

Mark Scheme - FINAL

June 2010

GCE 2008

GCE General Studies Unit 1
6GS01

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.

Section A

Question Number	Answer	Mark
Q1	A	1

Question Number	Answer	Mark
Q2	D	1

Question Number	Answer	Mark
Q3	A	1

Question Number	Answer	Mark
Q4	C	1

Question Number	Answer	Mark
Q5	D	1

Question Number	Correct Answer	Mark
Q6	C	1

Question Number	Answer	Mark
Q7	B	1

Question Number	Answer	Mark
Q8	B	1

Question Number	Answer	Mark
Q9	B	1

Question Number	Answer	Mark
Q10	A	1

Question Number	Answer	Mark
Q11	C	1

Question Number	Answer	Mark
Q12	D	1

Question Number	Answer	Mark
Q13	C	1

Question Number	Answer	Mark
Q14	D	1

Question Number	Answer	Mark
Q15	C	1

Question Number	Answer	Mark
Q16	B	1

Question Number	Answer	Mark
Q17	D	1

Question Number	Answer	Mark
Q18	C	1

Question Number	Answer	Mark
Q19	A	1

Question Number	Answer	Mark
Q20	B	1

Section B

Question Number	Acceptable Answers	Reject	Mark
21	70-74%;		1

Question Number	Acceptable Answers	Reject	Mark
22	<p>Advantage - one from (Easier to) compare/see trends/patterns/differences/ highest/lowest;</p> <p>Disadvantage - one from Accurate/precise/exact/detailed reading difficult (Accept figures are estimated from scale)/large differences can be difficult to show/some bars may be very small or difficult to measure;</p>	<p>Clear; Easy to understand; Easy to read; Easy to analyse;</p> <p>Difficult to draw; Figures are rounded; No trend over time; Figures are averages; No info to back up data; vague; unclear;</p>	<p>1</p> <p>1</p>

Question Number	Acceptable Answers	Reject	Mark
23	<p>(a) Accept any three from</p> <p>Wind; Wave; Hydroelectric; Tidal Barrage (Accept tidal or barrage on their own);</p> <p>Award 2 marks for 3 correct, 1 mark for 2 correct, ignoring any other references ie if any list contains 3 correct then award 2 marks</p> <p>(b) Accept one from</p> <p>Solar; Biomass/biofuel/bioethanol/bio waste/wood; (Nuclear) fusion; Geothermal</p>	<p>Nuclear; Pumped storage; Rain; Dam;</p> <p>Fission; Nuclear on its own; Ethanol on its own; Sunlight; Compost; Manure;</p>	<p>2</p> <p>1</p>

Question Number	Acceptable Answers	Reject	Mark
24	<p>Selects 5 (%); (award mark if 5 appears anywhere in answer)</p> <p>Selects 7000 (MW); (award mark if 7000 appears anywhere in answer)</p> <p>Answer 140 000 (MW);</p> <p>Award 3 marks for 140 000 (even with no calculations shown)</p> <p>NB No unit error</p> <p>Accept other answers eg 140 GW or 1.4×10^{11} W only if it is clear that candidate has carried out a correct unit conversion</p>		3

Question Number	Acceptable Answers	Reject	Mark
25	<p>But, like the tunnel, it is hoped that the project would lead to economic regeneration in local communities;</p> <p>Accept any quote including words in bold</p>		1

Question Number	Acceptable Answers	Reject	Mark
26	<p>(a)</p> <p>compensate/make up for/cancel out/balance/neutralise emissions/levels of carbon/CO2 (in some process/product);</p> <p>reduce carbon/CO2 emissions or levels;</p> <p>OR</p> <p>Emit no carbon/CO2</p> <p>(b)</p> <p>planting trees to make up for carbon emitted elsewhere eg in air travel (accept just "plant trees" as a minimum)/ solar panel amount of carbon saved during operation exceeds carbon cost (not just "solar panel" on its own)</p>	<p>Wind;</p> <p>Wave;</p> <p>Hydroelectric;</p> <p>Tidal;</p> <p>Carbon capture;</p> <p>Recycling;</p> <p>Electric car;</p>	<p>2</p> <p>1</p>

Question Number	Acceptable Answers	Reject	Mark
27	<p>Any two points from</p> <p>Renewables/wind/wave are intermittent/unreliable (accept pumped storage is not dependent on weather/conditions or is more reliable);</p> <p>(pumped storage) stores energy/GPE;</p> <p>energy/electricity needed can be supplied by renewables;</p> <p>energy available/released when required/on demand;</p>	<p>Any reference to environmental damage</p>	2

