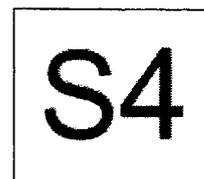**ANGLICAN HIGH SCHOOL**
SECONDARY 4
PRELIMINARY EXAMINATIONS 2025

S4

GEOGRAPHY   2279/01
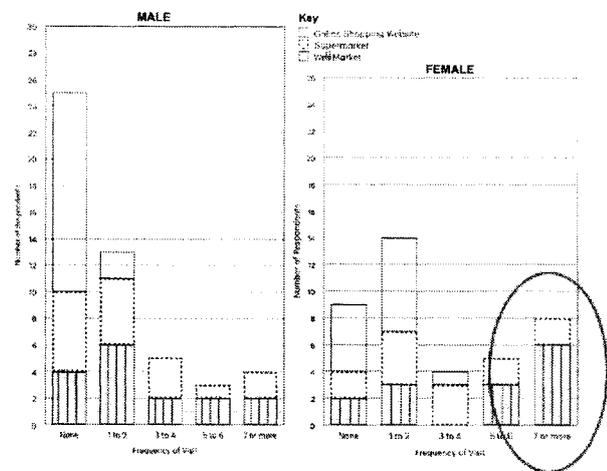
Paper 1   **22 August 2025**

MAXIMUM MARK: 50

Question	Answer	Marks
1(a)	A group of students were investigating the importance and popularity of wet markets for sustainable living in Singapore. There are currently 83 wet markets managed by the National Environment Agency (NEA) and NEA-appointed operators in Singapore, compared with 691 supermarkets. The students found data on the NEA website showing the decreasing public preference for wet markets and represented the information using a pie chart, as shown in Fig. 1.1. They decided to test the hypothesis: "Wet markets are becoming increasingly irrelevant in meeting the grocery needs of Singapore residents." Using Fig. 1.1, suggest how the information is useful for this investigation. Possible responses include: • This secondary data provides evidence that points to an overall decreasing trend in the number of Singapore residents visiting the wet market from 2014 to 2018 [1 mark] • Backs the students' hypothesis for investigation that assumes that wet markets are becoming increasingly irrelevant in meeting the grocery needs of Singapore residents [1 additional mark]. AO2	2
1(b)(i)	The students decided to conduct a questionnaire, shown in Fig. 1.2 (Insert), with Singapore residents living in Fengshan GreenVille on a Wednesday afternoon. The questionnaire focused on how residents meet their grocery needs on a weekly basis. They aimed to survey 50 people, and their teacher instructed them to use the stratified random sampling method to conduct the interviews. Explain the advantages of using stratified random sampling method. Award 1 mark for each explanation of the advantages of the use of stratified random sampling method. Award a maximum of 1 additional mark for further development of each explanation, where applicable. Possible responses include: • Stratified random sampling involves using random number generator and respondents would be identified without bias as every subject in the population has an equal chance of being selected [1 mark]. • Students could select their samples by interviewing a proportionate makeup to the population [1 mark] such as based on gender, for e.g. if the proportion of people who source for the groceries are 70% females, students would then survey the proportion of female respondents accordingly [1 additional mark]. • A representation of respondents from different age groups could be surveyed [1 mark]. For example, 18-29 (younger adults), 30-49 (middle-aged adults), 50-65 (seniors) and 66 and above (elderly) to consider the diversity in the	3

