

Mark Scheme (Results)

January 2012

GCE General Studies (6GS03)
Paper 01
Change and Progress

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# **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.

Questio n No.	Question	
1		
		Mark
	<ol> <li>Can measure the amount of energy needed/earth's surface to sustain human beings/organism(s)</li> <li>Measure the amount of energy/earth's surface for manufacture/activity</li> <li>Measures a deficit (more energy than land available)</li> <li>Allows comparison of the effect of humans with other organisms/animals</li> <li>Allows comparison of the impact of one set of humans with another/different countries/societies</li> <li>The impact of human activity – e.g. keeping a pet or running a car</li> <li>The implication of our commodities and owning possessions</li> <li>mark each point up to 3</li> </ol>	3

Questio n No.	Question	
2		
		Mark
	<ol> <li>Light energy falls on it from the sun/solar panels generating electricity</li> <li>Heat energy from the sun absorbed in solar thermal systems</li> <li>Light energy is absorbed by plants growing there/photosynthesis/food production/as a result can be used to produce biofuels</li> <li>In a large area, water falling may be used to generate electricity</li> <li>The area may contain fossil fuels such as coal or oil, which can then be used in energy using devices</li> <li>Geothermal energy eg Iceland</li> <li>Some land may be used for generating electricity through nuclear power</li> <li>Wind farms/turbines can be set up on suitable land/sea areas</li> <li>Interpreting "land" as "earth surface" include tidal generation or wave power.</li> <li>mark each point up to 3</li> </ol>	3

Question No.	Question	
3		
		Mark
	<ol> <li>Possible arguments/set of suggestions</li> <li>Humans are omnivorous, so can choose a variety of foods</li> <li>Farming provides us with a wide range of animals and vegetables from which we can choose</li> <li>However producing plant foods to eat requires less energy (smaller eco footprint) than producing animal based food</li> <li>Therefore, if we need to reduce our eco-footprint it makes more sense to grow and eat plants alone; hence vegetarianism is a good thing</li> <li>Reducing the numbers of farm animals (many of which produce methane as a waste product) reduces the use of energy overall and also possibly global warming.</li> <li>There is insufficient evidence to support such an argument, as the amount of plant food that a person needs to sustain them may be significantly more than animal derived food.</li> <li>There are health benefits attributable to eating plant material over a meat-based diet.</li> <li>There is a moral/religious issue over rearing and killing animals for human food.</li> <li>mark any point up to 4</li> </ol>	4

Question No.	Question	
4		I
		Mark
	Please note: the explanations below are intended to help examiners understand the concepts. We do not necessarily expect candidates to use the phrases or the technical terms outlined.  Give credit where it is clear that the candidate has the basic idea. Award 1 mark for identifying the issue and a second	6
	mark for any development.	
	1. An issue based on <b>rights</b> and <b>development</b> . For example – all humans have rights, based on the belief that humans are equal; if they are equal then the inequality of conditions measured by the footprint is wrong. Further development may explore the reasons for the inequality.	
	<ol> <li>An issue based on utility and development. For example – the footprint measures an inequality which can be submitted to the (hedonic) calculus, and subsequently whether the inequality is immoral because it does not provide the greatest good for the greatest number.</li> <li>An issue based on moral code(s) and development. For</li> </ol>	
	example – a religion may pronounce the difference as wrong, based on the revelations subscribed to by that religion.	
	4. An issue based on the <b>social contract</b> and <b>development</b> . For example – the difference may simply reflect the fact that the footprint measures differences in two different populations, and	

y be justifiable because the contra countries.	cts may be different in the
rs gaining 6 marks should consist on the development.	of 3 instances of a moral $3 \times 2 = 6$

Question No.	Question			
5				
Indicative	content		Mark	
	energy dema required to s and driving a also fails to	the source is limited to a mechanistic comparison of the ands of different organisms, as well as the energy support a common human activity, such as maintaining a car. The evidence presented is limited as stated but include any objective evidence of the benefits of car nd pets e.g. lowered health care costs attributable to ip.		
	appraisal of provided by travel in any	y any arguments which depend on a subjective human activity – for example, the support and comfort companion animals; or the rights that we have to way we wish – are apparently ignored.  should consider both these aspects to reach level 3 and		
AO2	Marshall evid	dence and draw conclusions: select, interpret, evaluate e information, data, concepts and opinions.	Mark	
	Level	Criteria		
	0	Fragmentary, content is inaccurate, missing or miniscule, reaches no conclusion.	0	
	1	Limited, (mainly) one sided answer with a simple conclusion	1	
	2	Selects and marshals a limited range of evidence to draw a simple conclusion, which may or may not be appropriate. There may be little explanatory comment	2	
	3	A developed answer which largely examines one viewpoint or looks at two sides of the argument in a superficial and unspecific manner. Selects and interprets evidence, and uses it to draw a justified conclusion or conclusions.  Explanatory comment may be simple and restricted but might also be <b>either</b> clearly interpreted and applied to a single view of the question <b>or</b> addresses different views in a superficial way with few specifics and little or no development.	3	
	4	Evidence is used to examine contrasting viewpoints. Selects, interprets and begins to evaluate evidence to show clear awareness of differing points of view, and uses it to draw a justified conclusion or conclusions. The range may be limited and the evidence evaluated in a simple way or the range may be wider and the evaluation more developed.	4	

