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**THINKING SKILLS**

Paper 2 Critical Thinking

**9694/22**

**October/November 2019**

**1 hour 45 minutes**

No Additional Materials are required.

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**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.



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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**

**Newspaper report**

A nurse, Irene Patel, returned by plane from Africa in December 2014 with a large number of other volunteers, who had been dealing with an outbreak of a deadly virus. All passengers on the flight had to undergo health screening before they could complete their journeys. The health authorities had medical staff at the airport to take the temperatures of the volunteers to ensure they were not infected. However, there were not enough staff as passenger numbers from the infected area were greater than expected. One of the volunteers alleged that health authority staff responsible for screening encouraged them to take each others' temperatures and fill out the forms. Patel's temperature was also taken by the screening authorities and shown to be normal and she was eventually allowed to continue her journey home. Two days later she was admitted to hospital suffering from the virus and was in a critical condition for several weeks. This indicated a serious breakdown in the screening procedure, which could have led to a wider outbreak of the virus outside the already infected areas.

**Source B**

**Extract from enquiry report into failure of screening procedure**

The enquiry panel heard that the screening area at the airport was "busy, disorganised and even chaotic" when Ms Patel and other medics arrived back from Africa.

The agreed facts in the case, as presented to the panel, show that the nurse's temperature was recorded twice at the airport at more than 38 °C. The screening rules stated that a "temperature above 37.5 °C is an elevated temperature that requires further assessment and should be reported to a specialist consultant at an appropriate hospital".

The doctor who took the temperature, another volunteer, claims that a colleague of Patel's said that she would record the temperature as 37.2 °C on Ms Patel's screening form and then they would "get out of there and sort it out".

The agreed facts show that Ms Patel stated that she recalled the words "let's get out of here" being used but could not remember who said it or who entered the temperature on her screening form.

**Source C**

**News report**

A volunteer who spent a period of time in Africa dealing with the outbreak of a deadly virus has been the subject of a misconduct enquiry by her professional body for allegedly falsifying the temperature readings of a colleague. The allegations were made by the health authorities responsible for screening volunteers returning from Africa. The volunteer denies these charges, saying that it is inconceivable that with her training and experience of the virus she would try to subvert the screening procedures.

**Source D****Witness statement to enquiry into screening failure**

I overheard a conversation between Ms Patel and a colleague. Ms Patel was saying that she had to get back for a family celebration and she hoped the screening process would not take too long. She also complained of feeling rather unwell and said she would take some paracetamol. (This medicine has the effect of reducing temperature.)

- (a) The enquiry claimed that the screening process was disorganised.
- (i) Look at Source A. Explain why the passenger numbers being greater than expected reinforces this claim. [2]
- (ii) What evidence does Source B provide to support this claim? [2]
- (b) What is the significance of the information given in Source C that the charges against the volunteer were brought by the screening authorities? [2]
- (c) How useful is the information given by the witness in Source D? [3]
- (d) How likely is it that Irene Patel was responsible for the failure of the screening process? 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**

**Extract from building journal**

The conventional approach to designing buildings to withstand earthquakes is to make sure they do not completely collapse when subjected to strong shaking. However, they may sustain damage to some structural features and to non-structural elements such as glass facades. This may mean that the building cannot remain functional after an earthquake. This is a problem for facilities such as hospitals, which need to remain functioning.

Special techniques are required to design buildings that remain undamaged and fully functional even in a severe earthquake. There are two techniques that can be used to achieve this aim:

- *Base Isolation Devices*: the idea behind this is to detach the building from the ground in such a way that earthquake motions are not transmitted up through the building, or at least are greatly reduced.
- *Seismic Dampers*: these are special devices in the building which absorb the shock of the earthquake much like the way shock absorbers in motor vehicles absorb the impacts due to undulations of the road.

Buildings with these features usually cost more than normal buildings do. However, this cost is justified through improved earthquake resistance.

**Source B**

**Official advice on what to do during an earthquake**

**DROP** where you are, onto your hands and knees. This position protects you from being knocked down and also allows you to stay low and crawl to shelter if one is near.

**COVER** your head and neck with one arm and hand.

- If a sturdy table or desk is nearby, crawl underneath it for shelter.
- If no shelter is nearby, crawl next to an interior wall (away from windows).
- Stay on your knees; bend over to protect vital organs.

**HOLD ON** until shaking stops.

- Under shelter: hold on to it with one hand; be ready to move with your shelter if it shifts.
- No shelter: hold on to your head and neck with both arms and hands.

**Trying to move during shaking puts you at risk:** Earthquakes occur without any warning and may be so violent that you cannot run or crawl; therefore you are most likely to be knocked to the ground where you happen to be. So it is best to drop before the earthquake drops you, and find nearby shelter or use your arms and hands to protect your head and neck.

**The greatest danger is from falling and flying objects:** Studies of injuries and deaths caused by earthquakes over recent decades show that you are much more likely to be injured by falling or flying objects (TVs, lamps, glass, bookcases, etc.) than to die in a collapsed building. “Drop, Cover, and Hold On” (as described above) will protect you from most of these injuries.