	population to better represent their take on the importance of wet market/supermarket/online shopping website [1 additional mark].	
	AO2	
Question	**Answer**	**Marks**
1(b)(ii)	**The students presented the responses gathered for Question 1 of the questionnaire, as shown in Fig. 1.3 (Insert). The figure shows how frequently residents visit wet markets, supermarkets, and online shopping websites on a weekly basis to meet their basic grocery needs.** **Using the survey results in Fig. 1.3, describe the popularity of wet markets in Singapore.** Award 1 mark for each description of evidence backing the popularity or diminishing popularity of the wet market, to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each description, where applicable. Possible responses include: • Overall, wet markets are generally popular in Singapore [1 mark], as 80% of the 30 respondents visit it regularly on a weekly basis to meet their basic grocery needs [1 additional mark]. OR Only 6 respondents indicated that they do not visit the wet market at all in a week, which is the lowest when compared to 8 for supermarkets and 20 for online shopping website [1 additional mark]. • 8 respondents indicated that they visited wet market 7 or more times a week to meet their grocery needs; the highest compared with only 4 who visited supermarket, and none visited online shopping platform 7 or more times a week [1 mark] • For people who do their grocery shopping at least 3 or more times a week, wet market also stands out to be the most visited in comparison to supermarket and online shopping website [1 mark]; wet market (15), supermarket (13), online shopping website (1) [1 additional mark]. AO2	4

Question	Answer	Marks
1(b)(iii)	**Explain how the reliability of the survey results shown in Fig. 1.3 can be improved.** Award 1 mark for each explanation of how students can consider the various factors below to improve the survey results. Award a maximum of 1 additional mark for further development of each explanation, where applicable. Possible responses include: Survey over a longer time frame • Conduct the survey over a few days instead of doing it only once on a Wednesday afternoon [1 mark] so that a wider range of respondents with different schedules and routines can be represented to increase reliability [1 additional mark]. Survey Conducted at Different Times/Days • Collect responses on both weekdays and weekends to reduce bias due to time-specific habits or routines [1 mark]. If the survey is only conducted on a weekday or at a fixed time, it might miss responses from certain groups like working adults or students, resulting in sampling bias [1 additional mark]. Account for Availability of Alternatives (e.g. supermarkets) • Respondents who live near more supermarkets may visit wet markets less regardless of distance, so a question on the availability of nearby supermarkets helps determine if low visit frequency is due to convenience rather than relevance [1 mark], improving the reliability of the survey by reducing the misinterpretation of respondents' shopping behavior [1 additional mark]. **AO2**	3

Question	Answer	Marks
1(b)(iv)	**Study Table 1.1, which shows a further breakdown of the information the students collected through the questionnaire, and Fig. 1.4, which shows a partially completed bar graph representing the questionnaire results by gender, based on data from Table 1.1.**	2

| | Use the information from Table 1.1 to complete the bar graph in Fig. 1.4, showing the number of female respondents who shop for their grocery needs seven or more times a week.

Award 1 mark for accurate plot of data on supermarket (female).
Award 1 mark for accurate plot of data on online shopping website (female).

AO2 | |

Question	Answer	Marks
1(c)	To better capture people's perceptions of the relevance of wet markets, the students generated a word cloud, as shown in Fig. 1.5 (Insert), based on responses to Question 4 of the questionnaire. Using Fig. 1.5, evaluate how well the data supports the relevance of wet markets in promoting social sustainability in Singapore. Award 1 mark for each evaluation on the relevance of wet markets for sustainable living in Singapore based on the data presented on the word cloud, to a maximum of 6 marks. Award a maximum of 1 additional mark for further development of each evaluation, where applicable. Possible responses include: Wet markets are important for sustainable living in Singapore: Wet markets provide shared community spaces to promote regular social interactions [1 mark], as words such as 'belonging', friends', community', neighbours' appear in bigger and bolder fonts on the word cloud [1 additional mark] suggesting that they are the more often mentioned responses pointing to the importance of wet markets in contributing to social sustainability When residents who live near the wet markets engage in regular interactions, it helps to build social resilience and promote mutual respect and understanding	6

amongst them, which would reduce misunderstandings and conflicts when issues arise. [1 mark]

Repeated encounters with objects and people at wet markets would likely promote a sense of place for regular visitors to the wet markets, creating memories that would likely enhance their sense of belonging/shared identity [1 market].

