



13+ Scholarship Examinations 2017

GENERAL PAPER

1 hour 15 minutes

PLEASE NOTE THAT THERE ARE NO RIGHT ANSWERS TO MOST OF THE QUESTIONS ON THIS PAPER. THEY ARE DESIGNED TO SHOW HOW YOU THINK, RATHER THAN WHAT YOU KNOW.

There are **60 marks** available for this paper:

20 for Section A, 20 for Section B, 20 for Section C.

Your marks from the **Research Task (20)** will be incorporated into your overall General Paper grade.

- **All answers should be written clearly on the writing paper provided.**
- **Write your name clearly at the top of each piece of writing paper used.**
- **Start each section on a new sheet of paper.**

Section A [20 marks]

After reading the article extracts write brief answers to the questions below.

The first extract is adapted from “Will Democracy Survive Big Data and Artificial Intelligence?” (*Scientific American*, 25 February 2017). The article first appeared in *Spektrum der Wissenschaft* as “Digitale Demokratie statt Datendiktatur.”¹

We are in the middle of a technological upheaval that will transform the way society is organized.

The digital revolution is in full swing. How will it change our world? The amount of data we produce doubles every year. In other words: in 2016 we produced as much data as in the entire history of humankind until 2015. Every minute we produce hundreds of thousands of Google searches and Facebook posts. These contain information that reveals how we think and feel. Soon, the things around us, possibly even our clothing, also will be connected with the Internet. It is estimated that in 10 years’ time there will be 150 billion networked measuring sensors, 20 times more than people on Earth. Then, the amount of data will double every 12 hours.

Everything will become intelligent; soon we will not only have smart phones, but also smart homes, smart factories and smart cities. Should we also expect these developments to result in smart nations and a smarter planet?

The field of artificial intelligence is, indeed, making breathtaking advances. In particular, it is contributing to the automation of data analysis. Artificial intelligence is no longer programmed line by line, but is now capable of learning, thereby continuously developing itself. Recently, Google's DeepMind algorithm taught itself how to win 49 Atari games. Algorithms can now recognize handwritten language and patterns almost as well as humans and complete some tasks better than them. They are able to recognise and describe the contents of photos and videos. Today 70% of all financial transactions are performed by algorithms. News content is, in part, automatically generated. This all has radical economic consequences: in the coming 10 to 20 years around half of today's jobs will be threatened by algorithms. 40% of today's top 500 companies will have vanished in a decade.

It can be expected that supercomputers will soon surpass human capabilities in almost all areas—somewhere between 2020 and 2060. Experts are starting to ring alarm bells. Technology visionaries, such as Elon Musk from Tesla Motors, Bill Gates from Microsoft and Apple co-founder Steve Wozniak, are warning that super-intelligence is a serious danger for humanity, possibly even more dangerous than nuclear weapons. Is this alarmism?

One thing is clear: the way in which we organize the economy and society will change fundamentally. We are experiencing the largest transformation since the end of the Second World War; after the automation of production and the creation of self-driving cars the automation of society is next. With this, society is at a crossroads, which promises great opportunities, but also considerable risks. If we take the wrong decisions it could threaten our greatest historical achievements.

¹ <https://www.scientificamerican.com/article/will-democracy-survive-big-data-and-artificial-intelligence>

The second extract is adapted from *The Express*, 23 June 2016².

Robots could be given citizen rights under bizarre EU suggestions

In the 1950s Asimov predicted robots would eventually have to adhere to laws, because the combined potential of a sophisticated physical mechanism, androids with human features, and artificial intelligence (AI) was too dangerous.

But, it appears Brussels bureaucrats fear this fiction will become a reality and they are considering including a "new robot category next to natural and lawful people: the electronic person".

The report suggests AI could "surpass human intelligence within a few decades". Some members of the European Parliament fear that without controls on robots humans may no longer be in charge of their own fate.

If Asimov's predictions are being followed by the EU leaders, then a blueprint already exists. The author already outlined the "Three Laws of Robotics" in his novels that inspired Hollywood blockbuster *I Robot* in 2004.

These laws were: that a robot must not harm any human, it has to obey humans, and it cannot harm humanity.

EU politicians point towards the fact that robots could become or be made self-aware by means of artificial intelligence. Their report says robots "would be equipped with certain rights and responsibilities and be held responsible for any damage caused".

Using information in the articles, from your digital research tasks and your general knowledge, write brief answers to the following questions.

