
THINKING SKILLS

Paper 4 Applied Reasoning

9694/41

May/June 2016

1 hour 30 minutes

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

An answer booklet is provided inside this question paper. You should follow the instructions on the front cover of the answer booklet. If you need additional answer paper ask the invigilator for a continuation booklet.

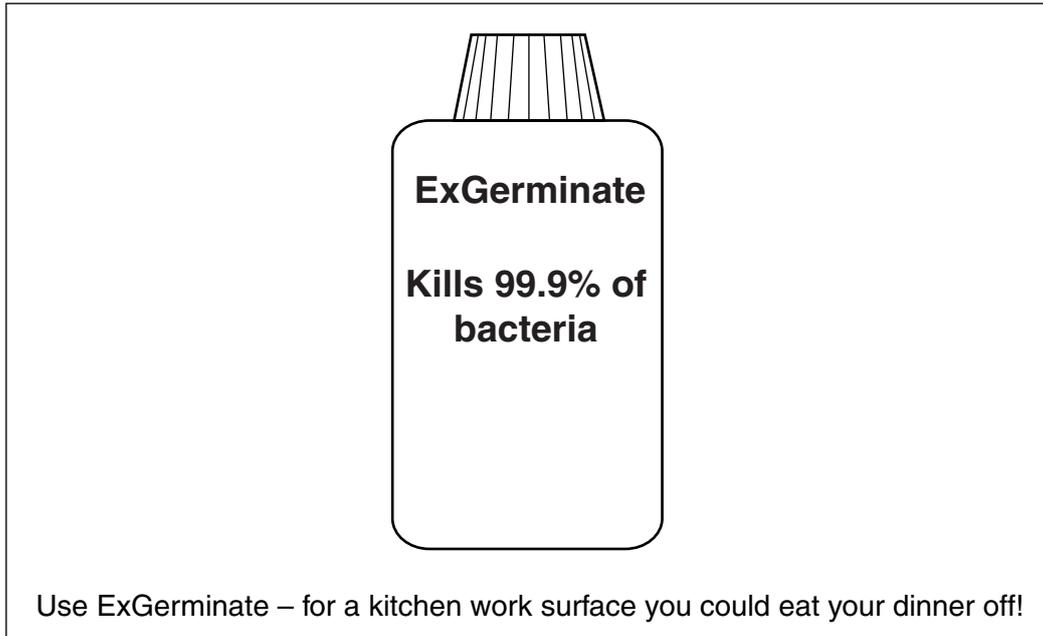
Answer **all** the questions.

The number of marks is given in brackets [] at the end of each question.



This document consists of **7** printed pages, **1** blank page and **1** insert.

- 1 Study the information below and answer the question that follows.



Make **five** criticisms of the statistic in the advertisement and/or the inference drawn from it. [5]

Questions 2, 3 and 4 refer to Documents 1 to 5.

- 2 Briefly analyse Dave's argument in Document 1: *If you believe...*, by identifying its main conclusion, intermediate conclusions and any counter-assertions. [6]
- 3 Give a critical evaluation of the strength of Dave's argument in Document 1: *If you believe...*, by identifying and explaining any flaws, implicit assumptions and other weaknesses. [9]
- 4 'We should not be concerned about the spread of conspiracy theories.'

Construct a reasoned argument to support **or** challenge this claim, commenting critically on some or all of Documents 1 to 5 and introducing ideas of your own. [30]

DOCUMENT 1**If you believe...**

When we think of the great achievements of humanity we think of the fight against disease, the works of Shakespeare or global electronic communication. But some gullible people still think of the Apollo 11 'mission to the moon'. However, it was clearly a hoax.

In the 1960s we were still struggling with colour TV; mobile phones and video recorders were twenty years away, and no one even dreamed of the internet. It is impossible that something as complex as a manned mission to the moon could have been carried out using the technology of the time. Over thirty years later we could not reliably send a space shuttle into near-earth orbit – as we found out to our cost in 1986 and 2003, when two of the four operational shuttles, Challenger and Columbia (that's 50%) crashed, killing everyone on board. Sixties technology was just not up to the job.