Wet markets are irrelevant/unimportant for sustainable living in Singapore:
Wet markets may have lost their appeal or relevance [1 mark] to some people as they are perceived as 'smelly, 'hot', wet', sweaty and 'noisy' by a significant number of respondents given their relatively bold fonts. [1 additional mark].

Such unpleasant experiences at wet markets might cause an individual to develop negative memories and avoid visiting them or sharing their negative feelings on social media, challenging other people's positive sense of place [1 mark]

If negative sentiments regarding the unpleasant and unhygienic environmental conditions of the wet markets are left unaddressed, the number of Singapore residents visiting the wet market is likely to decline further, making wet markets irrelevant for social sustainability [1 mark].

AO3

Question	Answer	Marks
2(a)	**Study Fig. 2.1 (Insert), which shows annual international tourist arrivals and tourist spending in Singapore from 2016 to 2024.** **Using Fig. 2.1, describe the changes in international tourist arrivals in Singapore from 2016 to 2024.** Award 1 mark for each description of the annual international tourist arrivals in Singapore, to a maximum of 3 marks. Award a maximum of 1 additional mark for further development of each description, where applicable. Possible responses include: • A slight overall increase in international tourist arrivals in Singapore from 2016 to 2024, by 0.1 million [1 mark]. • Decreasing trend from 2019 to 2021 [1 mark]. Tourist arrivals decreased drastically by 16.4 million from 2019 to 2020 but only decreased by 2.4 million from 2020 to 2021 [1 additional mark]. • Increasing trend from 2016 to 2019, then 2021 to 2024. [1 mark] Overall increase from 2016 to 2019 is much lower at 2.4 million than from 2021 to 2024 at 16.2 million [1 additional mark].	3

	AO2	
2(b)	**Explain how an increase in mobility could lead to the growth of tourism.**	**4**
	Award 1 mark for each explanation on how the increase in mobility could lead to the growth of tourism, to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each explanation, where applicable.	
	Possible responses include:	
	• More countries are constructing public transport infrastructure such as roads, railways and airports that will increase connectivity within different parts of a country, as well as between countries, boosting mobility that leads to the growth of tourism. [1 mark].	
	• For example, the opening of Changi Airport's Terminal 4 means that there can be more flights from other parts of Asia to Singapore, making travel within the region more convenient.	
	• The ability to move around due to expanded public transport networks makes it easy for tourists to visit multiple tourist destinations within a shorter time, leading to tourism growth [1 mark].	
	• For example, the addition of Downtown MRT line increases the accessibility of some tourist attractions such as Gardens by the Bay, Singapore Botanic Gardens, etc., encourage more tourists to visit these attractions.	
	Other plausible responses include the introduction of new modes of travel and increased private car ownership.	
	AO1	

Question	Answer	Marks
2(c)	**Study Fig. 2.2, which features the characteristics of two providers of tourism experiences and services.**	**1**
	Complete Fig. 2.2 by identifying the type of tour operators that match the characteristics described in column (i) and column (ii).	
	Award 1 mark for identifying the type of tour operators for both columns.	
	(i) Specialist tour operators (ii) Mass market tour operators.	
	AO1	
2(d)	**Study Fig. 2.3 (Insert), which is an advertisement featuring promotional fares for international flights to Tokyo and other Japanese cities, offered by Japan's two major national airlines.**	**3**

| With reference to Fig. 2.3, suggest how the promotional fares offered by Japan's major national airlines could potentially change the demand for tourism.

Award 1 mark for each suggestion of how the promotional fare can potentially change the demand for tourism to a maximum of 3 marks.
Award a maximum of 1 additional mark for further development of each suggestion, where applicable.