A03	Demonstrate understanding of different types of knowledge, appreciating their strengths and limitations.
	(Up to 6 marks)

AO3

# Candidates should make clear the nature of the evidence they are using. Allow 1 mark for each question that you can answer YES.

- 1. Does the candidate comment on whether or not the evidence comes from *reliable scientific measurements*?
- 2. Does the candidate comment on whether or not the argument is dependent on *authoritative* statements?
- 3. Does the candidate make it clear that the writer may have **axes to grind**?
- 4. Does the candidate test whether the arguments rely on **assertions**, which are **not scientifically supported**?
- 5. Does the candidate question whether or not scientists provide us with *unbiased information*?
- 6. Does the candidate question whether or not the writer *interprets scientific findings correctly*?
- 7. Does the candidate make it clear that the writer does not develop the *problems associated with political decisions and law-making*?

  Up to a maximum of 6.

AO4	Communicate clearly and accurately in a concise, logical and relevant		
	way		
	The AO4 marks are not dependent upon the AO2 and	d AO3 marks	
A mark show	ald be given for the level of written communication using		
these guide	lines.		
The answer	is badly expressed or fails to treat the question seriously;	(0 marks)	
there are m	any serious lapses in grammar and spelling, or there is an	(Exceptionally	
insufficient	amount of candidates' own writing to assess.	poor)	
The answer	The answer is only understandable in parts, writing may be in an (1 mark)		
inappropriat	inappropriate form, arguments are not clearly expressed, and in (Below		
places gram	places grammar and spelling inhibit communication average)		
The answer	The answer is broadly understandable, writing is in the correct form. (2-3 marks)		
Arguments	Arguments are on the whole coherent, and grammar and spelling do (Average)		
not inhibit c	not inhibit communication.		
	is clear and lucid, (writing in correct form is taken as a	(4 marks)	
matter of co	ourse) arguments are coherent and well laid out, there are	(Above	
very few gra	very few grammatical or spelling errors. average)		

Question No.	Question	
6		
	Answer	Mark
	A (1 mark)	2
	C (1 mark)	
	No alternatives	

Question No.	Question	
7		
	Answer	Mark
	<ol> <li>Leonardo's scientific records/notebooks/papers were widely separated after his death</li> <li>His work in science did not become known until 19C</li> <li>His scientific achievements were not able to be compared with, say, Newton's and Galileo's which were made in the mid-17<sup>th</sup> century.</li> <li>Leonardo made little impact in his lifetime to the advancement of science and so lacked support for his status as a scientist. The quality of his work has been recognised more in retrospect.</li> <li>Candidates may also refer to the difficulty of reading and interpreting Leonardo's hand written notebooks (mirror writing and peculiar formats), this can be credited.</li> <li>Leonardo's achievement as an artist were so outstanding, and perceived so in his life time that his other work was probably overshadowed.</li> <li>Leonardo was known as a military engineer and architect (hired by the Duke of Milan) but not as a scientist – however scientists in a modern sense were not a recognised "type" in his time.</li> </ol>	4
	mark up to a maximum of 4	

Question No.	Ouestion	
8		
	Answer	Mark
	Allow up to 2 marks for identifying a field and the role of observation in it.  Allow up to 2 further marks for any examples and further discussion of the importance of observation (eg the importance of observation in discerning patterns leading to new hypotheses and supporting theories; the role of observation in an artistic field can be very wide and used in a variety of ways by the artist).  Possible fields:  Art – detailed drawings, portraiture/landscape/detail  Architecture – drawings, measurement, detail  Zoology – observing living animals, behaviour, structural details  Geology and palaeontology – field observations  Anatomy – drawing and communicating details  Engineering – careful measurement and observation	4

