
THINKING SKILLS

Paper 2 Critical Thinking

9694/23

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1 hour 45 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 **6** printed pages, **2** blank pages and **1** Insert.

- 1 Study the evidence and answer the questions that follow.

Source A

Extract from biography of Rudolf Diesel, the inventor of the diesel engine

On the morning of 29 September 1913, Rudolf Diesel boarded the S.S. Dresden in Belgium, to cross the English Channel for a meeting in London. After having dinner he returned to his cabin at 10pm, and asked to be woken up at 6am the following morning. When he did not arrive for breakfast, those travelling with him went to his cabin. His bed was unused, although his things had been laid out as if he'd intended to go to sleep. A full search of the ship took place before it reached London, but there was no sign of Diesel. The crew concluded that he must somehow have fallen overboard during the night. There were, however, no witnesses to this and sea conditions were calm. Several weeks later, a Dutch tugboat operating in the North Sea discovered a floating, decomposing body. The vessel was not big enough to take the body on board, so the crew took some personal items from the corpse and handed them into the authorities. The youngest of Diesel's sons, Eugen, identified the items including a pocket knife, ID card and a glasses case as belonging to his father.

Source B

Extract from book *The History of the Oil Industry*

Diesel's family never accepted that his death was suicide. They suspected that the oil industry was behind his death and a number of newspapers at the time made this connection explicit. The oil industry staked its future on the rival internal combustion engine, which was fuelled by petroleum. Diesel was a vocal critic of this form of power. He had published a book criticising the internal combustion engine along the surprisingly modern lines that it caused air pollution and relied on an ultimately finite resource. He envisaged his own engine running on vegetable oil.

Source C

Extract from book *The Build Up to War – 1910–1914*

At the time of Diesel's death, he was on his way to Britain to attend the opening of a new diesel-engine plant and to meet with the British navy about installing his engine in their submarines. In 1913, the year of Diesel's death, a number of commentators thought that the outbreak of war between Britain and Germany was only a matter of time. Some conspiracy theorists suggest he was killed by German agents who wanted to prevent a future enemy getting hold of his invention. As a German national, it could have been argued that his proposed deal with the British was an act of treason.

Source D**Extract from biography of Rudolf Diesel**

A major justification for the suicide explanation is the fact that Diesel was in poor health and was facing financial ruin. By September 1913 none of his bank accounts contained significant amounts of money, and on 1 October enormous interest payments were due. He couldn't afford to pay them.

Shortly before setting off on his journey, Diesel had handed his wife a suitcase containing a large amount of cash. Although his wife seems to not to have found anything unusual in this, it has been subsequently argued that this was Diesel's attempt to leave his family with a 'rainy day fund' – money to support the family after his death, money which could not be found by debt collectors.

- (a) In Source A it says that a body was found but not taken aboard the tugboat.

Explain why this might be significant. [3]

- (b) When the use of diesel engines became widespread they were powered by heavy oil produced by the oil industry.

To what extent does this information weaken the idea, suggested in Source B, that the oil industry was responsible for Diesel's death? [3]

- (c) How useful is the information in Source C in supporting the idea that Diesel did not commit suicide? [3]

- (d) How likely is it that Rudolf Diesel was murdered? Write a short, reasoned argument to support your conclusion, with critical reference to the evidence provided and considering a plausible alternative conclusion. [6]

2 Study the evidence and answer the questions that follow.

Source A

Leaflet for shop owners

Smoking e-cigarettes, or 'vaping', as it is often called, has become increasingly popular. An e-cigarette is an electronic device that aims to give the user a dose of nicotine (which is the addictive element in ordinary cigarettes) without the harmful ingredients, such as tar and carbon monoxide, that are inhaled during normal smoking. Whilst they appear to give off smoke this is just harmless vapour. E-cigarettes seem to offer a safe alternative to smoking and shopkeepers who want to stay ahead of the trend would be well advised to start stocking this product.

Source B

Extract from journal of public health

Supporters of vaping argue that it offers a safe alternative to smoking cigarettes and even helps smokers kick the smoking habit. However, it is too early to judge whether there are any harmful effects of vaping. Another downside to vaping is the suggestion by critics that it introduces young people to the idea of smoking and this may lead to them smoking actual cigarettes. Many countries have banned the sale of e-cigarettes to individuals under 18.

