



General Certificate of Education

General Studies 5761

Specification A

GSA2 Science, Mathematics and Technology

Report on the Examination

2008 examination - January series

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Unit 2 Section 1

(GSA2/1 Science, Mathematics and Technology)

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

1	B	14	B
2	D	15	C
3	C	16	D
4	D	17	A
5	C	18	A
6	B	19	D
7	D	20	A
8	A	21	A
9	B	22	C
10	A	23	A
11	D	24	A
12	A	25	C
13	B		

Section 1

(Questions 1 – 25)

The passage appeared to be more accessible than in some previous years, and candidates appeared to find the paper overall more straightforward last year, for the overall facility for this section was 73%. Twenty questions had a facility of 65% or greater (all except Questions 6, 7, 12, 23 and 25); nine questions (1, 2, 4, 5, 9, 13, 14, 17 and 20) had a facility greater than 80% but for a clear majority of these the discrimination was still good, and apart from question 14 the discrimination was very acceptable for the others. Question 14 had the highest facility of all questions (90%) and probably because of this had a lower discrimination than expected. Overall however, the discrimination was at an acceptable level despite the high facility for the section. No question had a facility below 35%.

Due to a mistake in the labelling of part of the diagram in **Figure 5**, an erratum had to be issued to clarify the non-polar tail of the protein illustrated. This was tested directly in Question 20 and there was no evidence that candidates had been disadvantaged by the error in the original paper, perhaps at least in part because an explicit description of the protein was given in paragraph 9, directly above **Figure 5**.)

Questions with notable distractors and those which discriminated poorly

Questions 6 and 7 both had a distractor which was more popular than the key. In each case female candidates in particular were attracted to response A which in both questions included the correct response(s) but was not the complete answer in either case. Both questions, however, still discriminated very well between stronger and weaker male and female candidates.

Question 23 had a facility of 60% but also a lower discrimination than had been expected. Both the reason and assertion were correct, and candidates were required to assess whether the reason was a correct explanation of the assertion, which it was. A similar proportion of candidates of all abilities selected the incorrect response B; however the proportion opting for the key was greatest for the most able candidates, and the proportion of candidates choosing the key fell consistently as candidates' ability reduced. The difficulties may have been partly the result of candidates being required to read the material in the passage before the reference in paragraph 10 to the air bubbles being stabilised (referred to in the assertion) and not just looking at subsequent text for the reason.

Other individual questions

Question 3, assessing knowledge of an aqueous solution, was answered correctly by just over 70% of candidates, with the majority of incorrect responses being for option B, the alternative response directly related to water.

In Question 12 virtually all incorrect responses were for option D as candidates failed to interpret the correct value from the graph in the context of the question.

Question 17 had a high facility, but virtually all those failing to select the key chose option B, indicating that they thought the colloid was a sol.

In Question 21 the responses indicated that nearly 20% of candidates believed electricity is needed to make ice cream, presumably by considering how ice cream is made and stored today, rather than reflecting on the significance of the information given in the timeline of **Figure 1**.

Unit 2 Section 2

(GSA2/2 Science, Mathematics and Technology)

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

26	B	39	B
27	A	40	B
28	D	41	C
29	D	42	A
30	B	43	B
31	B	44	B
32	C	45	B
33	A	46	C
34	D	47	A
35	C	48	D
36	A	49	C
37	C	50	C
38	A		

Section 2

(Questions 26 – 50)

Comments on individual questions

Candidates found the examination in this series a little more straightforward than in previous years, as the mean facility for the section rose to 59% (compared to 54% in January 2007). Seven questions had a facility greater than 65% (Questions 26, 27, 28, 31, 34, 44 and 47); of these, Question 28 could be described as discriminating well while all the other six questions discriminated very well, despite the relatively high facility achieved by candidates in each case. No questions had a facility of 35% or less and all questions discriminated between stronger and weaker candidates well or very well.

- In Question 27, in which candidates had to establish the steepest section of the graph, a clear majority of candidates selecting an incorrect response chose option D, presumably just trying to assess the steepness of the lines 'by eye' without any numerical check to confirm if they were correct.
- Question 29 required candidates to use an average speed. Nearly a quarter of all candidates selected response B, indicating that they had not taken account of the inconsistency in the units for time, as the time taken was given in minutes while the speed was given in metres per second.
- Nearly three quarters of all candidates were able to answer Question 34 correctly, with option A attracting a clear majority of incorrect responses, in which candidates were able to identify the relative size of the numbers, but failed to recognise them as not increasing in order of size.
- In Question 35 the most common error was for candidates to identify the mode as the frequency which appeared most often.
- The most popular distractor, attracting 40% of candidates, in Question 36 was D, in which candidates indicated that if an extra result was added to the data then all three measures for the average would alter.
- While the correct response was the most popular for Question 39, more female candidates selected option C than the correct response, taking no account of the fact that the handle was leaning against the wall at an angle.
- While two thirds of candidates were able to answer Question 44 correctly, one quarter of all candidates selected option A, in which the decrease was constant each year.
- A very similar number of candidates selected distractor D in Question 45 as selected the correct response.
- Question 48 was the most effective question at discriminating between stronger and weaker candidates, and while the correct response was the most popular overall, weaker candidates selected response B rather than the correct response (these candidates presumably believing the misconception that a product must be larger than its original factors.)

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.