Question Number		
28		
Marking Guidance		
After marking the answer for AO2, assess it for communication, AO4.		
	A02: <i>Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.</i>	Mark
	<p>Award up to 4 marks for identifying advantages, and additional marks for assessing advantages. The mark for identifying is simply for identifying an advantage of the barrage for comparison with other renewables ie reliability of supply, how good is the technology, payback time, environmental issues, economic issues and amount of electricity generated. To gain the mark for assessing, an answer must make some comparison between the barrage and other renewables by making a qualified comment which does not simply say one is better than the other. It may link or select evidence from different parts of the passage, it may extend or add to the information given, or it may evaluate the evidence in relation to other renewables. Examples are given below</p> <p>A Identify - Barrage is reliable; Assess - will supply energy at known times and in known quantities and is not intermittent like many other renewables such as wind or wave which are dependent on weather.</p> <p>B Identify - Barrage is based on well established technology; Assess - some renewables dependent on technological developments which may not happen although many renewables eg wind now in widespread use with established technology. Technology for wave power is largely unproven/still being tested and other technologies may be on the horizon.</p> <p>C Identify - Payback time; Assess - for carbon emissions during construction of barrage is short (but construction time very long). Many other renewables can be implemented much more quickly but may have a longer payback time or may not even achieve payback.</p> <p>D Identify - Environmental Impact; Assess - Less noise and visual impact than wind farms. A barrage may reduce risk of flooding and environmental impact on wildlife could be managed.</p> <p>E Identify - Economic Issues; Assess -regeneration of local economy but high cost in relation to other renewables. Other technologies also provide employment but in a more dispersed way.</p> <p>F Identify - Large amount of electricity generated; Assess- barrage can generate 5% /same as 4 power stations compared to 4% for all other renewables (from bar chart), but other renewables are still relatively undeveloped.</p>	5

	Mark	Descriptor
		<p><i>AO4:</i> <i>Communicate clearly and accurately in a concise, logical and relevant way.</i></p> <p><i>The AO4 marks are NOT dependent upon the AO2 marks.</i></p>
	0	The answer is badly expressed, not relevant or fails to treat the question seriously, there are many serious lapses in grammar and spelling or there is too little of the candidate's own writing to assess reliably.
	1	The answer is only understandable in parts, writing may be in an inappropriate form, arguments are not clearly expressed, rarely relevant and in places grammar and spelling inhibit communication.
	2	The answer is broadly understandable, writing is in the correct form. Arguments are on the whole coherent, mainly relevant and grammar and spelling do not inhibit communication.
	3	The answer is clear and lucid, (writing in correct form is taken as a matter of course) arguments are coherent and well laid out, and relevant, there are very few grammatical or spelling errors.

Question Number		
29		
Marking Guidance:		
After marking the answer for AO3, assess it for communication, AO4.		
	<p>A03: <i>Demonstrate understanding of different types of knowledge, appreciating their strengths and limitations.</i></p>	Mark
	<p>The following marking points are awarded independently. Only 1 mark can be awarded under each letter.</p> <p>A Award 1 mark for identifying/quoting at least 2 relevant pieces of evidence;</p> <p>B Award 1 mark for making a general comment about the strength or weakness of evidence; (eg evidence is strong/weak or includes fact/opinion) OR for discussing the advantages and disadvantages of the barrage</p> <p>C Award 1 mark for correctly identifying a relevant statement as a fact, such as -</p> <p>commitment to reduce emissions; figures on electricity generation; environmental concerns ; barrage would supply 5% of electricity; payback time of 6 months; high cost/in excess of £15 billion;</p> <p>D Award 1 mark for correctly identifying a relevant statement as an opinion, such as -</p> <p>"we can only reducerenewable energy sources" ; author's comments about environmentalists; "the sooner the barrage is built/author's conclusion; (accept that the author displays bias)</p> <p>E Award 1 mark for argument by analogy is a weak form of argument;</p> <p>(accept objective/scientific knowledge or statistics for fact accept subjective knowledge for opinion)</p>	<p>Max 4</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>

