## Section A (Source-Based Case Study)

Questions 1 to 5 are **compulsory** for all candidates.

**BEING PART OF A GLOBALISED WORLD**

Study the Background Information and the sources carefully, and then answer all the questions.

You may use any of the sources to help you answer the questions, in addition to those sources you are told to use. In answering the questions, you should use your knowledge of the topic to help you interpret and evaluate the sources.

1    Study Source A.

     Why was this cartoon published? Explain your answer.                                    [5]

2    Study Source B.

     What is the attitude of the cartoonist towards the banning of Huawei? Explain your answer.    [6]

3    Study Sources C and D.

     Does Source D prove that the American claims in Source C is wrong? Explain your answer.    [7]

4    Study Sources E and F.

     Having read Source E, are you surprised by Source F? Explain your answer.                [7]

5    "The government should manage cybersecurity."

     Using the sources in this case study, explain how far you would agree with this statement.    [10]

# What are the impacts of globalisation on cybersecurity?

## BACKGROUND INFORMATION
Read this carefully. It may help you to answer the questions.

Advancements in communication technology have made people more interconnected. The COVID-19 pandemic had led to increased dependence on technology in work, school and commerce. Together with the convenience technology brings, people are also more exposed to cybersecurity threats. Personal data and finance are often targets of cyberattacks. Organisations are held at ransom by malicious programming that "lock" and prevent the organisations from accessing their data or even operating their business. Espionage or spying in commercial and government sectors are also harder to prevent. The increased sophistication in communication technology have led to greater prevalence of these threats. Many of these hackers operate from other countries and it is harder for authorities to arrest them unless countries cooperate. Globalisation has made cybersecurity more complex.

Study the following sources to find out the impacts of globalisation on cybersecurity.
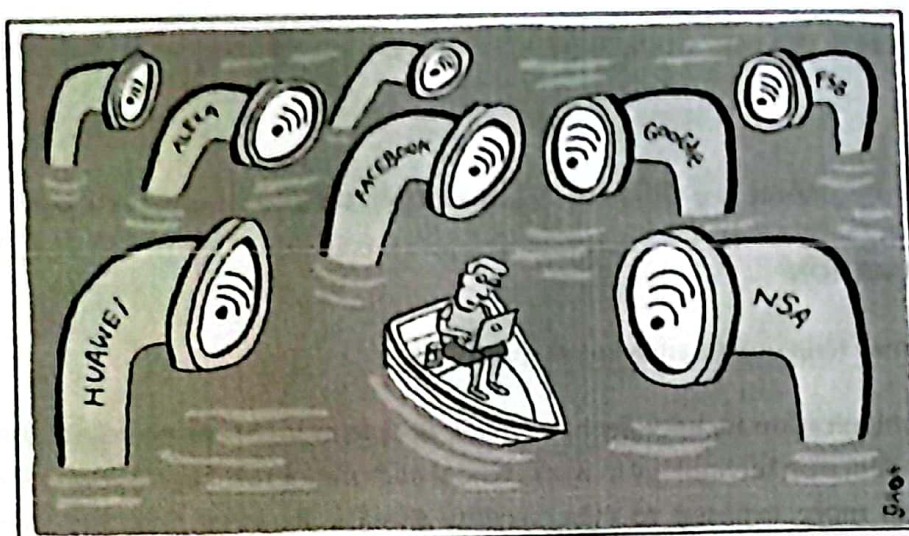
**Source A:** *A cartoon published by the Cyber Security Agency of Singapore for the business sector in 2018.*

**Source B:** A cartoon, titled "Huawei SG Boycott", published in America on 20 May 2019 in response to the US government's ban on Huawei. The government had based the ban on national security concerns on 15 May 2019.



*Huawei refers to the Chinese multinational technology company that designs and sells telecommunications equipment, consumer electronics and various smart devices

NSA refers to the National Security Agency of USA

FSB refers to the Federal Security Service of the Russian Federation

Alexa is an Amazon virtual assistant technology

**Source C:** Adapted from a news article from an American news, December 2021.

The US government has warned that China's Huawei Technologies Co, the world's biggest maker of telecommunications equipment, pose a national security risk for any countries that use them. USA has waged a global campaign to block the company from supplying state-of-the-art 5G wireless networks.

