

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCE

General Studies

Advanced Subsidiary

Unit 1: Challenges for Society

Tuesday 12 January 2010 – 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.
- Keep an eye on the time.
- Try to answer every question.
- 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 20 minutes on this section.

Choose an answer A, B, C or D, and put a cross in the box ☒.

If you change your mind, 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 4.

New fingerprint method will foil obese criminals

Obese criminals may be at greater risk of being caught because of a new fingerprinting technique. A police scientist has developed a way of analysing corrosion on bullet casings, caused by microscopic amounts of salt in hand sweat.

Dr John Bond, scientific support manager with Northamptonshire Police, claims those who eat junk foods will give away the most clues. "The corrosion is caused by lots of salt in things we eat, such as processed food," he said. "The more salt in your body the more corrosion there will be on the shell casing. We can recreate fingerprints even after they have been removed because of the corrosion to the surface." Just as new techniques in DNA analysis have led to many successful cold case reviews, so there are similar hopes for this new fingerprinting technique.

Source: adapted from an article by Richard Edwards in *The Daily Telegraph*, 5 October 2008

1 The phrase 'A police scientist has developed a way of analysing corrosion on bullet casings' is best described as

- A fact
- B generalisation
- C coincidence
- D opinion

(Total for Question 1 = 1 mark)

2 The argument that concludes with the claim that '...those who eat junk foods will give away the most clues' is best described as

- A an argument from authority
- B an argument from cause
- C an argument by analogy
- D an argument by deduction

(Total for Question 2 = 1 mark)



3 The sentence 'Just as new techniques in DNA analysis ... this new fingerprinting technique' is best described as

- A an argument from authority
- B an argument from cause
- C an argument by analogy
- D an argument by deduction

(Total for Question 3 = 1 mark)

4 The conclusion that obese criminals are at greater risk of being caught is based on the assumption that

- A people who are obese sweat more
- B sweat contains salt
- C obese criminals eat junk food
- D junk food contains high levels of salt

(Total for Question 4 = 1 mark)

5 In the UK the normal punishment for illegal possession of firearms is

- A imprisonment
- B community service
- C probation
- D parole

(Total for Question 5 = 1 mark)

6 One of the main reasons for opposition to genetically modified (GM) crops is that

- A they are too expensive
- B GM seeds will only produce a crop for one year
- C the food produced does not meet safety standards
- D there are worries about the long-term effects on the environment

(Total for Question 6 = 1 mark)



7 An argument in favour of nuclear power stations is that they

- A do not need steam turbines to generate electricity
- B produce fewer greenhouse gases when operating than conventional power stations
- C are easier to build than conventional power stations
- D can provide more power than conventional power stations

(Total for Question 7 = 1 mark)

8 Carbon offsetting is used to reduce the overall environmental effects of carbon dioxide emissions. An example of carbon offsetting is

- A planting more trees to absorb carbon dioxide from the atmosphere
- B reducing the amount of carbon dioxide produced from fossil fuels
- C storing carbon dioxide emitted from burning hydrocarbons
- D using more renewable energy sources

(Total for Question 8 = 1 mark)

Read this list of discoveries or developments and then answer Questions 9 and 10.

- (i) light bulb
- (ii) structure of the atom
- (iii) computer
- (iv) internal combustion engine
- (v) radioactive decay

9 Which of (i) to (v) above refer to scientific discoveries?

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

(Total for Question 9 = 1 mark)

10 Which of (i) to (v) above refer to technological developments?

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

(Total for Question 10 = 1 mark)



11 Which one of these statements about a secular society is true?

- A only people in favour of a secular society are religious
- B only people who are not religious are in favour of a secular society
- C a secular society does not treat all religions the same way
- D a secular society treats all religions the same way

(Total for Question 11 = 1 mark)

12 Some contemporary religious groups object to medical treatments such as blood transfusion because

- A they believe such treatments to be wrong
- B no treatment can be guaranteed to work for all people
- C the doctors administering the treatment do not belong to their faith group
- D medical treatments can produce harmful side effects

(Total for Question 12 = 1 mark)

13 The 1998 UK Human Rights Act

- A applies only to UK citizens
- B cannot be suspended even in times of war or emergency
- C applies only to adults who are entitled to vote
- D applies to all people in the UK

(Total for Question 13 = 1 mark)

14 In the UK, all scientific research involving animals is

- A funded by the government
- B carried out in universities
- C controlled by government regulations
- D used to test medicines for humans

(Total for Question 14 = 1 mark)



15 Which one of these statements about an ASBO is true?

- A an ASBO can only be issued to a person under 21 years of age
- B an ASBO can ban a person from visiting a certain area
- C only the police can apply for an ASBO to be issued
- D breaching an ASBO is a civil offence

(Total for Question 15 = 1 mark)

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

Newton's Theory of Gravitation

The main significance of Newton's Theory of Gravitation lies in its universality. Before Newton, different explanations were given for the weight of an apple, the swell of tides around the Earth and the motion of moons and planets. After Newton, one theory served to explain all these observations. That the theory applied to all heavenly bodies was confirmed in spectacular fashion when it was used to predict the existence and position of the planet Neptune in 1846.