Possible responses include:

• By offering free domestic flights via Tokyo for travellers to visit other cities, lesser-known destinations that were not previously popular or easily accessible are likely to gain popularity [1 mark].
• Visits to Japan cities become more affordable, boosting its demand for tourism as more travellers would be attracted to travel [1 mark]
• When more travellers share their experiences online after their visits, more people would be enticed to visit these previously less popular destinations or 'second cities' [1 mark].
• Given this attractive promotional fare that allows travellers to visit additional cities on top of just visiting Tokyo alone, average duration of stay of tourists in Japan would likely be extended [1 mark].

AO2 | |

Question	Answer	Marks
2(e)	Study Fig. 2.4 (Insert), which shows an island that has been developed with tourist facilities. With reference to Fig. 2.4, suggest how tourism development is likely to impact the island. Award 1 mark for each suggestion on how the development of tourism is likely to impact the island, to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each suggestion, where applicable. Possible responses include:	4

	Negative environmental impact
	• (-) Island does not seem to have a proper waste disposal system and waste are disposed of at the dumping ground in the eastern part of the island, resulting in land pollution [1 mark].
	• (-)The development of tourism leading to an increase in number of people visiting the island to engage in swimming (at the beach in the western coast) and diving (in the northern part of the island) and likely compromise the water quality as irresponsible tourists are likely to litter on land or directly into the sea as they enjoy their activities [1 mark].
	• (-) Moreover, careless tourists may trample on corals and destroy mangrove trees and potentially threaten the marine ecosystem and affect their healthy growth [1 mark]
	• (+) Revenue generated from tourism receipts gained can be used to conserve coastal ecosystems such as the coral reefs and mangroves [1 mark].

Economic impact
• (+) Employment opportunities in the tourism sector created for the villagers of the island [1 mark]. Villagers can be employed in formal and informal tourism sectors such as hotel service staff, tour guides, etc. and earn an income to support their livelihood [1 additional mark].
• (+) Farmers can sell their produce to the restaurant or directly to the tourists to earn more income which can improve their standard of living [1 mark].

Social impact
• (+) Coral reefs and mangroves and the marine habitats found in the northern coastlines provide tourists and locals with cultural ecosystem services offered by nature - aesthetic, educational and recreational benefits [1 mark]. Local and tourists get to appreciate the beauty of corals and marine ecosystem as they engage in diving and swimming [1 additional mark].
• • (-) Tourist may contribute to road congestion and water/land pollution and negatively impact the local communities and their environment, causing the locals to develop negative sentiments towards tourists [1 mark].

AO1

Question	Answer	Marks
3(a)	**Study Fig. 3.1, which shows the global distribution of floods.**	3
	With reference to Fig. 3.1, describe the global pattern of flood distribution.	
	Award 1 mark for each valid description of the spatial distribution of flood frequency, to a maximum of 3 marks.	
	Possible responses include: • Floods occur across all continents. [1 mark] • The distribution of flood frequency is uneven. [1 mark] • The highest flood risk index (7–17) is observed in parts of Africa. [1 mark] • The lowest flood risk index (0.2–1) is found in Australia. [1 mark]	

	• A moderate flood risk index (2–4) is seen in parts of Southeast Asia and Central Africa. [1 mark] **AO2**	
3(b)	**Study Fig. 3.2, an extract about the drought in Thailand in 2020.** **With reference to Fig. 3.2, explain how climate change indirectly impacts humans.** Award 1 mark for each explanation of how climate change indirectly impacts humans, to a maximum of 3 marks. Possible responses include: • Farmers are unable to grow crops due to a lack of rain, resulting in decreased food production or food shortages. [1 mark] • Food prices increase due to reduced food supply, affecting the poor as a larger proportion of their income is spent on food. [1 mark] • This can lead to a higher risk of malnutrition and starvation. [1 mark] • The economic livelihoods of farmers are negatively impacted. [1 mark] **AO2**	3

Question	Answer	Marks
3(c)	**'Anthropogenic factors are the most important contributors to rising temperatures over the years.'** **To what extent do you agree with this statement? Explain your answer.** Relevant content: Natural factors • Orbit shape • Sunspot occurrences	9

