

Write your name here

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Other names

Pearson
Edexcel GCE

Centre Number

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Candidate Number

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General Studies

Advanced

Unit 3: Change and Progress

Wednesday 21 June 2017 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

6GS03/01

You must have:

Insert (enclosed)

Total Marks

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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 and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- 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 Source 1 on the separate insert and then answer questions 1–6.

- 1** Using your own knowledge, give **two** advantages and **two** disadvantages of using driverless cars.

Advantages

1

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2

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Disadvantages

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(Total for Question 1 = 4 marks)

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2 Paragraphs 4 and 5 contain an inductive argument.

What features of an inductive argument are found in paragraphs 4 and 5?

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(Total for Question 2 = 3 marks)

3 Explain, using evidence from Source 1, how the development of driverless cars could be considered to be an example of **progress**.

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(Total for Question 3 = 3 marks)



4 Giving examples, explain what you understand by 'we have already re-landscaped Britain's roads to limit the autonomy of the private car' (paragraph 5).

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(Total for Question 4 = 3 marks)

5 Using information from Source 1 or your own knowledge, describe the main features of an 'intelligent transport system'.

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(Total for Question 5 = 4 marks)



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QUESTION 6 BEGINS ON NEXT PAGE.



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(Includes 4 marks for Quality of Written Communication)
(Total for Question 6 = 13 marks)

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 2 on the separate insert and then answer questions 7–12.

- 7** Write out an analogy used in Source 2 (paragraphs 1–3). Explain why argument from analogy might be considered to be weak.

Analogy

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Explanation

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(Total for Question 7 = 3 marks)

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8 Professor Rippon disagrees with the findings of research conducted using fMRI technology (paragraphs 1 and 2). How might the outcomes of any scientific research be challenged?

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(Total for Question 8 = 4 marks)



9 Explain what you understand by the phrase 'It is full of the drip, drip, drip of the gendered environment' (paragraph 3). Give an example of a 'gendered environment' from Source 2 to illustrate your answer.

(Total for Question 9 = 4 marks)

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10 Professor Rippon claims that gender differences in the brain emerge only through environmental factors and are not innate (paragraph 2).

Critically examine the evidence and arguments used in Source 2 to justify this conclusion.

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(Total for Question 10 = 5 marks)



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11 How does gender influence the roles that men and women have in society?

Using your own knowledge and evidence from Source 2, critically consider this question.

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**(Includes 4 marks for Quality of Written Communication)
(Total for Question 11 = 14 marks)**

TOTAL FOR SECTION B = 30 MARKS



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SECTION C

There are two questions in this section. You should answer ONE of them.

Write your answer in the space provided.

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

Use knowledge and understanding from a range of disciplines to reach an appropriate conclusion.

- 12** There was a time when most economists believed that income per head could adequately reflect a country's progress. More recently scholars have advocated the idea that happiness, or subjective wellbeing, should be used as the sole measure of a country's progress. It has also been taken up officially by the Bhutan government which has replaced Gross National Product as the measure of the country's progress with a measure of Gross National Happiness.

Evaluate the benefits and drawbacks of using happiness as the sole measure of a country's progress.

(Includes 6 marks for Quality of Written Communication)
(Total for Question 12 = 30 marks)

- 13** Critically examine the view that patients who are suffering and terminally ill should be allowed to die at a time and place of their own choosing.

(Includes 6 marks for Quality of Written Communication)
(Total for Question 13 = 30 marks)

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Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 12** ☒ **Question 13** ☒

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TOTAL FOR SECTION C = 30 MARKS
TOTAL FOR PAPER = 90 MARKS



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Source 1

Never mind driverless cars – we need intelligent transport systems

If the technology giants get their way, the era of the driverless car is coming. Highly advanced technology is being used to redesign the car, but wouldn't it be more revolutionary to fully realise the potential of automated road transport?

The driverless car revolution breaks down into three phases. The first, which we're living through, is the introduction of automated decision-making technology into existing cars. Now there are 'steer-by-wire' cars on the market – where the steering wheel is basically just a physical suggestion to the system that actually directs the wheels.