1. Explain what you understand by 'intelligence' and how artificial intelligence may be different to human intelligence. **[4 marks]**
2. The terms 'robot' and 'computer' are sometimes used interchangeably. Explain what you think are the differences. **[3 marks]**
3. Do you think the 'Three Laws of Robotics' would be sufficient if they were to be programmed into robots as safeguards? **[3 marks]**

A computer can now consistently beat the world champion at chess, one of the most complex games ever invented. The IBM computer 'Deep Blue' first beat the world champion in 1996.

4. Should computers as 'intelligent' as Deep Blue have rights? **[5 marks]**
5. Outline some of the opportunities and risks for human society arising from the development of artificial intelligence. **[5 marks]**

² <http://www.express.co.uk/news/science/682759/RIGHTS-FOR-ROBOTS-EU-reveals-plans-for-new-class-of-AI-electro-person>

Section B [20 marks]

- 1. Choose five meanings of the word 'thought' from the list below, making clear the numbers of your choices, and write a sentence for each showing how the word is used in that way.**

Credit will be given for the quality and imagination of your examples.

[8 marks]

The word "thought" comes from the Old English word "þoht" meaning "to conceive of in the mind, to consider".

The word "thought" in English now may mean any of the following:

1. a single product of thinking or a single idea
2. the product of mental activity
3. the act or system of thinking
4. the capacity to think, reason, imagine, and so on
5. the consideration of or reflection on an idea
6. recollection or contemplation
7. half-formed or imperfect intention
8. anticipation or expectation
9. consideration, attention, care, or regard
10. judgment, opinion, or belief
11. the ideas characteristic of a particular place, class, or time
12. the state of being conscious of something
13. tending to believe in something, especially with less than full confidence

- 2. Read the passage and answer the questions below.**

"Cogito ergo sum" is a philosophical proposition by René Descartes (1596-1650) usually translated into English as "I think, therefore I am".

Descartes explained, "We cannot doubt of our existence while we doubt...". A fuller form, by Antoine Léonard Thomas, expands upon Descartes' intent: "dubito, ergo cogito, ergo sum"*.

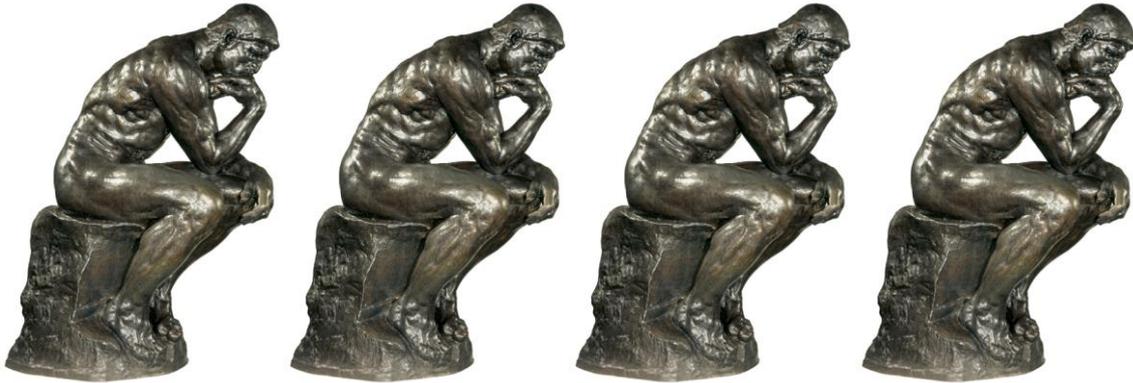
*"dubito" means "I doubt"

- (a) What do you think Descartes meant by 'cogito ergo sum'?** **[3 marks]**
- (b) What flaws can you spot in his logic?** **[3 marks]**

The Thinker

3. Read the information below to deduce the order of the houses' statues and the material from which each was made. [6 marks]

One summer term four houses at King's made one model each of Rodin's famous statue, *The Thinker*. They were arranged in a line on Green Court and made from four different unusual materials.



Tradescant's entry is somewhere to the left of the **papier-mâché** one; the third one along from the left was, oddly enough, made of **jelly**. **Meister Omers** chose to use **plasticine**. **Walpole's** was not at either end, but placed somewhere to the right of the (knitted) **woollen** model. **Kingsdown's** was on the extreme right, whilst the artwork furthest to the left was not the one made from **plasticine**.