Anthropogenic factors
- Burning of fossil fuels
- Changing land use for agriculture, industries and urbanisation

A possible conclusion:
While both natural and human factors contribute to rising temperatures, the scale, duration, and intensity of anthropogenic influences far outweigh those of natural variability. The sustained rise in global temperatures aligns closely with increased human activity, especially since the industrial era, making anthropogenic factors the more significant driver in the long term.
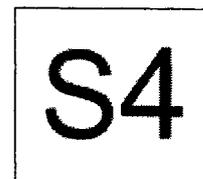
AO3

Generic Level Descriptors for 9-mark AO3 Questions		
Level	Marks	Descriptors
3	7–9	Develop arguments that support both sides of the discussion clearly, using a range of points with good elaboration. Examples used demonstrate a comprehensive understanding of the issue or phenomenon. Evaluation is derived from a well-reasoned consideration of the arguments.
2	4–6	Develop arguments that support one side of the discussion well, using one or two points with some elaboration. Example(s) demonstrate a good understanding of the issue or phenomenon. Evaluation is well supported by arguments.
1	1–3	Arguments are unclear with limited description or may be listed. No examples provided or examples are generic, demonstrating a basic understanding of the issue or phenomenon. Evaluation is simple, missing or unclear.
0	0	No creditworthy response.

ANGLICAN HIGH SCHOOL
SECONDARY 4
PRELIMINARY EXAMINATIONS 2025

S4

GEOGRAPHY	2279/02

Paper 2

27 August 2025

MAXIMUM MARK: 50

Question	Answer	Marks
1(a)	**Study Fig. 1.1 (Insert), which shows land use in Singapore.** **With reference to Fig. 1.1 (Insert), suggest reasons for the spatial pattern of industrial areas in Singapore.** Award 1 mark for each suggested reason given for the spatial pattern of industrial areas in Singapore. Possible responses include: • Industrial areas are mainly clustered in the west of Singapore. [1 mark] • Located away from main residential areas and nature areas to reduce air pollution in those areas. [1 mark] • Clustering allows industries to tap on each other's expertise, share infrastructure, and access common facilities, fostering cooperation and collaboration. [1 mark] • Locating industries close together improves logistics and transportation efficiency, as goods and raw materials can be moved more quickly between them and nearby ports. [1 mark]	3
1(b)	**Study Fig. 1.2, which shows an event poster from the Changi Simei Residents' Committee (RC) Centre.** **With reference to Fig. 1.2, describe how community activities can contribute to the effectiveness of disaster risk management plans.** Award 1 mark for each description of how community activities can help disaster risk management plans to be effective. Award a maximum of 1 additional mark for further development, where applicable Possible responses include: • Community events strengthen relationships among residents and foster positive ties within the neighbourhood [1 mark], as events such as Racial Harmony Day provide opportunities for residents to participate and come together. [1 additional mark] • Community events encourage residents to get to know their neighbours so that they can depend on one another during emergencies, hazards, or disasters. [1 mark] Hence, residents can get help faster from one another. [1 additional mark] • Community events integrate people of different ages and backgrounds [1 mark], allowing vulnerable individuals such as the elderly and people with disabilities to be better supported [1 additional mark] or to contribute different experiences and skills during disaster risk management. [1 additional mark]	4