A hoax makes sense in view of the political climate of the Cold War. Getting one over on the Soviet Union was mission number 1. What better way to do it than to beat them to the moon? Any presidential administration that managed to do that would be guaranteed a second term. In order to achieve this, the costs involved would have been unaffordable. A fraction of the money could be spent on an elaborate hoax, allowing the rest to be diverted to other 'top secret' missions.

We can send people into orbit and we can send hardware to the moon, but people never went to the moon. The first few attempts to send animals into space were not successful. Had this been a trial for a new drug, it would have been abandoned at this point. For some reason, NASA jumped to sending men to the moon and, surprise, surprise, they returned unharmed. People were beginning to get suspicious of this remarkable 'success', so they faked the near disastrous Apollo 13 mission as well.

Some of the evidence against the moon landings is undeniable. There is the flag that flutters even though there would be no wind on the moon. There are no stars in the background of any of the pictures. There are the well preserved 'astronaut' footprints that look like they are in wet sand, when there is no water on the moon – or sand, for that matter! People with a vested interest to distort the truth think they can explain away such evidence with science, but they are not convincing.

It is interesting that Neil Armstrong, the supposed first man on the moon, became a near recluse after the mission and rarely spoke about it. He was clearly ashamed of something. Look at the film footage: when he is being congratulated as he emerges from the capsule he does not smile but looks down at the ground.

You only have to study the evidence to realise the mission has all the hallmarks of a magician's illusion. When we sit in an audience and with our own eyes watch someone being sawn in half, no-one calls for an ambulance. We just know it is not real.

Dave

DOCUMENT 2

What's the harm? The body count of pseudoscientific conspiracy theories

I'm often confronted by people who demand to know how sceptics dare to criticise other people's ideas about medicine, biotech, and science: "You ought to respect their *beliefs!*" Others simply shrug off popular pseudoscience and say, "Why bother? What's the harm?" The answer is that the cost of misinformation is too large to ignore. It is counted in billions of dollars wasted on junk cures, in billions spent on treating preventable diseases. It is measured in lifetimes shortened, bodies crippled, eyes blinded, and children lost. We are facing nothing less than genocidal stupidity, on a worldwide scale.

- In the United States, far from being a fringe phenomenon, conspiratorial beliefs about medicine are mainstream. A study published in *JAMA Internal Medicine* showed that half of the American public believes at least one medical conspiracy theory and 18% believe three or more. 20% believe that vaccines are linked to autism, and doctors are covering it up. 37% believe the government and drug companies are suppressing "natural cures" for various diseases.
- Conspiratorial beliefs also help fuel the \$28 billion organic food sector and \$34 billion alternative medicine industry. For instance, people who believe three or more conspiracy theories are three times more likely to use herbal supplements, compared to those who believe none.
- Conspiracy theories about AIDS are rampant. At one clinic, 21% of HIV positive patients thought that HIV was created by the CIA.
- Large outbreaks of measles have hit the US in recent years. 3000000 people die every year from vaccine-preventable diseases. Conspiracy theorists in the developed world have stoked baseless fears about vaccines causing autism; this has led to plummeting vaccination rates and a resurgence in the West of diseases like measles and whooping cough – diseases that were nearly stamped out a decade ago. In Nigeria, Pakistan, and Afghanistan, aid workers trying to vaccinate children against polio (and hopefully eradicate the disease) have been attacked and murdered by groups suspicious of their motives.
- The government of Zambia rejected 35000 tons of food aid because they thought it might be genetically modified. Since then, dozens of countries have caved in to fear-mongering by banning GM crops, despite the overwhelming evidence they are safe and can greatly increase crop yields. Meanwhile, 870 million people worldwide suffer from chronic undernourishment, including a third of children in developing countries.

DOCUMENT 3**In defence of conspiracy theories**

When was the last time you heard someone claim that the moon landings were faked, George W Bush blew up the twin towers, or an alien spaceship crashed in the Nevada desert (possibly containing George W Bush)? Most of these so-called conspiracy theories are just that – theories – but is that such a bad thing? And what if some of them are true?