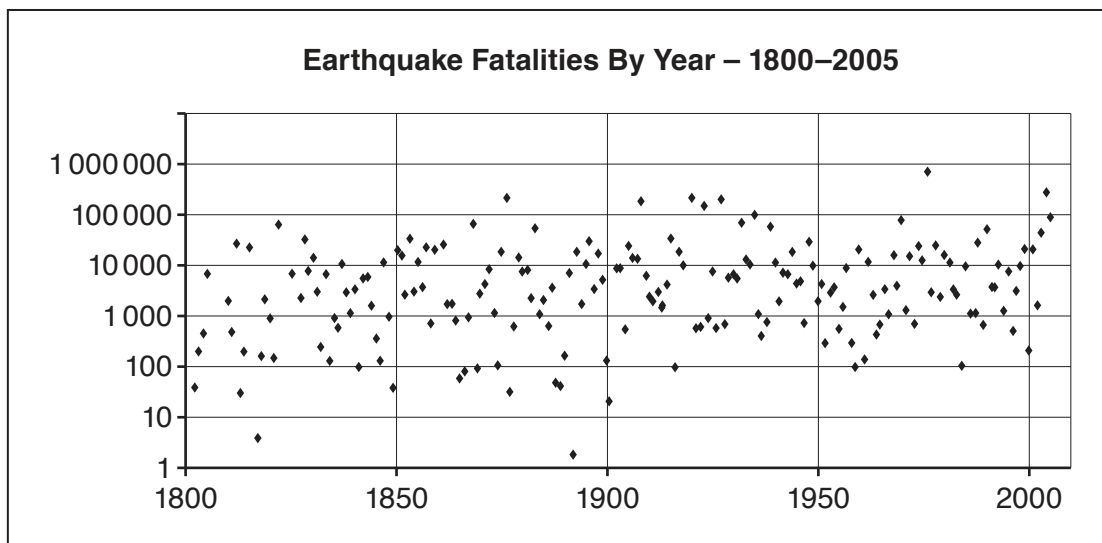
### Source C

#### Newspaper report

According to expert analysis many older concrete buildings in cities across the world may be at risk of collapsing in a major earthquake. Despite their sturdy appearance, many older concrete buildings are vulnerable to the sideways movement of a major earthquake because they don't have enough steel reinforcing bars to hold columns in place. Recent earthquakes have spotlighted the deadly potential of concrete buildings. A 2011 quake in Christchurch, New Zealand, toppled two concrete office towers, killing 133 people. Many of the 6000 people killed in a 1995 earthquake in Kobe, Japan, were in concrete buildings.

### Source D

The graph below shows earthquake fatalities in each year since 1800 (US Geological Survey).



- (a) Suggest **three** reasons why the invention of the two techniques described in Source A could have only a limited impact on the overall number of deaths caused by earthquakes. [3]
- (b) Look at Source C. Suggest **two** reasons why one **cannot** draw the conclusion from the information presented that builders should not use concrete. [3]
- (c) One interpretation of Source D is that the number of deaths from earthquakes has remained broadly the same since 1800, in spite of scientific and technological advances during this period.

Suggest **two** possible explanations for this. [3]

- (d) 'The devastation caused by earthquakes shows that humans have failed to tame the forces of nature.'

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–D. [6]

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

- 1 Dogs are an essential part of the cultural development of human society. They have been domesticated for thousands of years and have proved invaluable to humans. Evidence for this is the many cave paintings that depict people hunting with dogs.
- 2 Dogs can have a negative reputation with some people but everybody should own a dog. Walking a dog for one to two hours a day gives the owner plenty of exercise. Lack of exercise is a key contributor to the increase of obesity in many societies, which is a major factor in the development of health conditions such as diabetes. Many older people are lonely and lack meaningful contact with other members of society. A dog gets them out of the house and as a result they meet other dog owners. So dog ownership makes a key contribution to the maintenance of the health of the population.
- 3 Whilst many complain about barking dogs, there are regulations governing this and people can complain to the relevant authorities if this is troubling them. In any case, there are worse things that can happen to one than being disturbed by a barking dog. Traffic noise is equally disturbing and we have to accept that noise is an inescapable feature of modern life. If people can't deal with noise they need to go somewhere like Antarctica.
- 4 Dogs come in many different sizes, so there is bound to be one that suits individual requirements. Frail elderly people living in retirement flats with limited space may prefer a smaller dog that will not pull them over when they take it out for a walk. Such a dog will also be less obtrusive in smaller rooms.
- 5 Dogs are fiercely protective of their owners and offer protection against burglars and muggers. Most criminals will hesitate to rob somebody who is with a large growling dog. The weak and vulnerable in society are at greatest risk of being robbed and tend to live in fear. They would benefit especially from this advantage of dog ownership.

- (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) 'Dogs have benefited from their association with humans.'

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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