

Mark Scheme (Final)

June 2008

GCE

GCE General Studies (Unit 6452/01)

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1	<p>e.g. Telescope</p> <ul style="list-style-type: none"> • Movement of planets around Sun/heliocentric model • <u>New</u> astronomical objects eg new planets. Galaxies (not Milky Way), moons (accept other planets) • Big bang/red shift/recession of galaxies/expansion of universe <p>e.g. Microscope</p> <ul style="list-style-type: none"> • Cells or their structure/organelles/ • Organic origin of disease/bacteria/microorganisms • Brownian motion <p>1 mark for any point up to a maximum of 2. Answers do not have to specify the type of instrument so could be two points relating to telescope</p> <p>Do not credit any reference to atoms or atomic structure; DNA or cloning; evolution; IVF</p> <p>Do not credit vague answers such as "Astronomy" or "Medicine" which do not clarify the discovery.</p> <p>Do not credit discovery of Mercury, Venus, Mars, Jupiter or Saturn</p>	2

Question Number	Answer	Mark
2	E (only answer)	1

Question Number	Answer	Mark
3	<ul style="list-style-type: none"> • To create a more caring/better public image/Public relations/present a green or environmental image • To avoid criticism for raising prices • To keep customers (who were upset by the rising energy prices) • To reduce energy/electricity consumption/to reduce costs/conserve resources/make costs affordable 	3

Question Number	Answer	Mark
4	<p>Up to 4 marks from</p> <ul style="list-style-type: none">• Uses less energy/electricity• Less energy/electricity/fossil fuels means less air pollution/less CO2/less costly/reduces carbon footprint• Less waste/dumping of waste/landfill• Landfill/waste dumps are unsightly/use scarce land• Less need for mining• Mining is unsightly• Preserves/uses less named resource eg bauxite/fossil fuels/metal/Aluminium <p>Do not accept "less litter"</p> <p>Do not accept "protects the environment" or less damage to the environment" or "less pollution" on its own.</p> <p>There is no restriction on the number of marks in each part of the answer eg all 4 marks could be awarded in part 1.</p>	4

Question Number	Answer	Mark
5	<ul style="list-style-type: none"> • Need to measure/categorise/assess headaches/find sample with similar symptoms (before treatment) • Subjective nature of self-assessment • Adequate/large/statistically significant sample • Control group needed • Better still have a third group, which has “dummy” acupuncture, because patients will know if they have been treated or not. • Measure/assess the subsequent levels of headaches (records results is insufficient) • Make a (statistical) comparison (between groups, to establish effectiveness) <p>1 mark each point up to 4</p>	4

Question Number	Answer	Mark
6	<p>MEDICAL</p> <ul style="list-style-type: none"> • There may be (genetic or other) <u>damage during storage</u> (which is not detected until the baby is born) (must mention storage) <p>MORAL</p> <ul style="list-style-type: none"> • Will not be able to know (biological) parents/siblings/parents will be dead/will not have a (natural) family • The technique may be considered wrong by believers in certain faiths /by certain religions/some people do not <u>believe</u> we should interfere with natural processes (do not accept just “Playing God”) 	3

Question Number	Answer	Mark
7(a)	B (only answer)	1

Question Number	Answer	Mark
7(b)	<ul style="list-style-type: none"> • More pollution/organochlorines/ organophosphates in cities • obesity more common in cities (than in the countryside) <p>1 mark each point</p>	2

Question Number	Answer	Mark
7(c)	D (only answer)	1

Question Number	Answer	Mark
8	Analogy, rhetoric (no other answers allowed) 1 mark each point up to 2.	2

Question Number	Answer	Mark
9	<p>Up to 3 marks for strength/weakness of evidence</p> <ul style="list-style-type: none"> • Thomas presents argument from authority • Coren uses ridicule/humour/straw man/ad hominem/largely opinion/sarcasm • Boston study is scientific/statistical/factual <p>Up to 3 marks for argument from</p> <ul style="list-style-type: none"> • Argument ignores/there are other factors eg diet/exercise/lifestyle/sedentary jobs • Animals should be affected in a similar way • Pollution affects obese people more 	4

A02 Mark Scheme	
3 marks (above average)	The answer is clear and lucid, (writing in correct form is taken as a matter of course) arguments are coherent and well laid out, there are very few grammatical or spelling errors.
2 marks (average)	The answer is broadly understandable, writing is in the correct form, arguments are on the whole coherent, and grammar and spelling do not inhibit communication.
1 mark (below average)	The answer is only understandable in parts, writing may be in an inappropriate form, arguments are not clearly expressed, and in places grammar and spelling inhibit communication.
0 marks (exceptionally poor)	The answer is badly expressed or fails to treat the question too seriously, there may be serious lapses of grammar and spelling OR there is too little of the candidate's own writing to assess reliably (as is sometimes the case in Section B).

Section C

10 New technological developments happen so quickly these days that most people cannot keep up with them. Therefore we should slow all such development down.

How far do you agree with this conclusion? Use examples to support your argument.

