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Mark Scheme (Results)

June 2017

GCE General Studies (6GS01/01)

Unit 1: Challenges for Society

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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.

Paper 1 Mark Scheme

Section A

Question Number	Answer	Mark
Q1	C both fact and opinion 'significant' is opinion and '18%' is fact	(1)

Question Number	Answer	Mark
Q2	D Consuming more vegetables with meat helps to lower the risk The report quotes 'plant-based foods that have a protective effect against cancer'. There is no direct evidence in the report to support the other three possible conclusions.	(1)

Question Number	Answer	Mark
Q3	C 17 900 41,581 multiplied by 43% = approximately 17,900	(1)

Question Number	Answer	Mark
Q4	A fact only Statement is only fact and no opinion	(1)

Question Number	Answer	Mark
Q5	D 7 Extra 18% of six out of every hundred people = 7	(1)

Question Number	Correct Answer	Mark
Q6	B local councils All others have funded clinical trials	(1)

Question Number	Answer	Mark
Q7	C the theory of evolution Creationism is the alternative to evolution	(1)

Question Number	Answer	Mark
Q8	B state and religion are separate Answer B fits the definition of secular	(1)

Question Number	Answer	Mark
Q9	B slander All the other answers are criminal offences	(1)

Question Number	Answer	Mark
Q10	D induction The prediction is based on a number of specific events in the past and so is induction.	(1)

Question Number	Answer	Mark
Q11	B produces the greatest happiness of the greatest number Answer B is the principal of utilitarianism.	(1)

Question Number	Answer	Mark
Q12	A fallacy A fallacy is defined as the use of faulty reasoning	(1)

Question Number	Answer	Mark
Q13	D 1.47% 493 158 divided by 33 508 901 then x 100% = 1.47%	(1)

Question Number	Answer	Mark
Q14	C 6.2 8 240 958 000 divided by 1 339 724 852	(1)

Question Number	Answer	Mark
Q15	A 3 285 298 2 069 738 000 divided by area = 630, therefore area is 3 285 298	(1)

Question Number	Answer	Mark
Q16	B depleting the ozone layer CFCs cause depletion of the ozone layer	(1)

Question Number	Answer	Mark
Q17	D favouring the simplest explanation This is the accepted principle of Occam's razor	(1)

Question Number	Answer	Mark
Q18	D post-traumatic stress Stem cell research has possible benefits to all apart from post-traumatic stress	(1)

Question Number	Answer	Mark
Q19	A gained by making observations This is the accepted meaning of 'empirical'	(1)

Question Number	Answer	Mark
Q20	A has been designed to have a purpose This is the accepted meaning of 'teleological'	(1)

Section B

Question Number	Acceptable Answers	Mark
21	<p>Four marks AO2</p> <p>NOTE: more than one mark may be awarded per response.</p> <ol style="list-style-type: none"> 1. Replaces the need for fossil fuels. 2. Seawater can be used as a fuel source. 3. Cold fusion can be achieved using simple/cheap equipment. 4. Reduced emissions of CO₂/greenhouse gases compared to conventional energy supplies. 5. Enabling almost limitless energy 6. to be provided cheaply 	(4)

Question Number	Acceptable Answers	Mark
22	<p>Passage summary</p> <p>The content of the passage suggests that 'Endless Energy from Cold Fusion' is not within easy reach for several reasons.</p> <ol style="list-style-type: none"> 1 The research carried out by Pons and Fleischmann lacked rigour. 2 Their research could not be duplicated by other scientists. 3 It could take a long time to produce useful results. 4 Scientists are incentivised to fabricate results/biased reporting of results/publish results before checking results. <p>Mark AO3 by asking yourself the following questions and awarding a mark where appropriate (max four):</p> <p>A1 - Does the candidate refer to or discuss evidence from the passage?</p> <p style="text-align: right;">If YES award one mark only.</p> <p>A2 - Does the candidate correctly refer to types of evidence, e.g. objectivity, subjectivity, facts, and opinions?</p> <p style="text-align: right;">If YES award one mark only.</p> <p>A3 - Does the candidate refer to the sufficiency of the evidence or any gaps, flaws or bias? For example does the passage supply adequate evidence to back his argument?</p> <p style="text-align: right;">If YES award one mark only.</p> <p>A4 - Does the candidate correctly refer to named types of argument (e.g. inductive, analogy, causal or from authority)?</p>	

	<p style="text-align: right;">If YES award one mark only.</p> <p>A5 - Does the candidate make a qualified statement referring to strength of argument/evidence? For example fact is a stronger evidence, inductive arguments tend to be stronger than authority. If YES award one mark only.</p> <p>A6 - Does the candidate identify specific evidence (e.g. a quotation) as a fact or opinion in the passage? If YES award one mark only.</p> <p>After marking for AO3, assess it for communication, AO4 (Max 3 Marks). Total Mark = 7</p>	(4)
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Question Number	Acceptable Answers	Mark
23	<p>Award one mark for each bullet point - max three marks.</p> <p>A1 - the large cost can be spread over many nations (1) A2 - reducing the individual cost (1) A3 - increasing the total amount spent (1) A4 - a greater pool of expertise/resources (1) A5 - scientists to work together/share work or discoveries (1) A6 - leading to faster progress (1) A7 - amount of research would increase (1) A8 - between nations can be improved (1) A9 - leading to cooperation in other areas (1) A10 - promoting peaceful relations (1) A11 - allows poorer countries to benefit (1)</p> <p>Accept other appropriate alternatives.</p>	(3)