Source C

Extract from health magazine

Vapers beware of potential harmful effects of vaping!

Chemicals in e-cigarettes can damage lung tissue, causing inflammation. A new study has shown that this can reduce the ability of the lungs to keep out germs and harmful substances. The evidence from this study also suggests that nicotine is not as harmless as often thought and that it damages the lungs. Other studies have shown that nicotine has a harmful effect on brain development in young people and that the flavouring agents used in e-cigarettes are harmful, because they can produce cancer-causing chemicals such as formaldehyde when they become over-heated. Finally, it has been shown by yet more studies that vaping damages major blood vessels such as the aorta, causing a hardening of the vessel walls that is similar to that found in the blood vessels of those who smoke normal cigarettes.

Source D

Extract from investment journal

Cigarette manufacturers are increasingly turning to the production of e-cigarettes as an alternative to their traditional product. Health campaigns against cigarette smoking and severe restrictions on advertising and marketing have led to a significant decline in smoking in many countries. The fashion for vaping, especially amongst the young, has grown and, just as cigarettes were associated with celebrity and glamour in the 1940s and 50s, an increasing number of 'stars' are having publicity shots taken showing them vaping. It is only a matter of time before the e-cigarette manufacturers recruit them for marketing purposes.

Source E

Figures showing the growth of vaping in one country

<i>Year</i>	2000	2004	2008	2012	2016
<i>Number of vapers per 10 000 people</i>	20	50	100	900	1100

- (a) Vaping is increasing in China but there has been no decrease in cigarette smoking.

To what extent does this information weaken the idea, suggested in Sources A and B, that vaping offers an alternative to cigarette smoking? [3]

- (b) Look at Source C. Identify **two** pieces of evidence that could reasonably be disregarded by some vapers and explain why they might disregard them. [4]

- (c) Look at Source E. Suggest **two** explanations for the increase in vaping between 2008 and 2012. [2]

- (d) 'Vaping is not a risk-free alternative to smoking cigarettes.'

To what extent do you agree with this claim? Write a short, reasoned argument to support your conclusion, using and evaluating the information provided in Sources A–E. [6]

3 *Read the passage and answer the questions below.*

- 1 Many people in advanced industrial societies look forward to retirement when they are elderly. At some point we will have to abandon this idea; however, we should not worry about it. Societies in the past did not have a concept of retirement, which shows that it is unnecessary for the maintenance of social life.
- 2 Retirement is possible only because it is funded by a pension, i.e. a regular but unearned income. Governments will find it increasingly difficult to fund such pensions as people are living longer. However, governments will be able to increase other payments, for example, payments made to people when they are too ill to work. This is because they will have saved so much money on pensions by abolishing the concept of retirement.
- 3 Governments are increasingly concerned that people are not getting enough exercise. The number of retired people slumped in front of the television watching day-time soaps is contributing to this problem. People should keep on working. It would be much better for their health and for society. People like actors never retire – their work is their life.
- 4 The use of robots and various forms of artificial intelligence is increasing all the time. Eventually the concept of retirement in old age will become redundant. This is because only a very small minority of the population will be needed to run the new, automated workplaces. Some governments are already talking about a basic minimum income payable to all members of society. One cannot retire if one has never worked in the first place.
- 5 Retirement is not the solution to all of life's problems that people imagine it to be. Unlimited leisure as the key to happiness is as illusory as the idea that a big win on the lottery will result in this. Human life is miserable because of fundamental features of existence such as illness, pain and death.

- (a) Using the exact words from the passage as far as possible, identify the main conclusion. [2]
- (b) Using the exact words from the passage as far as possible, identify **three** intermediate conclusions. [3]
- (c) Evaluate the strength of the reasoning in the argument. In your answer you should consider any flaws, unstated assumptions and other weaknesses. [5]
- (d) 'A key goal of science should be to increase human life expectancy.'

Write your own short argument to support **or** challenge this claim. The conclusion of your argument must be stated. Credit will not be given for repeating ideas from the passage. [5]

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