Level	Mark	Indications of level for this question
Level 0	0	Irrelevant or facetious answer.
Level 1	1	Partial and inconclusive answer Selects and marshals a limited range of evidence relevant to the question, but with NO CONCLUSION either implied or explicit.
Level 2	2-6	Superficial or formulaic answer with a simple conclusion Selects and marshals a limited range of evidence to draw a simple conclusion or express a personal opinion, which may not be appropriate. The answer may consider two views in a simple for/against format with little explanatory comment or relevant evidence. Low L2 answers may mention one or more technological developments eg Internet, digital devices, transport High L2 answers may offer a simple yes or no answer without any supporting reasons.
Level 3	7-11	An answer which develops mainly one viewpoint, but which may refer briefly to other viewpoints. Selects and interprets a moderate range of specific evidence, and uses it to draw a justified conclusion. Low L3 answers will describe at least one technological development and explain an associated problem or benefit eg transport and pollution, medicine and increased health High L3 answers will describe at least two technological developments and associated benefits or problems and link these to whether changes should be slowed down.
Level 4	12-16	A developed answer which examines coherently, and in a more balanced way, two sides of the question. Selects, interprets and begins to evaluate specific evidence to show awareness of differing points of view, and uses it to draw a justified conclusion(s) Low L4 answers will give at least two <u>contrasting</u> examples and reasons for slowing the pace of change or not. High L4 answers will also assess other factors eg scientific development either as the driving forces behind change or as a consequence of changes.
Level 5	17	A fully balanced perceptive answer.

11. Scientists believe that recent climate change has been brought about by a huge increase in the use of fossil energy sources by a rapidly increasing human population. (17)

Is it possible for science alone to prevent further climate change?

Level	Mark	Indications of level for this question
Level 0	0	Irrelevant or facetious answer.
Level 1	1	Partial and inconclusive answer Selects and marshals a limited range of evidence relevant to the question, but with NO CONCLUSION either implied or explicit.
Level 2	2-6	Superficial or formulaic answer with a simple conclusion Selects and marshals a limited range of evidence to draw a simple conclusion or express a personal opinion, which may not be appropriate. The answer may consider two views in a simple for/against format with little explanatory comment or relevant evidence. Low L2 answers may make a simple comment about climate change (eg extinction of some species/rising temperature/sea levels) OR the use of fossil fuels (eg fossil fuels are limited) OR population increase (eg leads to increased demand) High L2 answers may offer a simple yes or no answer without any supporting reasons.
Level 3	7-11	An answer which develops mainly one viewpoint, but which may refer briefly to other viewpoints. Selects and interprets a moderate range of specific evidence, and uses it to draw a justified conclusion. Low L3 answers will describe some alternative energy sources OR suggest decreasing energy usage OR limiting population growth High L3 answers will link alternative energy to scientists OR energy usage/population control to other areas eg economy, social factors (ie not to science)
Level 4	12-16	A developed answer which examines coherently, and in a more balanced way, two sides of the question. Selects, interprets and begins to evaluate specific evidence to show awareness of differing points of view, and uses it to draw a justified conclusion(s) Low L4 answers will consider and illustrate with examples two viewpoints ie scientists can or cannot make changes on their own. High L4 answers will consider competing pressures in different countries or may consider the different responsibilities which should fall upon eg the developed nations
Level 5	17	A fully balanced perceptive answer.

12. Country A is a small country that believes it is threatened by other larger countries. It is developing varieties of deadly bacteria as an inexpensive form of biological weapon. Country B is a neighbour of A and proposes to develop these bacteria as well, in order to produce vaccines to safeguard its citizens.

Examine the moral responsibilities of scientists faced by these developments.

Level	Mark	Indications of level for this question
Level 0	0	Irrelevant or facetious answer.
Level 1	1	Partial and inconclusive answer Selects and marshals a limited range of evidence relevant to the question, but with NO CONCLUSION either implied or explicit.
Level 2	2-6	Superficial or formulaic answer with a simple conclusion Selects and marshals a limited range of evidence to draw a simple conclusion or express a personal opinion, which may not be appropriate. The answer may consider two views in a simple for/against format with little explanatory comment or relevant evidence. Low L2 answers may be limited to very simple comments such as "Making weapons is wrong". High L2 answers will recognise that there may be an ethical problem eg "Scientists have to think about the good or bad effects of what they do".
Level 3	7-11	An answer which develops mainly one viewpoint, but which may refer briefly to other viewpoints. Selects and interprets a moderate range of specific evidence, and uses it to draw a justified conclusion. Low L3 answers will describe at least one moral or ethical position of a scientist in either country eg "Scientists can work on defensive weapons" or "Scientists should not be involved in offensive weapons development" High L3 answers will describe at least one moral or ethical position of a scientist in both countries
Level 4	12-16	A developed answer which examines coherently, and in a more balanced way, two sides of the question. Selects, interprets and begins to evaluate specific evidence to show awareness of differing points of view, and uses it to draw a justified conclusion(s) Low L4 answers will compare the ethical positions of scientists in both countries OR may argue that whatever the case "Scientists do not make decisions about the applications of science" (and therefore do not have any moral responsibility) OR may describe the competing pressures on a scientist eg professional ethics/duty to country/personal responsibilities High L4 answers will also give an example eg Einstein and the bomb/scientists at Los Alamos/scientists working in Nazi Germany or Soviet Russia.

Level 5	17	A fully balanced perceptive answer.
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