Now a Bloomberg News investigation has found a key piece of evidence - a breach that occurred in Australia.

In 2012, Australian intelligence officials informed the US that they had detected a sophisticated hacking into the country's telecommunications systems. It was conducted by Chinese spies who gained access through Huawei technicians. It started with a software update that was loaded with malicious code. It will record all the communications and send the data to China. After a few days, that code deleted itself, the result of a clever self-destruct mechanism.

Bloomberg didn't find evidence that Huawei's senior leadership was involved with or aware of the attack.

Washington thinks Huawei is spying on the US, but they have not provided any evidence of that. Huawei does not have any special relationship with the Chinese government. The government has no ownership in Huawei, and they do not interfere in Huawei's business operation in any way.

There is certainly technology competition. Some U.S. politicians want to use Huawei as a representation of China, a target to attack to advance their political interests. But Huawei does not want to be a bargaining chip. We hope, over time, we can set the record straight and people can understand Huawei is just a simple and honest company that wants to connect the world.

**Source E:** *A 2022 international report ranking countries based on their potential to be exposed to cyberattacks. The exposure rank measures how widespread is the use of digital technology in the country. The preparedness rank is based on measures taken by governments and businesses against cyberattacks.*

| Country | Exposure rank | Preparedness rank |
|---|---|---|
| Singapore | 1 | 1 |
| South Korea | 2 | 6 |
| Japan | 3 | 2 |
| Australia | 4 | 3 |
| New Zealand | 5 | 5 |
| India | 6 | 7 |
| Malaysia | 7 | 4 |
| Philippines | 8 | 9 |
| Thailand | 9 | 8 |
| Sri Lanka | 10 | 10 |
| Vietnam | 11 | 11 |
| Indonesia | 12 | 12 |

According to a cybersecurity report, organisations in Singapore are among the most targeted in the world by ransomware*. The recent ransomware "gold rush" among cyber criminals is due to the fact that it is becoming easier for criminals to carry out such attacks, and many organisations are also now more reliant on digital infrastructure than before.

Despite this, businesses here tend to prioritise recovery rather than prevention. They were willing to pay the ransom so that business can resume quickly.

A senior officer of cyber-security technology firm felt that it was not necessary to increase budget, technology, or manpower to ensure cybersecurity. He said that basic cyber awareness was lacking among employees, which was obvious when they opened phishing e-mails or selected insecure passwords should be addressed.

* Ransomware is a type of computer programme that infiltrates a computer system and encrypts the data inside. Criminals then demand a ransom, to unlock the data.

**LIVING IN A DIVERSE SOCIETY**

Study the extracts carefully, and then answer the questions.

**Extract 1**

Healthcare cost has been steadily increasing over the year. It was estimated that in 2022, the average person in Singapore spends $2275 on healthcare per year. The table below shows the range of cost for some healthcare services in Singapore.

| Item | Cost |
|---|---|
| GP consultations | $25 to $120 |
| Health screenings (Blood test) | $25 to $500 |
| Visit to the A&E (public hospitals) | $60 to $300 |
| Specialist consultations at public hospitals | $39 to $167 |
| The average hospital bill for surgical specialities | $1,638 to $18,993 |

**Extract 2**

Prejudice can lead to discriminatory actions towards certain groups of people.

**Extract 3**

With more migrants attracted to Singapore, there is an increase demand for resources. Resources can be in the form of opportunities or availability of infrastructure.

6   **Extract 1** shows that the average cost of healthcare in Singapore.

   In your opinion, how can Singaporeans manage the cost of healthcare? Explain your answer with reference to **two** ways.                                                                                      [7]

7   **Extract 2** and **Extract 3** reflect on prejudice and misconception and competition for resources as challenges in an increasingly diverse society.

   Do you think that prejudice and misconception is a greater challenge than competition for resources in an increasingly diverse society? Explain your answer.                                                  [8]

**End of Paper**