Question Number	Acceptable Answers	Mark
24(a)	<p>AO1 one mark</p> <ul style="list-style-type: none"> • Coal (1) • Natural gas/methane (1) • Wood (1) • Biomass (1) • Peat (1) • Shale gas (1) • Alcohol from biomass (1) <p>Note: NOT fracking and NOT fossil fuel</p>	(1)

Question Number	Acceptable Answers	Mark
24(b)	AO1 one mark – allow the technology linked to the energy source e.g. allow wind turbine, solar panel etc. <ul style="list-style-type: none"> • Wind (1) • Hydroelectric (1) • Solar (1) • Tidal (1) • Wave (1) • Geothermal (1) • Nuclear fission (1) NOT nuclear fusion 	(1)

Question Number	Acceptable Answers	Mark
25	AO1 credit one mark for each correct point – max four <ul style="list-style-type: none"> • Observations made. • Hypothesis formed. • Make a prediction. • Test/research/experiments/investigations on prediction. • Revise hypothesis. • Theory confirmed by results. 	(4)

Question Number	Marking Guidance	
26	A02: <i>Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.</i>	Mark
	Up to two marks from: A1 - There are no facts presented (although the WEC could be considered as an authority) in terms of our current reserves and/or rate of usage /based on opinion. A2 - New reserves may be discovered, this is frequently the case as new reserves are discovered or capacity of existing stocks revised. A3 – demand may fall or increase/other energy sources used/ new uses found for crude oil A4 – it is a prediction/estimate/assumption/based on little evidence	(2)

27	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 one mark for each of the points made by the writer in the passage to explain why there are problems in developing the cold fusion process. (Max 5)</p> <p>A1- Scientists are motivated by objectives other than the goal of cold fusion.</p> <p>A2- For example, winning the Noble prize (personal ambition).</p> <p>A3 - This has provided an incentive for scientists to fabricate results/take shortcuts in their research.</p> <p>A4 - Military involvement indicated in the passage, may have a use in warfare. Results from this type of research are likely to be kept secret from the rest of the scientific community.</p> <p>A5 - Commercial involvement, companies such as Canon with scientific expertise may wish to exploit the process purely for financial gain.</p> <p>A6 - The enormous cost of ongoing and lengthy research limits the potential for scientists to pursue the aim of developing cold fusion.</p> <p>A7 - Governments can manipulate scientific priorities according to political objectives.</p> <p>A8 - Environmental concerns may accelerate research for example.</p> <p>A9 – cooperation and communication between researchers are needed.</p> <p>Accept other appropriate alternatives.</p> <p>Maximum five marks for AO2</p> <p>Maximum three marks for AO4</p>	(5)
Mark	<p>A04: <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, well laid out, and relevant, there are very few grammatical or spelling errors.	

Section C

Question Number	Marking Guidance
<p>28</p>	<p>Introduction</p> <p>Since we are not using a levels mark scheme, we focus on individual points or statements made by candidates, giving a separate mark for each.</p> <p>AO1 involves knowledge and understanding, which we usually see in the form of a factual statement.</p> <p>For AO2, we are looking for 'so . . .' or 'therefore . . .' or 'because...' or 'so what this means is . . .' statements. If you can put these words (or similar) in front of something the candidate has written then it is probably involving explanation, interpretation, evaluation, integration of ideas, exemplification (selection of suitable materials/examples), so one AO2 mark can be awarded for each such point.</p> <p>After marking the answer for AO1 and AO2, assess it for communication, AO4.</p> <p>Responses from candidates from their own knowledge constitute scoring points for AO1 mark, up to a maximum of eight marks. Expected responses are detailed below; however, this is not intended to be a definitive list.</p>
<p>Mark</p>	<p>AO1: <i>Demonstrate relevant knowledge and understanding applied to a range of issues, using skills from different disciplines.</i></p>
<p>0-8</p>	<p>Award one mark for each valid point, up to a maximum of eight marks, such as:</p> <p>Points relating to the primary purposes of imprisonment</p> <p>A1 - Retribution/punishment. It is based on the principle that offenders should suffer for what they have done.</p> <p>A2 - Punishment suggests conditions should be harsh</p> <p>A3 - Perception that prisoners in the UK have a cushy life, with privileges beyond what many consider necessary.</p> <p>A4 - Protection of the public by removing the offender from society.</p> <p>A5 - To deter other potential criminals for fear of being caught and imprisoned. Figures suggest crime rates are decreasing.</p> <p>A6- To rehabilitate the prisoners, by education, training, by gradually integrating the prisoner back into society.</p> <p>A7 - Biggest benefit to society as a whole is if prisoners do not reoffend.</p> <p>A8 - No other choice of punishment, when all other methods have been tried and been ineffective.</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	A02: <i>Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.</i>
0-8	<p>Award one mark for each valid point, up to a maximum of eight 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>In recent years it has been found that most candidates make a clear point of knowledge/understanding (AO1) and then offer some evaluation of interpretation leading to an AO2 mark being awarded. So the AO2 marks in any one answer depend very much on the AO1 points the candidate decides to introduce.</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>B1 - Offenders should be punished for offences so that victims can feel justice has been done.</p> <p>B2 - Punishment normally suggests hard conditions in which life is difficult and unpleasant to some degree, but this is not the case on Balstoy, this argument could be extended to the UK where prisoners enjoy privileges many would describe as luxuries.</p> <p>B3 - Prisoners are locked up, so therefore are unable to commit crime, thereby protecting society.</p> <p>B4 - The source makes the point that there is no correlation between the harshness of the punishment and reoffending; indeed, quite the opposite. Society as a whole will benefit greatly from lower rates of reoffending – examples of which are valid scoring points.</p> <p>B5 - Education and further training in prison should be prioritised as main aims, as this will reduce the chances of reoffending in the future.</p> <p>B6 - Up to 3 marks for drawing and developing a valid conclusion.</p> <p>Any other valid points must be credited.</p>

