

Write your name here

Surname

Other names

Centre Number

Candidate Number

**Edexcel GCE**

# General Studies

**Advanced**

**Unit 3: Change and Progress**

Tuesday 14 June 2011 – Morning

**Time: 1 hour 30 minutes**

Paper Reference

**6GS03/01**

**You must have:**

Insert (enclosed)

Total Marks

## Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions in Sections A and B and **one** question in Section C.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- Do not return the insert with the question paper.

## Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*
- Quality of written communication will be taken into account in the marking of your answers  
– *you should take particular care with your spelling, punctuation, grammar and clarity of expression.*

## Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Check your answers if you have time at the end.

Turn over ►

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**SECTION A**

**Answer ALL questions.**

**You should aim to spend no more than 30 minutes on this section.**

**Read Sources 1 and 2 on the separate insert and then answer questions 1–6.**

**1** Explain why some newspapers seem keen to link extreme weather events to climate change.

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**(Total for Question 1 = 3 marks)**



2 What are the general features of scientific research?

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**(Total for Question 2 = 4 marks)**



3 In Source 1, the project leader said, "...the weather logs helped to prove the effect on the climate of volcanic eruptions". How might another scientist challenge this claim?

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**(Total for Question 3 = 3 marks)**



**4** Using Source 1, explain why historical weather observations from ships at sea are particularly useful to climatologists.

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**(Total for Question 4 = 2 marks)**

**5** How well does the evidence in Source 2 justify the description of climate change claims as “misleading”?

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**(Total for Question 5 = 4 marks)**



**6** How far do the arguments and evidence used in Sources 1 and 2 support the idea that large-scale long-term climate change is inevitable?

Dotted lines for writing the answer.



Area with horizontal dotted lines for writing.

**(Total for Question 6 = 14 marks)**

**includes 4 marks for Quality of Written Communication**

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**TOTAL FOR SECTION A = 30 MARKS**



**SECTION B**

**Answer ALL questions.**

**You should aim to spend no more than 30 minutes on this section.**

**Read Source 3 on the separate insert and then answer questions 7–11.**

**7 (a)** Give **two** studies referred to by the writer that have misled us on our understanding of the reasons for criminal behaviour.

**(2)**

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**(b)** How far might such studies provide a moral basis for dealing with violent criminals in the future?

**(4)**

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**(Total for Question 7 = 6 marks)**





**8** Using Source 3, explain the meaning of the term “correlation”.

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**(Total for Question 8 = 4 marks)**



**9** How would a knowledge of the causes of aggressive behaviour by women help or hinder our understanding of the link between gender and aggression?

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**(Total for Question 9 = 3 marks)**



**10** From the evidence in Source 3, explain why it is not possible to decide if there are genetic causes of criminality.

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**(Total for Question 10 = 4 marks)**

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**11** The writer claims that scientific studies have misled the public about the causes of criminal behaviour. How far do the evidence and arguments used in Source 3 justify this claim?

Dotted lines for writing.



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**(Total for Question 11 = 13 marks)**  
**includes 4 marks for Quality of Written Communication**

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**TOTAL FOR SECTION B = 30 MARKS**



## SECTION C

There are two questions in this section. You should answer ONE of them.  
Write your answer in the space provided.

Put a cross in the box  indicating the question you have chosen.  
If you change your mind, put a line through the box   
and then put a cross in the other box .

You are reminded that an appropriate conclusion to your argument is required.  
In answering the question you should consider arguments for and against the statement.

Chosen question number:            **Question 12**  

**Question 13**  

**12** "If the human race wishes to have a prolonged and indefinite period of material prosperity, they have only got to behave in a peaceful and helpful way to one another, and science will do for them all they wish and more than they can dream."

Winston Churchill (1874–1965)

Evaluate this assertion.

**(Total for Question 12 = 30 marks)**

**includes 6 marks for Quality of Written Communication**

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**13** Every 10 years UK householders are required to answer dozens of questions on a census form. Many pages of statistics are produced as a result.

How far can the compilation and use of such statistics be justified?

