Name	Class	Register Number

GEOGRAPHY (2279/01)

24/S4PRE/GE1

Paper 1

Thursday **22 August 2024** **1 hour 45 minutes**

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VICTORIA SCHOOL

PRELIMINARY EXAMINATION
SECONDARY FOUR

Candidates answer on the Question Paper

READ THESE INSTRUCTIONS FIRST

Write your name, class and register number on all the work you hand in.
Write in dark blue or black pen.
You may use a HB pencil for any diagrams or graphs.
Do not use paper clips, highlighters, glue or correction fluid.

Answer **all** question.

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

The total number of marks for this paper is 50.

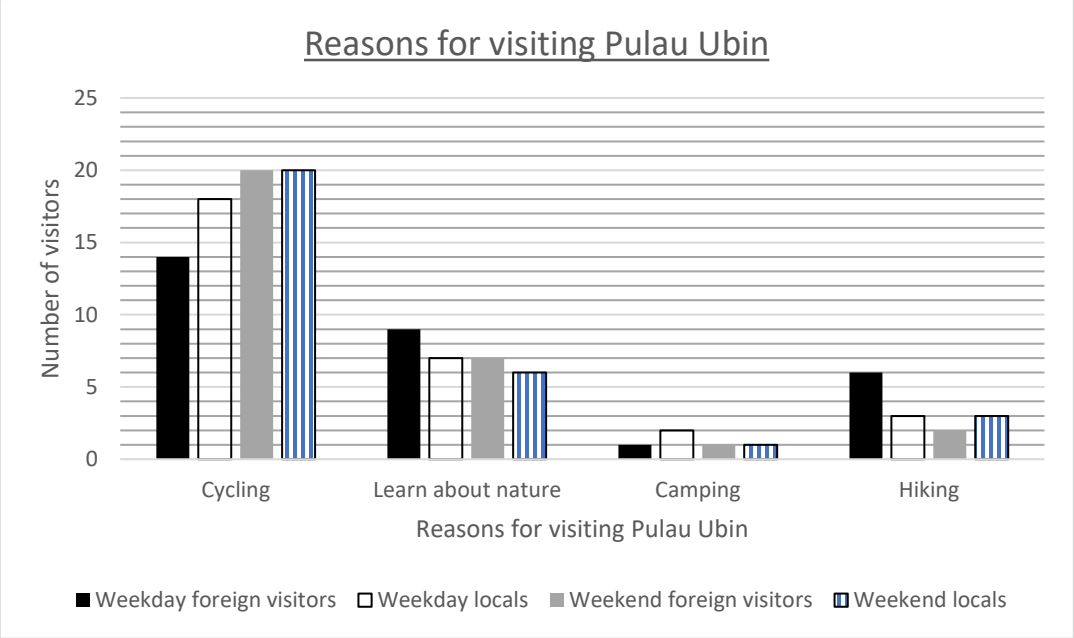
ANSWER SCHEME

Setter: Mr Heng Yan Kai and Mr Kelvin Koh

Answer **all** questions

1 Cluster 1 : Geography in Everyday Life

A group of secondary school Geography students went to Pulau Ubin, an offshore island which is also a tourist attraction in Singapore. They wanted to test their hypothesis, '*More foreign tourists than locals visit Pulau Ubin to enjoy the nature'*. They took a bum boat ride across to reach Pulau Ubin's jetty. Each bum boat ride can take 12 visitors at a time. At the jetty, they carried out their investigation by interviewing the visitors that reached the island by boat. They used random sampling method to choose the visitors that they wish to interview from each bum boat. Altogether, they interviewed a total of 30 foreign visitors and 30 locals. The students carried out their study once during an afternoon of a weekday and another occasion during the weekend.	
(a)	Describe possible risks that the students may encounter in their investigation. [2]
	Award 1 mark for distinct risk written to a maximum of 2 marks **Possible responses include:** • The students may fall into the water if they are not careful when boarding and alighting from their boat [1]. • They may injure themselves if they are not careful and slip on the wet grounds of the main jetty when it rains [1] **AO 1**
(b)	Describe how the students carried out the simple random sampling method. [2]
	Award 1 mark per step to a maximum of 2 marks. **Possible responses include:** • Every visitor that disembarked from the bum boat is given a number [1]. • A random number generator is used to generate random numbers to select the visitors [1]. **AO 1**