	Mark	Descriptor
		<p><i>AO4:</i> <i>Communicate clearly and accurately in a concise, logical and relevant way.</i></p> <p><i>The AO4 marks are NOT dependent upon the AO3 marks.</i></p>
	0	The answer is badly expressed, not relevant or fails to treat the question seriously, there are many serious lapses in grammar and spelling or there is too little of the candidate's own writing to assess reliably.
	1	The answer is only understandable in parts, writing may be in an inappropriate form, arguments are not clearly expressed, rarely relevant and in places grammar and spelling inhibit communication.
	2	The answer is broadly understandable, writing is in the correct form. Arguments are on the whole coherent, mainly relevant and grammar and spelling do not inhibit communication.
	3	The answer is clear and lucid, (writing in correct form is taken as a matter of course) arguments are coherent and well laid out, and relevant, there are very few grammatical or spelling errors.

Section C

Question Number	Background	
30	<p>Scientific knowledge uses inductive arguments based on empirical facts ie facts based on sensory observation. Induction means that although there are many facts of which we are as certain as we can be, we can never be absolutely certain because we can only ever make a limited number of observations to support our inductive argument. Popper tries to solve this “problem” by pointing out that although we can never prove anything absolutely, we can disprove things. He claimed, somewhat dubiously some would say, that this argument was based on deduction and therefore provides a sounder base. If we accept Popper’s falsificationism, science can never prove things only disprove them. The inductive basis of science leads to bigger problems in some areas than others. Hooke’s/Boyle’s/Chales’ law will invariably work unless the circumstances are anomalous in some way, but a doctor will only ever be able to give someone a probable diagnosis/prognosis, whose accuracy will depend on many details. As our knowledge, for example of DNA, improves the accuracy of the diagnosis/prognosis will also improve. It is this which has largely driven significant improvements in health care in recent years.</p> <p>The empirical basis of science mean that it can only answer questions which relate to observable facts. This certainly excludes questions relating to purpose such as “What is the purpose of life”, as well as questions about non-observable entities such as the human soul, God etc. It is of course true that as scientific knowledge has increased some questions have been answered. For example the question “Are we at the centre of the Universe/God’s creation?” Could not have been answered in any meaningful way until astronomy proved otherwise (at least in a scientific sense). The third area which empiricism seems to exclude is ethics, where science is often described as having no ethical dimension (while this may or may not be true, it is normally accepted that scientists have ethical/moral obligations). Another way of approaching this is to ask whether ethics can have an empirical basis. Most people would say no, although there are theories of ethics which claim otherwise.</p>	
Marking Guidance		
After marking the answer for AO1 and AO2, assess it for communication, AO4.		
	Mark	Descriptor
	0-8	<p>Award 1 mark for each valid point, up to a maximum of 8 marks, such as:</p> <p>Points related to nature of science</p> <p>A1 Science is empirical/based on observation; A2 Observations lead to theories; A3 Through induction/testing; A4 Science explains how/science doesn’t explain why; A5 Ethics/morals not normally part of science; A6 Science arises from human curiosity/desire to explain;</p> <p>Points related to religion/ethics/morals</p> <p>A7 Religion is based on faith/holy texts/cannot be tested; A8 Morals may come from religion or experience; A9 Religion addresses questions of purpose - ie why as opposed to how; A10 Religion was also a way of explaining the world;</p>

		<p>Examples of conflicting/changing views</p> <p>A11 Origin of Earth/universe/Big Bang; A12 Copernicus/geocentric system; A13 Darwin and evolution; A14 Explanations for miracles; A15 Explanations for natural phenomena eg earthquakes/disease;</p> <p>The above points are illustrative only and not exhaustive. Any other valid points must be credited, even if they don't appear in the list above.</p>
	Mark	<p>Descriptor</p> <p>A02: <i>Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.</i></p>
	0-8	<p>Award 1 mark for each valid point, up to a maximum of 8 marks.</p> <p>The question requires candidates to critically examine conflicting views/alternative viewpoints. Candidates who give consideration solely to one side of the question are limited to a maximum of 6 marks.</p> <p>Points should be used to demonstrate how evidence is marshalled by:</p> <ul style="list-style-type: none"> • Selecting: identifying and applying relevant evidence • Interpreting: showing how evidence helps to answer the question • Evaluating: assessing the strength of the evidence in support of the question • Integrating: using evidence to develop a coherent argument/conclusion <p>Note - evidence can be information, data, concepts or opinions</p> <p>The following areas are likely to be addressed by a majority of candidates, but candidate responses are not restricted to these areas. Other valid points must be credited, even if they don't appear in the list below.</p> <p>Marshalling evidence</p> <p>B1 Because science depends on 'facts' and religion depends on faith, they can often clash;</p> <p>B2 Because science depends on facts, scientific explanations should reach the same conclusion;</p> <p>B3 Because religion/moral views depend on faith or experience they can arrive at different conclusions;</p> <p>B4 Because science is a system of explaining things it will continue to explain more things in the future;</p> <p>B5 Because science enables new technologies it can itself create moral issues eg IVF, animal testing, nuclear weapons;</p> <p>Drawing conclusions</p> <p>B6 Conclusion which is simple (implicit or explicit) 1 mark</p> <p>B7 Conclusion linked to limited evidence/arguments 2 marks</p> <p>B8 Conclusion balanced and comprehensive 3 marks</p> <p>Any other valid points must be credited.</p>