16 'The main significance of Newton's Theory of Gravitation lies in its universality' is best described as

- A fact
- B opinion
- C deduction
- D analogy

(Total for Question 16 = 1 mark)

17 Which one of these phrases illustrates the principle of simplicity (Occam's Razor)?

- A 'different explanations were given'
- B 'one theory served to explain all these observations'
- C 'confirmed in spectacular fashion'
- D 'used to predict the existence and position'

(Total for Question 17 = 1 mark)



18 'That the theory applied to all heavenly bodies' is the result of an argument based on

- A** abduction
- B** deduction
- C** transduction
- D** induction

(Total for Question 18 = 1 mark)

19 Which one of these statements about scientific theories is true?

- A** all scientific theories will eventually be falsified
- B** scientific theories explain everything about our existence
- C** new scientific theories are based on the beliefs of research scientists
- D** scientific theories do not include any ethical considerations

(Total for Question 19 = 1 mark)

20 A scientific hypothesis is best described as

- A** a scientific law which can be applied in all circumstances
- B** a principle which can be used to explain a theory
- C** an untested idea which might lead to a theory
- D** an experimental test which can confirm a theory

(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 to 27.

21 Give **two** characteristics of dementia outlined in paragraphs 1 and 2.

1

2

(Total for Question 21 = 2 marks)

22 Give **one strength** and **one weakness** of statistical data such as 'average life expectancy' (paragraph 1).

Strength

Weakness

(Total for Question 22 = 2 marks)



23 Use the information in paragraph 1 to calculate how much average life expectancy in the UK increased between 1840 and 2000.

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(Total for Question 23 = 2 marks)

24 From Source 1, identify **two** sources of funding for research into dementia.

1

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2

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(Total for Question 24 = 2 marks)



25 Explain how 'ethical issues related to resource allocation arise nowadays from the success of modern medicine' (lines 15–16)

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(Total for Question 25 = 4 marks)

26 Referring to Source 1, assess the strength of the evidence presented to support the conclusion that 'dealing with dementia is going to become increasingly problematic'.

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(Total for Question 26 = 7 marks)

includes 3 marks for Quality of Written Communication



27 (a) What does 'utilitarianism' mean?

(3)

(b) Show how utilitarianism might be applied in the context of allocating resources in medicine. Illustrate your answer with an example.

(5)



(Total for Question 27 = 11 marks)

includes 3 marks for Quality of Written Communication

TOTAL FOR SECTION B = 30 MARKS



SECTION C

Answer ALL questions.

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

28

In the UK during the last ten years, levels of recorded crime have decreased and the number of prisoners has increased. Some argue that this shows that imprisonment works well as a punishment. Others say that a number of different factors need to be considered and that, although crime overall may have fallen, some crimes have increased.

Consider arguments for and against the view that imprisonment is an effective punishment.

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(Total for Question 28 = 20 marks)

includes 4 marks for Quality of Written Communication



TURN OVER FOR QUESTION 29



Charles Darwin’s book, *On the Origin of Species by Means of Natural Selection*, was published in 1859. A few months later, a public debate took place between one of Darwin’s supporters, the biologist Thomas Henry Huxley, and the Christian Bishop Samuel Wilberforce. In a memorable phrase, Wilberforce is said to have asked Huxley whether he was descended from an ape on his grandmother’s side or his grandfather’s side. This episode is sometimes referred to as the ‘Apes or Angels’ debate.

To what extent does science cast doubt on older ways of thought?

Dotted lines for writing



Handwriting practice area with 25 horizontal dotted lines.



(Total for Question 29 = 20 marks)

includes 4 marks for Quality of Written Communication

TOTAL FOR SECTION C = 40 MARKS

TOTAL FOR PAPER = 90 MARKS



Edexcel GCE

General Studies

Advanced Subsidiary

Unit 1: Challenges for Society

Tuesday 12 January 2010 – Afternoon

Time: 1 hour 30 minutes

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Source material

Source 1

Dealing with Dementia

As life expectancy rises for UK citizens we face many problems in dealing with an ageing population. That most people live longer, healthier lives is undoubtedly true. A simple statistical analysis shows that average life expectancy in the UK has risen consistently since 1840, by approximately two years every decade. But as 5 people live longer, dealing with degenerative diseases such as dementia is going to become both more necessary and almost certainly more expensive.

Dementia describes a group of syndromes, the best known being Alzheimer's disease. Although dementia can strike the young, the vast majority of sufferers are older. Currently dementia affects one person in twenty over the age of 65 and 10 one person in five over the age of 80. Much work has been done on the causes of dementia, mainly funded by the government. However, despite the best efforts of doctors and scientists, an effective cure for dementia seems unlikely.

We can already see some of the difficulties which will be caused. To all intents and purposes drug treatments are already rationed by the National Institute for 15 Health and Clinical Excellence (NICE). This illustrates how ethical issues related to resource allocation arise nowadays from the success of modern medicine and how the number of difficult decisions we will have to face is going to multiply considerably.

Our current approach is based on utilitarianism, but it is difficult to see how this 20 will provide an acceptable solution when financial resources, including charitable donations, are going to be so stretched and the consequences of the decisions made will affect so many people adversely. Perhaps we simply have to accept that dealing with dementia is going to become increasingly problematic.