Question	Answer	Marks
1(c)	**Explain the disadvantages that people and nature may bring to each other.** Award 1 mark for each valid explanation of how people and nearby nature areas negatively affect each other, up to a maximum of 4 marks. Award an additional 1 mark for further development of each explanation, where applicable. If the response addresses only one direction of the relationship (e.g. only how people affect nature or only how nature affects people), award a maximum of 3 marks. Possible responses include: **How people bring disadvantages to nature** <u>Soil erosion and damage to vegetation</u> • When people hike along non-designated trails in nature areas, they may cause soil compaction, which prevents rainwater from infiltrating the surface. [1 mark] • This leads to higher surface runoff and soil erosion as flowing water washes away soil particles. [1 additional mark] • Trampling on vegetation can damage plants and affect their growth. [1 mark] • In 2014, human activities led to severe soil erosion and habitat degradation in Bukit Timah Nature Reserve. This resulted in the limiting of public access to the reserve for 2 years. [1 additional mark] <u>Worsening pollution and disturbing wildlife</u> • Littering worsens pollution in natural areas. [1 mark] • Animals can be cut by metal cans or become entangled in plastic containers and bags. [1 mark] • Some animals may mistake litter for food and consume it. [1 mark] This may cause injury, suffering, and even death. [1 additional mark] • Feeding wild animals can lead to changes in their habits and behaviour. Human–wildlife conflict may increase when animals start associating people with food. [1 mark] *Any relevant example may be credited.* [1 additional mark] **How nature may bring disadvantages to people** • As wildlife populations in cities increase, people who do not know how to interact with them may unintentionally provoke animals, leading to attacks. [1 mark]	4

| | • Some animals may become confused and fearful when they venture into unfamiliar open spaces, increasing the likelihood of attacks if triggered. [1 mark]
• Environmental protection may sometimes be perceived as limiting development. Some local communities may feel that protection of nature is done at the expense of their needs. [1 mark] *Example: The Cross Island Line was re-routed around the Central Catchment Nature Reserve to protect the rainforest, but this affected residents as it caused inconvenience, potential property damage, and the acquisition of some homes. [1 additional mark]* | |

Question	Answer	Marks
1(d)	**Study Fig. 1.3 (Insert), which shows the environment of Bishan–Ang Mo Kio Park.** **With reference to Fig. 1.3 (Insert), explain the benefits residents can gain from the park's regulating ecosystem services.** Award 1 mark for each explanation of the benefits residents can gain from the park's regulating ecosystem services. Award a maximum of 1 additional mark for further development of each explanation, where applicable. Possible responses include: • Trees in the park can regulate climate by lowering surface and air temperatures by providing shade to residents. [1 mark] • Trees and other plants in the park regulate air quality by removing pollutants from the atmosphere. [1 mark] • The vegetation cover in the park can regulate water flow by reducing surface runoff so that water is retained in the soil. [1 mark] This is also known as water flow regulation. [1 additional mark] • Forests can help to cool areas by generating rainfall, thus increasing water availability both locally and regionally. [1 mark]	4
2(a)(i)	**Study Fig. 2.1, which shows the various parts of an earthquake.** **Identify the parts of an earthquake marked X and Y shown in Fig. 2.1.** Award 1 mark each for the correct identification of X and Y. X: Epicentre Y: Focus	2
2(a)(ii)	**With reference to Fig. 2.1, describe the processes that result in earthquakes.** Award 1 mark for each valid description of a process that results in earthquakes, to a maximum of 4 marks. • Earthquakes generally occur along plate boundaries, which contain systems of deep fractures called faults. [1 mark]	4

• Rock masses on either side of a fault are pushed by tectonic forces; friction causes the rocks to become locked, and stress builds up. [1 mark] • When the stress exceeds the strength of the fault, the rocks snap or suddenly move to a new position, causing seismic waves to be released at the focus. [1 mark] Seismic waves radiate energy from the focus to the point above the Earth's surface (epicentre), where shaking is generally felt most strongly, resulting in earthquakes. [1 mark]	

Question	Answer	Marks

2(b)	**Study Figs. 2.2 and 2.3, which show the disaster risks caused by earthquakes in Myanmar.**
	
	'Disaster risks caused by earthquakes are most influenced by vulnerable conditions.'
	With reference to Figs. 2.2 and 2.3, to what extent do you agree with this statement? Explain your answer.
	