Mark	Descriptor
	<p><i>AO4:</i> <i>Communicate clearly and accurately in a concise, logical and relevant way.</i></p> <p><i>The AO4 marks are not dependent upon the AO1 and AO2 marks.</i></p>
0	The answer is badly expressed or fails to treat the question seriously, there are many serious lapses in grammar and spelling or there is too little of the candidate's own writing to assess reliably.
1	The answer is only understandable in parts and maybe irrelevant, writing may be in an inappropriate form, arguments are not clearly expressed, and in places grammar and spelling inhibit communication.
2	The answer is generally understandable, writing is often in the correct form. Arguments are sometimes coherent and relevant, and grammar and spelling do not seriously inhibit communication.
3	The answer is broadly understandable, writing is in the correct form. Arguments are on the whole coherent and relevant, and grammar and spelling do not inhibit communication.
4	The answer is clear and lucid, (writing in correct form is taken as a matter of course) arguments are coherent, well laid out and relevant, there are very few grammatical or spelling errors.

Question Number	Background	
31	<p>Civil liberties are normally associated with human rights. Human rights are seen as more fundamental and involving basic expectations such as the right to life or freedom of speech. In this country civil liberties are more often taken to mean those rights associated with freedom from interference by others and in particular the state. Not many people would argue that we have a basic human right not to be recorded by CCTV cameras when shopping but the spread of surveillance techniques means that at the very least our privacy is threatened. Currently we are free to go about our daily business without interference from the police or other state bodies unless we commit an offence yet under the proposed identity card legislation we would be obliged to carry and produce an identity card or face punishment.</p> <p>Modern surveillance technology includes CCTV, phone-tapping, email monitoring, number-plate recognition which can track the movements of vehicles, biometric identity cards and passwords and the National DNA Database. The extent to which these things can help in the fight against crime or terrorism is disputed. The NDNAB provides a good example. The police produce figures to show that the NDNAB has helped in solving many crimes, many of them serious, and argue that the existence of a complete database of all citizens would reduce and deter crime. Against that, many civil liberty groups argue that the state has no right to hold the DNA of innocent people who, they argue, are being treated unfairly. Does that mean it would be fair if we all had our DNA profiles on the database rather than just those people unlucky enough to have been arrested at some stage during an investigation. There are plans in the pipeline to force the communications industry to make available to the state records of all email communications. The recent parliamentary report into the 7/7 bombings in London made an important point. Just having surveillance in place is not enough. The limiting factor is our ability to identify important information and act on it, not the volume of information.</p>	
Marking Guidance		
After marking the answer for AO1 and AO2, assess it for communication, AO4.		
	Mark	Descriptor
	0-8	<p><i>AO1:</i> <i>Demonstrate relevant knowledge and understanding applied to a range of issues, using skills from different disciplines.</i></p> <p>Award 1 mark for each valid point, up to a maximum of 8 marks, such as:</p> <p>A1 Examples of other modern surveillance technology eg email monitoring, ID cards, mobile phone tracking - allow up to 2 marks for examples; A2 CCTV/ surveillance helps catch criminals/provides evidence of crime; A3 CCTV/ surveillance deters crime; A4 CCTV/ surveillance can be used to track/monitor criminals; A5 CCTV/ surveillance has increased/examples/big brother society; A6 CCTV/ surveillance threatens privacy; A7 Civil liberties linked to human rights; A8 Misuse/data protection/Youtube;</p> <p>The above points are illustrative only and not exhaustive. Any other valid points must be credited, even if they don't appear in the list above.</p>