Mark	A04: <i>Communicate clearly and accurately in a concise, logical and relevant way.</i> <i>The A04 marks are not dependent upon the A01 and A02 marks.</i>
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	Marking Guidance
<p>29</p>	<p>Introduction</p> <p>Since we are not using a levels mark scheme, we focus on individual points or statements made by candidates, giving a separate mark for each.</p> <p>AO1 involves knowledge and understanding, which we shall usually see in the form of a factual statement.</p> <p>For AO2, we are looking for 'so . . .' or 'therefore . . .' or 'because...' or 'so what this means is . . .' statements. If you can put these words (or similar) in front of something the candidate has written then it is probably involving explanation, interpretation, evaluation, integration of ideas, exemplification (selection of suitable materials/examples) so one AO2 mark can be awarded for each such point.</p> <p>After marking the answer for AO1 and AO2, assess it for communication, AO4.</p> <p>Responses from candidates from their own knowledge constitute scoring points for AO1 mark, up to a maximum of eight marks. Expected responses are detailed below; however, this is not intended to be a definitive list.</p> <p>After marking the answer for AO1 and AO2, assess it for communication, AO4.</p>
<p>Mark</p>	<p>AO1: <i>Demonstrate relevant knowledge and understanding applied to a range of issues, using skills from different disciplines.</i></p>
<p>0-8</p>	<p>Award one mark for each valid point of knowledge/understanding up to a maximum of eight marks. The question requires a discussion of the relationship between scientific discoveries and potential conflicts. Those who consider only one of these aspects will be limited to a max of 6 marks.</p> <p>Note: The question is asking about scientific discoveries not methodology.</p> <p>Answers must focus on the linkages between science and religion. This may be discussed in terms of:</p> <p>Areas where religious beliefs cause conflict:</p> <ul style="list-style-type: none"> A1 - Darwin's theory of evolution v Adam and Eve A2 - heliocentric v geocentric model/the place of earth in the universe A3 - scientists' view that the universe was created by Big Bang A4 - religious view of Creation A5 - science determined age of the universe (13.7 billion years), much shorter age asserted by religious sources, e.g. Ussher A6 - Science is based on observations and facts A7 - Religion is based on belief A8 - Miracles Vs natural explanations A9 - medical treatment v religious dogma (ignore abortion and euthanasia)

	<p>A10 - examples of different science theories/discoveries where there is no conflict such as (up to four):</p>
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- atomic theory
- theory of relativity
- discovery of X-rays
- discovery of radioactivity
- + many others.

Mark	A02: <i>Marshall evidence and draw conclusions: select, interpret, evaluate and integrate information, data, concepts and opinions.</i>
0-8	<p>Award one mark for each valid point, up to a maximum of eight 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 six 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 - Religion and science only conflict in certain areas where religion has a view. In particular these involve the place of humans in the universe. AO1 points such as Darwin may be developed into AO2 scoring points; for example, Darwin's theory of evolution accounts for the emergence of humans by a process of natural selection, religious belief is that God created Man, so these views are incompatible and thus lead to conflict. Similar arguments can be made for other conflicts between science and religion for AO2.</p> <p>B2- Religious views are difficult to prove false as they are based on belief.</p> <p>B3- Science is based on observations and facts.</p> <p>B4- Some notable scientists have also held strong religious views, for example Newton.</p> <p>B5- Other discoveries/theories do not challenge religious principles and therefore do not lead to conflict.</p> <p>B6 - Up to 3 marks for drawing and developing a valid conclusion</p> <p>Any other valid points must be credited.</p>

Mark	<p>A04: Communicate clearly and accurately in a concise, logical and relevant way.</p> <p>The A04 marks are not dependent upon the A01 and A02 marks.</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.
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