	Relevant content
	
	Nature of hazard
	    • Duration of shaking
	    • Time of shaking
	
	Vulnerable conditions
	    • Quality of building design and construction
	    • Soil and rock properties
	
	Exposure
	    • Population density
	    • Distance from epicentre
	
	Possible approaches:
	
	Vulnerable conditions versus nature of hazard
	
	In conclusion, although the nature of an earthquake influences the level of hazard, it does not by itself determine the severity of disaster risk. What matters more is the level of vulnerability within affected communities. Poorly constructed buildings, fragile infrastructure, unsuitable ground conditions, and weak emergency systems are the key factors that turn a natural hazard into a human disaster. While seismic events cannot be prevented or controlled, vulnerability can be significantly reduced through planning, regulation, and preparedness. This makes vulnerability, not the natural hazard, the most important factor in shaping the scale and impact of earthquake disasters. The statement is therefore strongly supported.
		9

OR

Vulnerable conditions versus exposure

In conclusion, both vulnerable conditions and exposure contribute to the scale of disaster risk during an earthquake, but vulnerable conditions are the more critical factor. High population exposure increases the number of people at risk, but it is the vulnerability of the built environment, the quality of infrastructure, and the capacity to respond that largely determine the extent of damage and loss of life. Even in areas with high exposure, effective planning and strong building standards can significantly reduce disaster impacts. Therefore, while exposure plays a role in shaping potential risk, it is the presence of vulnerable conditions that ultimately has the greatest influence on the severity of earthquake-related disasters.

Generic Level Descriptors for 9-mark AO3 Questions		
Leve l	**Mark s**	**Descriptors**
3	7–9	Develop arguments that support both sides of the discussion clearly, using a range of points with good elaboration. Examples used demonstrate a comprehensive understanding of the issue or phenomenon. Evaluation is derived from a well-reasoned consideration of the arguments.
2	4–6	Develop arguments that support one side of the discussion well, using one or two points with some elaboration. Example(s) demonstrate a good understanding of the issue or phenomenon. Evaluation is well supported by arguments.
1	1–3	Arguments are unclear with limited description or may be listed. No examples provided or examples are generic, demonstrating a basic understanding of the issue or phenomenon. Evaluation is simple, missing or unclear.
0	0	No creditworthy response.

Question	Answer	Marks
3(a)	**Study Fig. 3.1 (Insert), which shows an aerial view of solar panels on a green rooftop at Rifle Range Nature Park in Singapore.** **Sketch the aerial view of Rifle Range Nature Park shown in Fig. 3.1 (Insert). Annotate your sketch to show two features that contribute to Singapore's efforts in sustainable development.**	3

	Award 1 mark for a relevant sketch that shows both solar panels and greenery. Award 1 mark for each relevant annotation that links the feature to sustainable development, up to a maximum of 2 marks. Possible responses for annotations include: • Solar panels: renewable energy sources that reduce the need to burn fossil fuels to generate electricity. [1 mark] • Greenery: keeps the environment cool by releasing moisture through evapotranspiration. [1 mark] • Greenery: removes air pollutants and purifies the air. [1 mark]	
3(b)(i)	**Study Fig. 3.2 (Insert), which shows the numbers of live births and deaths in Singapore from 2019 to 2023.** **Using Fig. 3.2 (Insert), compare the numbers of live births and deaths in Singapore from 2019 to 2023.** Award 1 mark for each valid point of comparison that clearly compares the numbers of live births and deaths, with reference to the data. Possible responses include: • Live births decreased every year, while deaths increased every year. [1 mark] • The highest number of live births was in 2019, while the highest number of deaths was in 2023. [1 mark] • The lowest number of live births was in 2023, while the lowest number of deaths was in 2019. [1 mark] • The greatest difference between live births and deaths was in 2019, at 17 833. [1 mark] • The smallest difference between live births and deaths was in 2023, at 6 653. [1 mark]	3