	Mark	Descriptor									
	0-8	<p data-bbox="394 212 1495 300">A02: <i>Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.</i></p> <p data-bbox="394 306 1166 338">Award 1 mark for each valid point, up to a maximum of 8 marks.</p> <p data-bbox="394 369 1495 457">The question requires candidates to critically examine conflicting views/alternative viewpoints. Candidates who give consideration solely to one side of the question are limited to a maximum of 6 marks.</p> <p data-bbox="394 491 1224 522">Points should be used to demonstrate how evidence is marshalled by:</p> <ul data-bbox="394 527 1344 653" style="list-style-type: none"> • Selecting: identifying and applying relevant evidence • Interpreting: showing how evidence helps to answer the question • Evaluating: assessing the strength of the evidence in support of the question • Integrating: using evidence to develop a coherent argument/conclusion <p data-bbox="394 657 1154 688">Note - evidence can be information, data, concepts or opinions</p> <p data-bbox="394 716 1495 804">The following areas are likely to be addressed by a majority of candidates, but candidate responses are not restricted to these areas. Other valid points must be credited, even if they don't appear in the list below.</p> <p data-bbox="394 837 656 869">Marshalling evidence</p> <p data-bbox="394 873 1435 930">B1 Actual examples where surveillance has helped to catch a criminal or deter crime - allow up to 2 marks for examples;</p> <p data-bbox="394 934 1349 966">B2 Because it increases the chance of being caught it is an effective deterrent;</p> <p data-bbox="394 970 1198 1001">B3 Because (the perception of crime is reduced) people feel safer;</p> <p data-bbox="394 1005 1289 1037">B4 Because it is effective, crime may be displaced to areas without CCTV;</p> <p data-bbox="394 1041 1495 1098">B5 Because it is effective criminals may alter their behaviour to take account of it eg alter appearance;</p> <p data-bbox="394 1102 1378 1134">B6 Because of surveillance/CCTV, non-criminals may also change their behaviour;</p> <p data-bbox="394 1167 704 1199">Drawing conclusions</p> <table data-bbox="394 1203 1289 1283"> <tr> <td data-bbox="394 1203 456 1234">B7</td> <td data-bbox="456 1203 1170 1234">Conclusion which is simple (implicit or explicit)</td> <td data-bbox="1170 1203 1289 1234">1 mark</td> </tr> <tr> <td data-bbox="394 1236 456 1268">B8</td> <td data-bbox="456 1236 1170 1268">Conclusion linked to limited evidence/arguments</td> <td data-bbox="1170 1236 1289 1268">2 marks</td> </tr> <tr> <td data-bbox="394 1270 456 1302">B9</td> <td data-bbox="456 1270 1170 1302">Conclusion balanced and comprehensive</td> <td data-bbox="1170 1270 1289 1302">3 marks</td> </tr> </table> <p data-bbox="394 1346 875 1377">Any other valid points must be credited.</p>	B7	Conclusion which is simple (implicit or explicit)	1 mark	B8	Conclusion linked to limited evidence/arguments	2 marks	B9	Conclusion balanced and comprehensive	3 marks
B7	Conclusion which is simple (implicit or explicit)	1 mark									
B8	Conclusion linked to limited evidence/arguments	2 marks									
B9	Conclusion balanced and comprehensive	3 marks									

Mark	Descriptor
	<p><i>AO4:</i> <i>Communicate clearly and accurately in a concise, logical and relevant way.</i></p> <p><i>The AO4 marks are not dependent upon the AO1 and AO2 marks.</i></p>
0	The answer is badly expressed or fails to treat the question seriously, there are many serious lapses in grammar and spelling or there is too little of the candidate's own writing to assess reliably.
1	The answer is only understandable in parts and maybe irrelevant, writing may be in an inappropriate form, arguments are not clearly expressed, and in places grammar and spelling inhibit communication.
2	The answer is generally understandable, writing is often in the correct form. Arguments are sometimes coherent and relevant, and grammar and spelling do not seriously inhibit communication.
3	The answer is broadly understandable, writing is in the correct form. Arguments are on the whole coherent and relevant, and grammar and spelling do not inhibit communication.
4	The answer is clear and lucid, (writing in correct form is taken as a matter of course) arguments are coherent, well laid out and relevant, there are very few grammatical or spelling errors.