**(Total for Question 13 = 30 marks)**

**includes 6 marks for Quality of Written Communication**

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Lined writing area with horizontal dotted lines.





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**TOTAL FOR SECTION C = 30 MARKS**

**TOTAL FOR PAPER = 90 MARKS**



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**Edexcel GCE**

# **General Studies**

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**Insert**

**Do not return the insert with  
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*Turn over* ►

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## Source material

### Source 1

#### **Captain Cook's weather logs help scientists predict climate changes**

Captain James Cook's weather reports, which he logged meticulously at noon each day on his voyages to unknown lands (1768–79), are helping scientists to predict climate changes. Ships' logs from Cook's *Endeavour* and *Resolution* and 300 other 18th and 19th-century explorers' vessels are being transcribed and digitised. This will allow climatologists to trace changing weather patterns. There are plenty of land-based weather reports from this period, but very little is known about the climate history of the three quarters of the world's surface covered by sea.

Dennis Wheeler, the leader of a project investigating these logs and a climatologist, said that the thermometer readings were almost always taken in the shade of the unheated cabin and were therefore directly comparable with modern readings. Captains needed to log very accurate weather details, including wind speed and direction, in order to gauge their longitude.

Wheeler said that the weather logs helped to prove the effect on the climate of volcanic eruptions. Several captains observed a decline in temperature in 1816, which became known as the year without a summer. The eruption of Mount Tambora in Indonesia in 1815 sent so much sun-reflecting sulphur into the atmosphere that global temperatures dipped the following year, with snow reported in June in New York State.

Source: adapted from Ben Webster, *The Times*, 6 October 2009

## Source 2

### **Scientists must rein in misleading climate change claims**

News headlines vie for attention and it is easy for scientists to grab this attention by linking climate change to the latest extreme weather event or by making apocalyptic predictions. But in doing so, the public perception of climate change can be distorted. Not all extreme meteorological events arise when natural variations in the weather and climate combine with long-term changes. This message is more difficult to get heard. Scientists and journalists need to find ways to help to make this clear without the wider audience switching off.

Recent headlines have proclaimed that Arctic summer sea ice has decreased so much in the past few years that it has already reached a tipping point. The truth is that there is little evidence to support this. Indeed, the record-breaking losses in the past couple of years could easily be due to natural fluctuations in the weather, with summer sea ice increasing again over the next few years. This diverts attention from the real, longer-term issues. For example, recent results from the Met Office do show that there is a detectable human impact in the long-term decline in sea ice over the past 30 years, and all the evidence points to a complete loss of summer sea ice much later this century if we take no action. This is just one example where scientific evidence has been selectively chosen to support a cause.

Source: adapted from Vicky Pope, *www.guardian.co.uk*, 11 February 2009

### Source 3

#### **Born to be wild?**

It has long been a topic for debate – should criminal behaviour be attributed to our genes or our environment? Historically, some studies have been notorious for misleading us on the matter.

It is common knowledge that sex in humans is determined by the inheritance of either two X chromosomes, producing a female, or an X and a Y chromosome, producing a male. It has been argued that since, on average, males are more aggressive this may be brought about by the presence of the Y chromosome. There might be a gene or genes on this chromosome that affect behaviour. Rarely, some individuals have more than two sex chromosomes through some accident in the formation of the eggs or sperm. There are known to be females with XXY and males with XYY. These individuals have associated problems; often they have a disability and a lower than average IQ. Over thirty years ago, a study of 200 men in a secure psychiatric hospital found 7 had an extra Y chromosome. This incidence was thought to be much higher than in the general population, and it was suggested that the extra chromosome, or genes on it, caused these individuals to be more aggressive. Later, other studies of prisoners in the US claimed to show a correlation between the possession of an extra Y chromosome and criminal behaviour.

This explanation has not stood the test of time. Subsequent research has shown that, because the XYY individuals have lower IQs and are from poorer backgrounds, they are more likely to be caught if they are involved in criminal or aggressive activity. However, it is rather obvious that the Y chromosome is correlated with criminality and violence since males form the great majority of the prison population.