

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCE**

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

# General Studies

## Advanced Subsidiary

### Unit 1: Challenges for Society

Thursday 14 May 2015 – Afternoon  
**Time: 1 hour 30 minutes**

Paper Reference

**6GS01/01**

**You must have:**  
Insert (enclosed)  
Calculator

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.
- 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

P43445A

©2015 Pearson Education Ltd.

1/1/1/1/1



**PEARSON**

## SECTION A

Answer ALL questions.

You should aim to spend no more than 20 minutes on this section.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Use the information below to help you answer questions 1 to 5.

### Stored DNA Profiles and Crime Detection in the UK

Year	2004	2005	2006	2007	2008
Number of stored DNA profiles	3 085 766	3 785 571	4 428 376	5 056 740	5 607 614
Total number of crimes	5 637 511	5 555 174	5 427 559	4 950 671	4 703 800
Number of crimes detected using DNA	19 873	20 349	19 949	17 614	17 463
% of total crimes detected using DNA	0.35	0.37	See Q3	0.36	0.37

(Source: adapted from [www.genewatch.org](http://www.genewatch.org))

1 Between 2004 and 2008 the number of stored DNA profiles increased by

- A 28%
- B 45%
- C 54%
- D 82%

(Total for Question 1 = 1 mark)

2 The median number of crimes detected using DNA is

- A 17 614
- B 19 873
- C 19 949
- D 20 349

(Total for Question 2 = 1 mark)



3 The percentage of total crimes detected using DNA in 2006 was

- A 0.34
- B 0.35
- C 0.36
- D 0.37

(Total for Question 3 = 1 mark)

4 A statistician used the figures in the table to predict that the number of stored DNA profiles in 2009 would be approximately 6 200 000. This prediction was based on

- A deduction
- B induction
- C analogy
- D authority

(Total for Question 4 = 1 mark)

5 Which of the following can be inferred from the data in the table?

- A An increase in the number of stored DNA profiles has caused a decrease in the total number of crimes.
- B A decrease in the number of crimes has had no effect on the number of crimes detected using DNA.
- C A decrease in the number of stored DNA profiles has caused a decrease in the total number of crimes detected.
- D An increase in the number of stored DNA profiles has had no effect on the total number of crimes.

(Total for Question 5 = 1 mark)

6 Occam's Razor can be used to

- A select the equipment used in a scientific experiment
- B decide what measurements to make in a scientific experiment
- C determine whether predictions are correct
- D choose between rival scientific theories

(Total for Question 6 = 1 mark)



7 Which of these questions can be answered fully using existing scientific methods?

- A Should we spend more on health services?
- B Can animals experience pain?
- C Do humans have a soul?
- D Are nuclear weapons immoral?

**(Total for Question 7 = 1 mark)**

---

8 In the early 20th century Marie Curie researched

- A radioactive emissions
- B planetary motion
- C special relativity
- D continental drift

**(Total for Question 8 = 1 mark)**

---

9 Which one of the following is not a major source of funding for cancer research in the UK?

- A Private companies
- B Local councils
- C Charities
- D Central government

**(Total for Question 9 = 1 mark)**

---



**Read the following list relating to scientific and technological achievements and then answer questions 10 and 11.**

- (i) Structure of the atom
- (ii) Nuclear power
- (iii) Kinetic theory
- (iv) Silicon chips
- (v) Communication satellites
- (vi) The law of gravitation

**10** Which of the following refer only to scientific discoveries?

- A** (i) (ii) and (vi)
- B** (iii) (iv) and (v)
- C** (i) and (iii)
- D** (ii) and (iv)

**(Total for Question 10 = 1 mark)**

**11** Which of the following refer only to technological developments?

- A** (i) and (ii)
- B** (i) and (iii)
- C** (ii) (iv) and (vi)
- D** (ii) (iv) and (v)

**(Total for Question 11 = 1 mark)**

**12** Jeremy Bentham and John Stuart Mill are most closely associated with the development of

- A** utilitarianism
- B** creationism
- C** objectivism
- D** empiricism

**(Total for Question 12 = 1 mark)**

**13** Which of these does **not** campaign for the humane treatment of animals?

- A** NSPCC
- B** PETA
- C** RSPCA
- D** RSPB

**(Total for Question 13 = 1 mark)**



14 Which of these is **not** a type of punishment imposed by UK courts?

- A Fine
- B Imprisonment
- C Probation
- D Community service

(Total for Question 14 = 1 mark)

15 Which of these aims to reintegrate offenders into society?

- A Retribution
- B Restoration
- C Rehabilitation
- D Remission

(Total for Question 15 = 1 mark)

**Use the information below to help you answer questions 16 to 20.**

### **Human Memory and Stress**

Just like a computer running background programs, the human brain does not function as well when its 'working memory' is reduced, according to groundbreaking research led by Professor Sian Beilock. The work was partly carried out at the University of Chicago, and suggests that when we are anxious or worried, the reduced working memory available reduces our performance. Professor Beilock says that writing about your anxiety before the big occasion may help. 'We think this type of writing will help people perform their best in a variety of pressure-filled situations – whether it is a speech to an audience or a job interview.'