Lay out your answer like this:

(position)	Left	Second from left	Second from right	Right
(house)
(material)

Section C [20 marks]

You are advised to spend 25-30 mins on this section.

All Souls College at the University of Oxford runs an annual competition for Prize Fellowships.

The questions below are taken from a recent All Souls General Paper.

Choose one of these and write an essay addressing that question.

[20 marks]

1. Should you be allowed internet access during this exam?*
2. Do we need borders?
3. 'Thinking is my fighting.' (Virginia Woolf, 1940) Discuss.
4. Is rising life expectancy a good thing?

*assume 'this exam' means this main General Paper

END OF EXAMINATION



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The first map shows all the world's major languages proportional to the number of people who speak them. The second shows the countries where the largest world languages are spoken.¹

1. Chinese is the largest section of the first map, but not the largest on the second. Explain why this is. [2]
2. There are a number of other inconsistencies between the two maps. Find one more and try to explain why. [3]

What neither map shows is the other end of the scale, the languages spoken by only small numbers of people, many of which are dying out.

Having read the article provided in the insert, *Are dying languages worth saving?*, answer the questions below.

3. Explain what you think is meant by "And when languages are lost most of the knowledge that went with them gets lost." [3]
4. Give and explain your own opinion on "If a language is one that people don't participate in, it's not a language anymore." [3]
5. Explain what Philip Howard means when he says "Language is the only absolutely true democracy". [3]
6. "The former Spanish dictator Franco spent decades trying to stamp out the nation's regional languages but today Catalan is stronger than ever and Basque is also popular." Explain why this is the case. [3]
7. "Language is not a plant that rises and falls, lives and decays. It's a tool that's perfectly adapted by the people using it. Get on with living and talking." Explain what is meant by this. [3]

Section B [20 marks]

8. Quoting material from this paper in the maps/charts above, the passage you have just read and some of what you have learnt from your research task, write an essay to explain your own response to the following statement:

"Uniformity is better than diversity. The world will be a better place if everyone is more equal. In short, if we are to solve the world's problems, it is better that there are fewer differences between us. In particular, it is essential that we all speak the same language." [20]

¹ Maps retrieved from: <http://mentalfloss.com/article/64594/proportional-map-worlds-largest-languages;>
https://commons.wikimedia.org/wiki/File:Main_world_languages.png

Section C [20 marks]



Massachusetts Institute of Technology

The screenshot below is taken from one part of the website (<https://shass.mit.edu/mission>) of MIT, Massachusetts Institute of Technology, which is generally regarded as the world's 'top' university. Please look at it carefully, then answer the question 9.

MIT SCHOOL OF HUMANITIES, ARTS, & SOCIAL SCIENCES
great ideas change the world

MIT's Mission in the Humanities, Arts, and Social Sciences



Empowering

Generating practical solutions for the world's great challenges requires technical and scientific creativity—and an understanding of the world's human complexities: political, cultural, and economic.

MIT's Humanities, Arts, and Social Sciences fields empower young scientists, engineers, thinkers, and citizens—with historical and cultural perspectives, and skills in critical thinking and communication—to help them serve the world well, with innovations and lives that are rich in meaning and wisdom.

9. Explain in your own words what you think is meant by the two paragraphs under the heading **Empowering**. (Your answer should deal with a good selection of the terms, ideas and concepts mentioned. The best answers will contain examples to make the meaning clearer.) [20]

END OF EXAMINATION

Are dying languages worth saving?

Language experts are gathering at a university in the UK to discuss saving the world's endangered languages. But is it worth keeping alive dialects that are sometimes only spoken by a handful of people, asks Tom de Castella?

"Language is the dress of thought," Samuel Johnson once said.

About 6,000 different languages are spoken around the world. But the Foundation for Endangered Languages estimates that between 500 and 1,000 of those are spoken by only a handful of people. And every year the world loses around 25 mother tongues. That equates to losing 250 languages over a decade - a sad prospect for some.

This week a conference in Carmarthen, West Wales, organised by the foundation, is being attended by about 100 academics. They are discussing indigenous languages in Ireland, China, Australia and Spain.

"Different languages will have their quirks which tell us something about being human," says Nicholas Ostler, the foundation's chairman.

"And when languages are lost most of the knowledge that went with them gets lost. People do care about identity as they want to be different. Nowadays we want access to everything but we don't want to be thought of as no more than people on the other side of the world."