The fact that these wild theories can be debated openly is not only testament to the strength of our democracy – it also keeps democracy on its toes.

Take the horrific Boston Marathon bombing of 2013. Groups emerged claiming that it was the work of a Saudi national, and others called for the release of the chief suspect, Dzhokhar Tsarnaev. The thought of groups actively campaigning to have a murderer set free or an innocent man jailed might worry some people. But everyone is innocent until proven guilty; what these groups are doing is acting as unofficial lawyers – at worst, harmless, but potentially making a valuable contribution to the debate.

Conspiracy theories strengthen our country and our democracy.

Young people are interested in whether the moon landings were faked or not – it gets them talking, researching, considering the science. In fact, teachers often use the science behind the supposed evidence for fakery as a tool to engage students in learning about the real science. Beyond that, an interest, once sparked, can lead to a journey of discovery that could last a lifetime.

Public interest in the JFK assassination conspiracy has helped foster an interest in and understanding of US social and political history – Civil Rights, the Cuban Missile Crisis, Vietnam. This increased learning can only be good for our future.

More than that, suspicions about the JFK assassination and other conspiracy theories, such as the 9/11 attacks, whether they are true or not, foster a healthy scepticism in the public. Do we want an electorate that blindly believes everything told to them by a faceless government? Or do we want an electorate that questions facts, demands evidence and does not blindly follow instructions from ‘the man’?

And let’s not forget that some conspiracy theories turn out to be true – the Joint Chiefs of Staff really did plan a Cuban terror campaign in the run up to a planned invasion.

Ultimately, the benefit of conspiracy theories goes beyond their role as catalysts for increased awareness. They’re also essential to the democratic health of our nation. Government can be a force for good or a source of harm. Big government is more likely to be the latter. Our conspiracy culture helps to ensure that government is routinely subject to the scrutiny of the people. Sometimes conspiracy theorists get it wrong, perhaps more often than not, but we should be grateful that they are there.

DOCUMENT 4

A group of high school students researched and debated popular conspiracy theories. Following the discussion, students assigned each theory to one of four categories. The results are shown below.

Certainly false

- The US Government orchestrated the 9/11 attacks.
- The Illuminati and the New World Order – powerful and secretive groups are plotting to rule mankind with a single world government.
- Jesus married Mary Magdalene, had one or more children, and the descendants of those children have a claim to the throne of France and are protected by a secret society.
- Diana, Princess of Wales, was murdered by the UK intelligence services.
- Elvis Presley faked his own death.
- North American Union: There is a plan to create a regional union of Canada, Mexico and the United States similar in structure to the European Union.
- Paul McCartney died in a car crash in 1966 and was replaced by a look-alike and sound-alike.
- The July 7, 2005 Tube bombings in London were orchestrated by the UK Government to gain public support for new anti-terror laws.

Probably false

- NASA faked the moon landings.
- Shakespeare's plays were written by somebody else.
- Scientific conspiracy to convince people that humans are causing climate change.
- The disappearance of Shergar – the most popular theory goes that Irish republican terrorists kidnapped the racehorse for Colonel Gaddafi in return for weapons.
- The US Government knew about the 9/11 attacks in advance.
- Safety data for GM foods is faked.

Probably true

- The assassination of John F Kennedy was not the act of a lone gunman.
- British Intelligence plot to overthrow Harold Wilson's Labour government in a coup and install Lord Mountbatten as leader.
- Business conspiracy to convince people that humans are not causing climate change.

Certainly true

- Operation Northwoods – A plan by the Joint US Chiefs of Staff to launch a fake Cuban terror campaign on American soil to persuade the US public to support an invasion of Cuba.
- MK-ULTRA – The code name for a covert mind-control and chemical interrogation research programme run by the CIA.
- The Tuskegee Syphilis Experiments – patients in a US medical trial were not treated even after a successful treatment became available.