Question No.	Question	
9		
	Answer	Mark
	AO2	6
	A1. The organisms were clearly once living organisms A2. Based on what we know of living things, how could they obtain food in rock? A3. How could they move to get food? A4. They clearly show growth rings like living shells	
	Up to 2 marks	
	AO3	
	Strengths: B1. He justifies his challenge, using his observations B2. He gives an argument containing premises (e.g) and a conclusion (e.g) B3. He uses inductive arguments B4. His evidence is objective B5. He challenges subjective views (e.g. belief in the Biblical flood; belief that shells can grow in rocks) Weaknesses:	
	B6. He provides no evidence that a living thing actually turns into rock and hence becomes a fossil	
	B7. He does not explain how the shells got there B8. He was only studying rocks from a small area of Italy	
	B9. It's his opinion against other authorities	
	Up to 4 marks	
	Up to a total of 6	

Questio	Question	
n No.	Question	
10		
Indicativ	re content	Mark
AO2	A1. The source praises Leonardo's achievements and views on just one aspect of biology – the nature and origin of fossils.  A2. This is a limitation in supporting the writer's view of Leonardo as an artistic and scientific superstar.  A3. However, Leonardo's reasoning on the nature and interpretation of fossils is very much in line with modern thinking, from which we could generalise.  A4. The source makes only passing reference to the outstanding nature of his artistic achievements – Leonardo's paintings are widely revered and priceless.  A5. There is little evidence in the source that Leonardo had any special view of the culture he represented.  A6. There is little evidence that his work was inhibited by restrictive religious views – he appears to be free to challenge a biblically derived explanation for the existence of fossils on mountains.  A7. There are no references in the source to particular modern artists, so one is left to import one's own knowledge and views on them. This is a weakness of the evidence.  A8. Someone who was such a polymath would probably not have flourished in a modern culture where specialists are afforded more respect.  A9. His apparent lack of inhibition in his work may however have given him the ability to make more links between apparently different areas of knowledge, overlooked by experts in individual fields.  Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.	Mark
Level	(Up to 4 marks) Criteria	Mark
0	Fragmentary, content is inaccurate, missing or miniscule, reaches no conclusion.	0
1	Limited, (mainly) one sided answer with a simple conclusion	1
2	Selects and marshals a limited range of evidence to draw a simple conclusion, which may or may not be appropriate.  There may be little explanatory comment	2
3	A developed answer which largely examines one viewpoint or looks at two sides of the argument in a superficial and unspecific manner. Selects and interprets evidence, and uses it to draw a justified conclusion or conclusions. Explanatory comment may be simple and restricted but might also be <b>either</b> clearly interpreted and applied to a single view of the question <b>or</b> addresses different views in a superficial way with few specifics and little or no development.	3

4	Evidence is used to examine contrasting viewpoints.  Selects, interprets and begins to evaluate evidence to show clear awareness of differing points of view, and uses it to draw a justified conclusion or conclusions.  The range may be limited and the evidence evaluated in a simple way or the range may be wider and the evaluation	4
	more developed.	

A03	Demonstrate understanding of different types of knowledge, appreciating their strengths and limitations. (Max 6 marks)	
Mark AO3 b	by asking yourself the following questions and awarding ONE	6
mark where	e you can answer 'YES', up to 6 marks:	
1. Does the	candidate refer to identified, but not necessarily quoted, evidence?	
2. Does the candidate subject the evidence to albeit limited <i>critical scrutiny?</i>		
3. Does the	answer distinguish between <i>fact</i> and <i>opinion</i> ?	
4. Does the answer identify any issues of <b>bias</b> or <b>prejudice</b> ?		
5. Does the candidate refer to the strength or weakness of <b>arguments</b> used?		
6. Is an overall objective assessment made of the <i>sufficiency</i> of the <i>evidence</i>		
and <b>arguments</b> presented?		

A04	Communicate clearly and accurately in a concise, logical and relevant way  (Max 4 marks) The AO4 marks are not dependent upon the AO2 and AO3 marks		
A mark shou	ld be given for the level of written communication using		
these guideli	nes.		
The answer i	s badly expressed or fails to treat the question seriously;	(0	
	there are many serious lapses in grammar and spelling, or there is an insufficient amount of the candidates' own writing to assess		
The area of the second		(1 mark)	
The answer is broadly understandable; writing is in the correct form. (2-3			
Arguments are on the whole coherent, and grammar and spelling do not inhibit communication.  marks		marks)	
The answer is clear and lucid, (writing in correct form is taken as a		(4 marks)	

#### **SECTION C**

# Marking of Questions - Levels of response

The mark scheme provides an indication of the sorts of answer that might be found at different levels. The exemplifications of content is not exhaustive. It is intended as a guide and it will be necessary for examiners to use their professional judgement in deciding both at which level a question has been answered and how effectively points have been sustained. Candidates should always be rewarded on the quality of thought expressed in their answers and not solely on the amount of knowledge conveyed. However candidates with only a superficial knowledge will be unable to develop or sustain points sufficiently to move to higher levels.