Apart from English, the United Kingdom has a number of other languages. Mr Ostler estimates that half a million people speak Welsh, a few thousand Scots are fluent in Gaelic, about 400 people speak Cornish, while the number of Manx speakers - the language of the Isle of Man - is perhaps as small as 100. But is there any point in learning the really minor languages?

Last speaker dies

"I do think it's a good thing for a child on the Isle of Man to learn Manx. I value continuity in a community."

In Europe, Mr Ostler's view seems to command official support. There is a European Charter for Regional Languages, which every European Union member has signed, and the EU has a European Language Diversity For All programme, designed to protect the most threatened native tongues. At the end of last year the project received 2.7m euros to identify those languages most at risk.

But for some this is not just a waste of resources but a misunderstanding of how language works. The writer and broadcaster Kenan Malik says it is "irrational" to try to preserve all the world's languages.

Earlier this year, the Bo language died out when an 85-year-old member of the Bo tribe in the India-owned Andaman islands died.

While it may seem sad that the language expired, says Mr Malik, cultural change is driving the process.

"In one sense you could call it a cultural loss. But that makes no sense because cultural forms are lost all the time. To say every cultural form should exist forever is ridiculous." And when governments try to prop languages up, it shows a desire to cling to the past rather than move forwards, he says.

If people want to learn minority languages like Manx, that is up to them - it shouldn't be backed by government subsidy, he argues.

"To have a public policy that a certain culture or language should be preserved shows a fundamental misunderstanding. I don't see why it's in the public good to preserve Manx or Cornish or any other language for that matter." In the end, whether or not a language is viable is very simple. "If a language is one that people don't participate in, it's not a language anymore."

Wicked words

The veteran word-watcher and Times columnist Philip Howard agrees that languages are in the hands of people, not politicians. "Language is the only absolutely true democracy. It's not what professors of linguistics or academics or journalists say, but what people do. If children in the playground start using 'wicked' to mean terrific then that has a big effect."

The former Spanish dictator Franco spent decades trying to stamp out the nation's regional languages but today Catalan is stronger than ever and Basque is also popular.

And Mr Howard says politicians make a "category mistake" when they try to interfere with language, citing an experiment in Glasgow schools that he says is doomed to fail. "Offering Gaelic to children of people who don't speak it seems like a conservation of lost glories. It's very romantic to try and save a language but nonsense."

But neither is he saying that everyone should speak English. "Some people take a destructivist view and argue that everyone will soon be speaking English. But Mandarin is the most populous language in the world and Spanish the fastest growing."

There are competing forces at work that decide whether smaller languages survive, Howard argues. On the one hand globalisation will mean that many languages disappear. But some communities will always live apart, separated by sea, distance or other barriers and will therefore keep their own language. With modern communications and popular culture "you find that if enough people want to speak a language they can".

In short, there is no need for handwringing.

"Language is not a plant that rises and falls, lives and decays. It's a tool that's perfectly adapted by the people using it. Get on with living and talking."

<http://www.bbc.co.uk/news/magazine-11304255>



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GENERAL PAPER – DIGITAL RESEARCH TASK

30 minutes

20 marks are available for this task which will be incorporated into your overall General Paper grade.

Follow these instructions carefully.

- **Log on** – you will be told how to.
- **Open Internet Explorer**; you will be taken to a page from The Guardian (Newspaper) website: *'Disappearing lives – the world's threatened tribes – in pictures.'*¹
- **Your research tasks are printed overleaf.**
- **Your answers should be in a word document that you create, and then print at the end of 30 minutes. Please make sure that your document has your name clearly (on a single line and in bold) at the top. You will then be given your own document for you to use during the General Paper.**
- **Your answers to the tasks can be in note format, but they must be clearly set out. You should show (by quoting the internet address) that you have used at least four different websites in your research.**
- **Your printed document should not be more than two sides of A4 (font 11 or 12).**

¹ <http://www.theguardian.com/travel/gallery/2013/nov/08/disappearing-lives-worlds-threatened-tribes-in-pictures#img->

Research Tasks

1. Choose one of the pictures and find out what you can about what is shown in the picture. For example, you might select some of the following: who/ what are being shown, the physical background, the dress of the people (person), what they are doing. Make sure that your notes say which tribe/people/person you are referring to.
 2. Choosing the same picture, find out why the people shown have been included under the title '**Disappearing lives – the world's threatened tribes**'. What is threatening their existence? Is there anything that can be done to prevent that tribe 'disappearing'?
 3. Find out what is meant by 'ethno-diversity' and why many people believe it to be important.
-