DOCUMENT 5

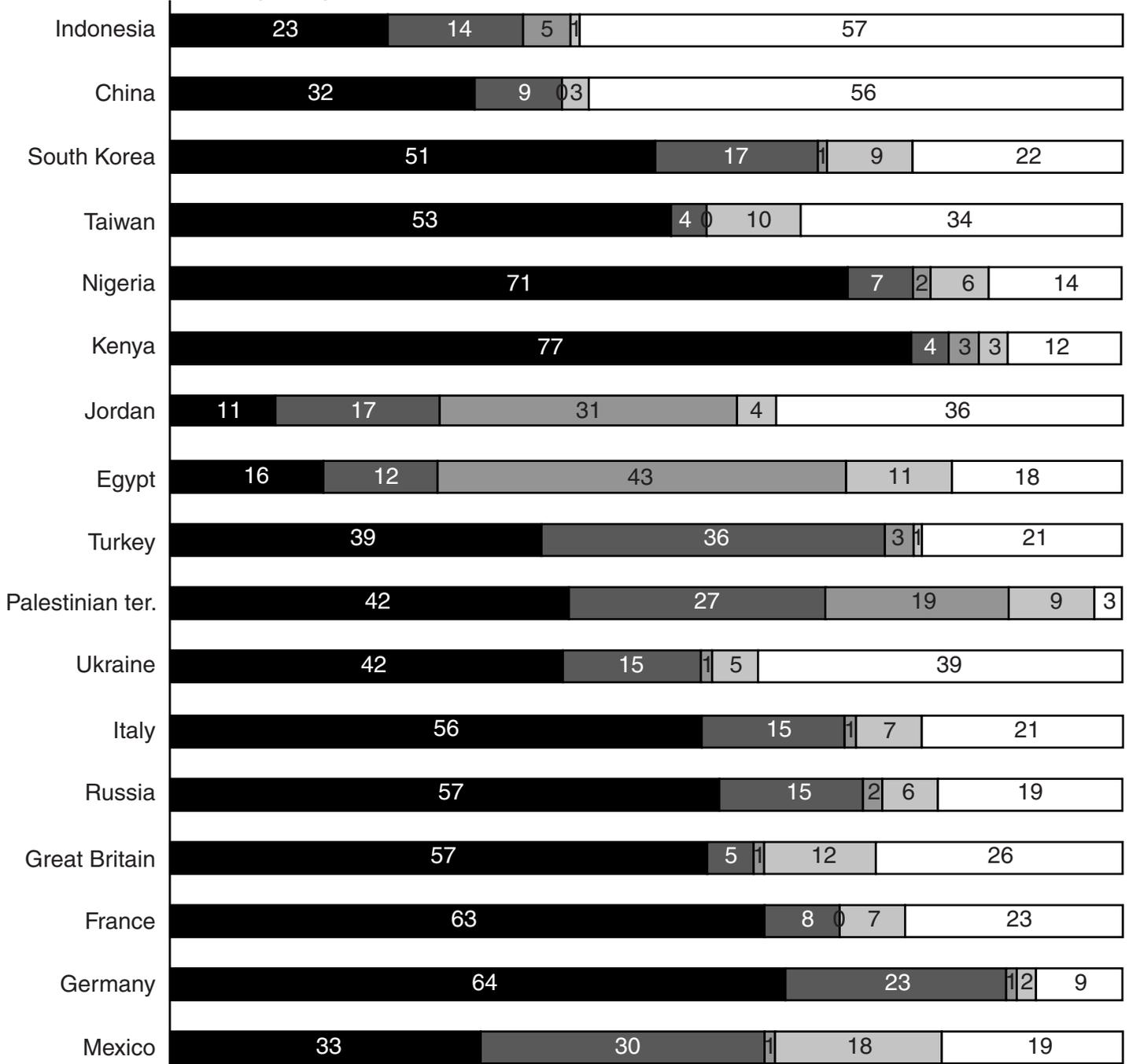
Results of an opinion poll about the 9/11 attacks

A large number of people, in each of the countries listed, was asked, "Who do you think was behind the 9/11 attacks?", and asked to choose from one of five options.

Who do you think was behind the 9/11 attacks?

■ Al-Qaeda ■ U.S. govt. ■ Israel ■ Other □ Don't Know

Figures given as % of total



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