In assessing the quality of thought, consider whether the answer:

- is relevant to the question and is explicitly related to the question's terms
- argues a case when requested to do so
- is able to make the various distinctions required by the question
- has responded to all the various elements in the question
- where required, explains, analyses, discusses assesses and deploys knowledge appropriately rather than simply narrates

# Using the levels mark scheme

Examiners must mark initially on the A)2/AO3 levels. In order to arrive at a level, examiners must look for a best fit to the descriptors. Within the level, examiners must start at the middle mark and move up or down according to the quality of response.

Having fixed the level, the answer should be assessed using the AO3 and AO4 descriptors. Answers which are placed in the lower levels are unlikely to achieve a high mark in AO3.

Examiners are required to make use of the full range of marks.

Question No.	Question
11	

## Indicative content

#### AO1

- A1. Medical background to the possibility
- A2. Risks of such procedures
- A3. Reasons why parents may wish to choose
- A4. Advice that parents may be given
- A5. Health service implications/ costs

## AO<sub>2</sub>

- B1. Moral aspects: Selection based on sex is viewed by many as opening the door on all sorts of selection criteria. If this selection was permitted is the moral case for restricting further choice not weakened?
- B2. Cultural aspects. The problems that arise when social pressures and choice are applied to children's sex are clear from examples such as China. In many cultures, boys are often more valued than girls. Could employing such medical techniques make problems in such cultures even worse?
- B3. Scientific aspects. There may be many scientific issues to do with safety, advice to parents, further research.

# Synoptic features

Candidates are required to look at the question from a range of viewpoints and disciplines. They need to draw together, or compare and contrast, different ideas on the nature of science and medical advances, societal objectives and human needs. They may also bring together ideas from other areas – ethical issues, utilitarianism, aesthetic issues about human living.

AO1	Demonstrate relevant knowledge and understanding applied to a range of issues, using skills from different disciplines				
AO2	Marsh	Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.			
LEVEL	AOs	Indicators of level	Mark	Mark range	
0	AO1 AO2	Irrelevant or facetious answers Irrelevant or facetious answers	0	0	
1	AO1 AO2	Insufficient evidence to assess Incomplete or inconclusive answer	0	1	
2	AO1	Limited (in variety or amount) range of evidence drawn from a simple discipline Superficial or formulaic answer	1 1-6	2-7	
3	AO1	Some evidence used from two or more disciplines	2	8-13	
	AO2	Issue examined from one or more viewpoints but in a superficial or unbalanced manner	6-11		
4	AO1	Range of evidence drawn from two or more disciplines, showing some understanding	3	14-18	
	AO2	Issue examined in a balanced and coherent way from two or more viewpoints	11-15		
5	AO1	A good range of evidence, showing clear understanding	4	19-20	
	AO2	A balanced perceptive and evaluative answer	15-16		

A03	Demonstrate understanding of different types of knowledge, appreciating their strengths and
	limitations.
	(Max 4 marks)
Mark AO3 by ask	ing yourself the following guestions and awarding ONE

Mark AO3 by asking yourself the following questions and awarding ONE mark where you can answer 'YES', up to 4:

- 1. Does the candidate refer to identified, but not necessarily quoted, evidence?
- 2. Does the candidate subject the evidence to albeit limited critical scrutiny?
- 3. Does the answer distinguish between *fact* and *opinion*?
- 4. Does the answer identify any issues of bias or prejudice?
- 5. Does the candidate refer to the **strength** or **weakness** of **arguments** used?
- 6. Is an overall objective assessment made of the **sufficiency** of the **evidence** and **arguments** presented?

A04	AO4  Communicate clearly and accurately in a concise, logical and relevant way  (Max 6 marks) The AO4 marks are not dependent upon the AO2 and AO3 marks		
A mark shou	ld be given for the level of written communication using		
these guideli	nes.		
The answer i	s badly expressed or fails to treat the question seriously;	(0	
there are ma	iny serious lapses in grammar and spelling, or there is an	marks)	
insufficient a	mount of the candidate's own writing to assess.		
The answer i	The answer is only understandable in parts, writing may be in an (1		
inappropriate form, arguments are not clearly expressed, and in <b>ma</b>			
places grammar and spelling inhibit communication			
The answer i	s broadly understandable, writing is in the correct form.	(3-4	
Arguments are on the whole coherent, and grammar and spelling do marks)			
not inhibit communication.			
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		marks)	
very few gra	mmatical or spelling errors.		