16 The phrase 'Just like a computer ... is reduced' contains an argument based on

- A induction
- B deduction
- C analogy
- D authority

(Total for Question 16 = 1 mark)



17 The phrase 'We think this type of writing will help people perform their best' is best described as an argument based on

- A induction
- B deduction
- C analogy
- D authority

(Total for Question 17 = 1 mark)

18 The phrase 'groundbreaking research as led by Professor Sian Beilock ...' contains

- A fact only
- B opinion only
- C both fact and opinion
- D no fact or opinion

(Total for Question 18 = 1 mark)

19 The phrase 'carried out at the University of Chicago' contains

- A fact only
- B opinion only
- C both fact and opinion
- D no fact or opinion

(Total for Question 19 = 1 mark)

20 The phrase 'when we are anxious or worried, the reduced working memory available reduces our performance' is best described as

- A extrapolation
- B hypothesis
- C contradiction
- D antithesis

(Total for Question 20 = 1 mark)

**TOTAL FOR SECTION A = 20 MARKS**



**SECTION B**

**Answer ALL questions.**

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

**Read Source 1 on the separate insert and then answer questions 21–26.**

- 21** Use your own knowledge to describe how the Copernican model of the Solar System differed from earlier models.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

**(Total for Question 21 = 3 marks)**





**22** (a) Identify two pieces of evidence in paragraph 2 used to support Darwin's theory of evolution.

(2)

.....

.....

.....

.....

(b) Use information from paragraph 2 to explain how new species arise.

(2)

.....

.....

.....

.....

**(Total for Question 22 = 4 marks)**

---



**23** Use the information in paragraphs 2 and 4 to explain what is meant by these terms:

(a) intelligent design

(2)

.....

.....

.....

.....

(b) empirical

(1)

.....

.....

(c) teleological

(1)

.....

.....

**(Total for Question 23 = 4 marks)**

---



24 Use your own knowledge to explain what is meant by a scientific theory.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

**(Total for Question 24 = 4 marks)**





**26** The author uses different types of evidence and arguments to support the view that the theory of evolution will eventually be universally accepted.

Assess the strengths and weaknesses of these different types of evidence and arguments, using examples from the source.

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

**(includes 3 marks for Quality of Written Communication)**  
**(Total for Question 26 = 7 marks)**

---

**TOTAL FOR SECTION B = 30 MARKS**



**SECTION C**

**Answer BOTH questions.**

**You should aim to spend no more than 40 minutes on this section.**

**27** Although the United States is officially secular, the religious background of presidential candidates is examined closely. In France, the wearing of religious dress is restricted in public buildings. In the UK, the monarch is Head of the Church of England, but arguably society is more tolerant of various religious beliefs and practices.

Discuss the view that individuals have less religious freedom in a secular state.

**(20)**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Handwriting practice area with 20 horizontal dotted lines.



Dotted lines for writing.

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

**(Total for Question 27 = 20 marks)**

---





**28** Nuclear power stations have operated in many countries since the 1950s. When in operation, these power stations do not release greenhouse gases. However, problems with the disposal of radioactive waste have yet to be resolved, and some disastrous accidents in the USA and Russia, and more recently Japan, caused widespread pollution. There are serious disagreements about the continued use of nuclear power as part of our mixed energy supply.

Examine arguments for and against shutting down nuclear power stations and ending all research into nuclear fission and fusion.

(20)

A series of horizontal dotted lines for writing an answer to question 28.



Handwriting practice area with 20 horizontal dotted lines.



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

**(Total for Question 28 = 20 marks)**

---

**TOTAL FOR SECTION C = 40 MARKS  
TOTAL FOR PAPER = 90 MARKS**



**BLANK PAGE**



**Pearson Edexcel GCE**

# **General Studies**

**Advanced Subsidiary**

**Unit 1: Challenges for Society**

Thursday 14 May 2015– Afternoon

**Insert**

Paper Reference

**6GS01/01**

**Do not return this insert with the question paper.**

*Turn over* ►

**P43445A**

©2015 Pearson Education Ltd.

1/1/1/1/1



**PEARSON**

## Source 1

### Science and Religion

Why do scientific developments sometimes lead to conflict between science and religion? In 16th-century Europe the Copernican revolution challenged the traditional Christian view, which placed humanity at the centre of the Universe. The Catholic Church responded by banning Copernicus' work until 1835. A contrasting example is provided by Isaac Newton's 17th-century work in mechanics and optics, which still occupies a central place in modern science. Despite the scientific significance of his work, Newton's ideas were not seen as posing a threat to older systems of thought.

*On the Origin of Species* (1859), Darwin's explanation of evolution driven by natural selection, denied the need for a deity to explain the variety of life on Earth, or the origin of humankind. Many scientists and others quickly accepted the broad outlines of his theory. To a scientist, belief in Darwin's theory is based on confirmatory evidence such as the fossil record. The theory of evolution shows how adaptation can be a response to environmental factors, but does not have any purpose other than survival of the fittest. However, significant opposition to the theory of evolution persists to this day, despite the extensive evidence provided by our more recent understanding of genetics. In current creationist 'theory', belief in Creation and therefore in a creator, is based on faith rather than evidence. Those creationists who believe in intelligent design argue that their 'theory' has the same status as the theory of evolution.

During the 20th-century, research by Rutherford and Thompson amongst others led to a radical new understanding of atomic structure, eventually enabling scientists and technologists to build nuclear weapons. Although this raised obvious ethical issues, the scientific developments behind them were not seen as presenting a challenge to religious teachings.

Science is empirical not teleological. Scientific evidence is based on observations and when the observations change the evidence has changed. When evidence has changed theories have to change as well, to accommodate the new evidence, and the change occurs relatively quickly. In contrast, religious belief presupposes some end or purpose. In those areas of religious belief that relate to the position or nature of humankind as the creation of some deity, religions are forced to argue against any change of view. However, today nobody doubts the essential facts of the Copernican model of the Solar System. Who will doubt the theory of evolution in two or three hundred years?