The second phase is when all the automated features combine into a system where there is enough feedback and enough assurance against failure that the driver can temporarily cede control to the machine. This is what Google is currently driving around the streets of Mountain View, California: drivers are operating the cars manually and then 'letting go' in certain circumstances. The third phase will be totally autonomous vehicles, following GPS routes carefully to their destinations, responding to all surprises with a gentle deceleration.

This seems to me a total underestimation of the potential for automating road transport. Done properly, it would be achieved socially, not through the competitive design of moving metal boxes. The most advanced technology being applied to cars right now is arguably not in-car robotics but the intelligent transport systems being developed in cities. These begin by analysing real-time traffic flows, adjusting signals and junction priorities, and communicating with drivers through programmable signage. But once you add in sensors and interactivity, it becomes a different ball game.

We have already re-landscaped Britain's roads to limit the autonomy of the private car. If you automated traffic flows, directing certain cars to go in certain directions and at certain speeds, you would have the makings of an automotive social network. In addition you could authorise routes, speeds and lane use solely for fully automated cars – and, of course, integrate them with an intelligent public transport system, consisting of intelligently routed trains, underground systems, trams and cycle lanes.

Our imaginations are stuck in the age of Fred Flintstone: the man, confidently driving his nuclear family around in a square box, enjoying the 'freedom' symbolised by the private car. Maybe there was a time when the automobile brought freedom: the ability to get away from the stultifying small-town world, and as a movable trysting place for couples in the age of strict morality. Personally, I would quite happily leave the world of the car behind, as with the cassette tape and the landline. I would rather see Google and its ilk put their brainpower into producing a social solution than one based on the illusory autonomy of the robotic car.

(Source: adapted from Paul Mason www.theguardian.com 2 August 2015, <http://www.theguardian.com/commentisfree/2015/jul/31/nevermind-driverless-cars-need-intelligenttransport-systems>)

Source 2

Men and women do not have different brains

The idea that men are from Mars and women are from Venus, with male and female brains wired differently, is a myth, a professor has claimed. However, recent studies using functional magnetic resonance imaging (fMRI) suggest that female brains are more suited to social skills, memory and multi-tasking, while men are better at perception and co-ordinated movement. fMRI measures brain activity and can be used to produce activation maps showing which parts of the brain are involved in a particular mental process. However, according to Science journalist Greg Miller, 'Using fMRI to spy on neurons is like using Cold-War-era satellites to spy on people. Only large-scale activity is visible.'

Neuroscientist Professor Gina Rippon disagrees with these studies. She says gender differences in the brain emerge only through environmental factors and are not innate. 'The bottom line is that saying there are differences in male and female brains is just not true. There is pretty compelling evidence that any differences are tiny and are the result of environment not biology. You can't pick up a brain and say "that's a girl's brain, or that's a boy's brain" in the same way you can determine gender from a skeleton. Brains look the same.'

Professor Rippon points to earlier studies that showed the brains of London black cab drivers physically changed after they had acquired 'The Knowledge' – an encyclopaedic recall of the capital's streets. She believes differences in male and female brains are due to similar cultural stimuli. A woman's brain may therefore become 'wired' for multi-tasking simply because society expects that of her and so she uses that part of her brain more often. The brain adapts in the same way as a muscle gets larger with extra use. 'What often isn't picked up on is how plastic and permeable the brain is. It is changing throughout our lifetime. The world is full of stereotypical attitudes and unconscious bias. It is full of the drip, drip, drip of the gendered environment.'

Professor Rippon believes that gender differences appear early in western societies and are based on traditional stereotypes of how boys and girls should behave and which toys they should play with. Segregating the way children play, giving dolls to girls and cars to boys, could be changing how their brains develop, she claims. 'I think gender differences in toys is a bad thing, these things are pervasive in the developing brain and stifle potential. Often boys' toys are much more training-based whereas girls' toys are more nurturing. It's sending out an early message about what is expected in a child's future.'

(Source: adapted from Sarah Knapton, *Daily Telegraph* 8 March 2014, <http://www.telegraph.co.uk/news/science/science-news/10684179/Men-and-women-do-not-havedifferent-brains-claims-neuroscientist.html>)

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