find the range in which your total multiple-choice score falls. The %'s on that line indicate the proportion of candidates with your multiple-choice score that ultimately achieved the final AP score shown in the vertical column. The shaded boxes show the two most likely AP scores within any range. It's worth noting that your position within a range is important. For example, if you are at the top of a range you are much more likely to have ultimately achieved the higher AP scores.

The numbers in parenthesis underneath each percentage indicate the approximate multiple-choice score range that may most closely correspond to that percentage and that AP score. It is important to note that this is not a scientific mathematical analysis, rather a guesstimate! In addition, it is important to understand that there is no guarantee that a particular multiple-choice score relates to a particular AP score.

2002 Multiple-choice score related to final AP score using the old format of penalizing wrong answers

*I assume that all multiple-choice scores above 72.00 resulted in candidates ultimately scoring a 5!

	1	2	3	4	5
61.00-72.00* (48 possible scores in the range)	0.0%	0.0%	0.1% (61.00)	0.7% (61.25)	99.2% (61.50-72.00*)
49.00-60.75 (51 possible scores in the range)	0.0%	0.1% (49.00)	0.8% (49.25)	27.4% (49.50-52.75)	71.7% (53.00-60.75)
37.00-48.75 (51 possible scores in the range)	0.0%	0.5% (37.00)	28.8% (37.25-40.75)	64.4% (41.00-48.00)	6.2% (48.25-48.75)
25.00-36.75 (51 possible scores in the range)	1.0% (25.00)	24.7% (25.25-27.75)	68.3% (28.00-36.00)	6.0% (36.25-36.75)	0.0%
13.00-24.75 (51 possible scores in the range)	39.7% (13.00-17.75)	52.4% (18.00-23.75)	8.0% (24.00-24.75)	0.0%	0.0%
0.00-12.75 (55 possible scores in this range)	98.0% (0.00-12.50)	2.0% (12.75)	0.0%	0.0%	0.0%