Question No.	Question
12	
Indicative content	

## AO1

# Answers may consider

- A1. A comparison/discussion of change and progress
- A2. Nature of British elections
- A3. Types of election campaign
- A4. Responsibilities of government
- A5. Recent history of British governments/ long period of big majority Labour
- A6. Answers may refer to election campaigns in other countries, notably the 2008 US presidential campaign, which focussed heavily on "change" and "Yes we can!".

## AO2

( Although candidates may not make clear distinctions between these reasons, since the question does not overtly ask for them, candidates' answers will refer, sometimes indirectly, to them)

- B1. Political reasons for example, the electorate may be tired of the existing government, and only be too glad to make a change, whether it is progressive or not.
- B2. Social reasons for example, the electorate may be attracted to the idea that another party might be given the chance to govern.
- B3. Cultural reasons for example, the nature of this electorate may have changed, through a range of events, and the consequent outcome of the election might be a change which is not necessarily progressive.
- B4. Moral reasons for example, the existing government may have made such profoundly questionable moral decisions that a change is necessary. This might also entail progress (to a better moral climate).

# Synoptic features

Candidates are required to look at the question from a range of viewpoints and disciplines. They need to draw together, or compare and contrast, different ideas on the nature of politics and government. They may also bring together ideas from different areas – moral, cultural, social and aspects of politics.

A01	Demonstrate relevant knowledge and understanding applied to a range of issues, using skills from different disciplines			
AO2	Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.			
LEVEL	AOs	Indicators of level	Mark	Mark range
0	AO1	Irrelevant or facetious answers	0	0
	AO2	Irrelevant or facetious answers	0	
1	AO1	Insufficient evidence to assess	0	1
	AO2	Incomplete or inconclusive answer	1	
2	AO1	Limited (in variety or amount) range of evidence drawn from a simple discipline	1	2-6
	AO2	Superficial or formulaic answer	1-5	
3	AO1	Some evidence used from two or more disciplines	2	8-13
	AO2	Issue examined from one or more viewpoints but in a superficial or unbalanced manner	6-11	
4	AO1	Range of evidence drawn from two or more disciplines, showing some understanding	3	14-18
	AO2	Issue examined in a balanced and coherent way from two or more viewpoints	11-15	
5	AO1	A good range of evidence, showing clear understanding	4	19-20
	AO2	A balanced perceptive and evaluative answer	15-16	

AO3	Demonstrate understanding of different types of knowledge, appreciating their strengths and limitations. (Max 5 marks)			
	yourself the following questions and	4		
awarding a mark w				
1. Does the candidate	e refer to identified, but not necessarily quoted,			
evidence? If YES a	ward one mark			
2. Does the candidate	e subject the evidence to albeit limited <i>critical</i>			
scrutiny? If YES a	ward one mark			
3. Does the answer distinguish between fact and opinion?				
If YES av	ward one mark			
4. Does the answer id	4. Does the answer identify any issues of bias or prejudice?			
If YES av	ward one mark			
5. Does the candidate refer to the strength or weakness of				
arguments used? If YES award one mark				
6. Is an overall objective assessment made of the <i>sufficiency</i> of the				
evidence and arguments presented?				
If YES award one mark				

Communicate clearly and accurately in a concise, logical and relevant way  {Max 4 marks) The AO4 marks are not dependent upon the AO2 and AO3 marks			
	ld be given for the level of written communication using		
these guideli	nes.		
The answer i	s badly expressed or fails to treat the question seriously;	(0	
there are ma	ny serious lapses in grammar and spelling, or there is an	marks)	
insufficient a	mount of the candidate's own writing to assess.		
The answer i	s only understandable in parts, writing may be in an	(1-2	
inappropriate form, arguments are not clearly expressed, and in			
places grammar and spelling inhibit communication			
The answer i	s broadly understandable, writing is in the correct form.	(3-4	
Arguments a	Arguments are on the whole coherent, and grammar and spelling do marks)		
not inhibit communication.			
The answer is clear and lucid, (writing in correct form is taken as a (5)			
matter of course) arguments are coherent and well laid out, there are <b>mark</b>			
very few gra	mmatical or spelling errors.		

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