Question	Answer	Marks
3(b)(ii)	**Explain the social issues Singapore faces due to changing demographics, as shown in Fig. 3.2.** Award 1 mark for each explanation of the social issues Singapore faces due to changing demographics, as shown in Fig. 3.2. Award a maximum of 1 additional mark for further development, where applicable. Possible responses include: • The local population is starting to decline. [1 mark] More reliant on foreign labour/manpower from other countries. [1 additional mark] • Increasingly diverse society, including Singapore citizens, new citizens, permanent residents, international students, and migrant/domestic workers (at	4

| | least 3 mentioned). [1 mark] May result in disputes among people due to differences between various groups. [1 additional mark]
 • Ageing population with a higher proportion of elderly residents. [1 mark] Greater demand for healthcare services and elderly support facilities. [1 additional mark] | |

Question	Answer	Marks
3(c)	**Study Figs. 3.3 and 3.4 (Insert), which show the Urban Heat Island (UHI) Index and a regional map of Singapore, respectively.** **With reference to Fig. 3.3 and Fig. 3.4 (Insert), explain the spatial distribution of the Urban Heat Island (UHI) Index in Singapore.** Award 1 mark for each explanation of the spatial distribution of the Urban Heat Island (UHI) Index in Singapore, up to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each explanation, where applicable. Possible responses include: **High UHI** • UHI intensity generally decreases from the central region of Singapore (e.g. Downtown, Central Business District (CBD), Orchard, Bugis, Marina Bay, Toa Payoh) to the outskirts (e.g. Mandai). [1 mark] **OR** • The central and southern parts of Singapore have higher UHI intensity compared to the northern areas, which have lower UHI intensity. [1 mark] • The concentration of concrete surfaces, lack of natural vegetation, and human activities in these areas absorb and retain heat, leading to higher UHI. [1 mark] • These urbanised areas have air-conditioning systems and cars, which emit heat and raise surface temperatures. [1 additional mark] **Moderate UHI** • Moderate UHI in towns such as Ang Mo Kio, Clementi, Jurong East, and Tampines. [1 mark] These areas have significantly built-up surfaces, but some green covers such as parks and roadside trees help moderate the heat to an extent. [1 additional mark] **Lower UHI** • Lower UHI in the nature reserves and water catchment areas (e.g. Bukit Timah, Central Catchment), coastal parks (e.g. East Coast Park, Pasir Ris Park), and water bodies such as reservoirs and the Southern Islands. [1 mark] These areas have trees that provide shade and evapotranspiration, cooling the air or water bodies that moderate temperature by absorbing heat during	4

	the day and releasing it slowly at night. [1 additional mark] (depending on which point is stated)	

Question	Answer	Marks
3(d)	**Study Fig. 3.5, which shows an extract about the Sumatra Earthquake in Indonesia in 2016.** **With reference to Fig. 3.5, evaluate the possible impacts on Singapore due to the occurrence of tectonic hazards in the region.** Award 1 mark for each explanation of a possible impact on Singapore due to the occurrence of tectonic hazards in the region. Award a maximum of 1 additional mark for further development of each explanation, where applicable. Award a maximum of 5 marks if only positive or only negative impacts are given. Possible responses include: **Negative impacts** • Infrastructure may be damaged due to the swaying. [1 mark] • People may be hurt by falling or swaying objects at home due to the tremors. [1 mark] • Places built on reclaimed land are more prone to liquefaction. [1 mark] **Positive impacts** • The possibility of earthquake tremors in Singapore has led to national preparedness plans. [1 mark] Island-wide public sirens warn and alert people living in specific neighbourhoods about threats they may face during a disaster. [1 additional mark] • Since 1997, all new houses and flats must, by law, have shelters incorporated into their development. [1 mark] • Technology is harnessed to monitor tectonic movements to better prepare Singapore for any hazards that might arise. [1 mark] NEA's regional earthquake and tsunami monitoring alert information service can be accessed via its website or mobile app to alert people. [1 additional mark]	6