(c)	The teacher reminded the students that their survey should not comprise closed-ended questions only but also contain a couple of open-ended questions. Explain why the teacher reminded the students as such? [1]
	Award 1 mark for valid response to a maximum of 1 mark. **Possible response:** • This is because open-ended questions provide in-depth perceptions/information from the respondents which could help the students know more about their responses [1]. **AO 1**
(d)	The students collated the data they collected and presented their findings in a graphical manner as shown in Fig 1.3.
	 **Fig 1.3**

	(i)	Use Fig. 2 to compare the reasons that foreign visitors and locals visit Pulau Ubin. [4]

	Weekday		Weekend	
Reasons for visiting Pulau Ubin	**Foreign visitors**	**Local visitors**	**Foreign visitors**	**Local visitors**
Cycling	14	18	20	20
Learn about nature	9	7	7	6
Camping	1	2	1	1
Hiking	6	3	2	3

Award 1 mark for each similarity to a maximum of 2 marks.
Award 1 mark for each difference to a maximum of 2 marks.
Response must have at least 1 similarity and 1 difference. Accept any plausible answers.
Award a maximum of 1 additional mark for data support per evaluation point, where applicable.

Possible responses include:
Similarities
- Most foreign visitors and locals visit Pulau Ubin for cycling. [1]
- 14 and 20 for foreign visitors during the weekday and weekends and 18 and 20 for locals. There are 4 and no change in foreign visitors than locals during the weekday and weekends respectively. [1 additional]
- Equal number of foreign visitors and locals visit Pulau Ubin for camping during weekends. [1]
- With only 1 foreign and local visitor camping on the weekends. [1 additional]

Differences
- There are more foreign visitors who visit Pulau Ubin to learn about nature than locals. [1]
- 9 and 7 for foreign visitors during the weekday and weekends and 7 and 6 for locals. There are 2 and no change in foreign visitors than locals during the weekday and weekends respectively. [1 additional]
- There are more foreign visitors who visit Pulau Ubin to hike than locals during the weekday. [1]
- 6 for foreign visitors and 3 for locals. There are 3 more foreign visitors than locals during the weekday. [1 additional]

AO 2

	(ii)	Describe the situations where the graphical method used in Fig 1.3 is appropriate. [2]
		Award 1 mark for each description to a maximum of 2 marks.

		Possible responses include: • It is used to present data with discrete categories [1]. • It is used to compare data between different categories [1]. **AO 1**

(e)		In addition to their earlier investigation, the students also wanted to find out the relationship between the distance of the attractions on the island from the main jetty and the number of visitors visiting these attractions. For their geographical investigation, they identified the following attractions (their distance from the island's main jetty is given in brackets) [Insert Fig. 3] : a) Chek Jawa [3.6 km] b) The Malay Kampong [1.2 km] c) Maman Campsite [2.3 km] d) Teck Seng's Place (operational only during weekends) [0.5 km] e) NParks Secret Gardens [0.3 km] f) German Girl shrine [2.7 km] g) Bukit Puaka [2.1 km] The group of students decided to carry out their study on a weekday afternoon and the whole day of a weekend. They only stationed themselves at the island's main jetty and carried out their interviews at regular time intervals of 2 hours each. For their sample size, the students decided to interview any 30 visitors they meet at the main jetty.
	(i)	Suggest how the students can improve their data collection methods for their investigation. [3]
		Award 1 mark for each suggestion to a maximum of 3 marks. **Possible responses include:** • They should leave out Teck Seng's Place as it is operational only during weekends. [1] • They should carryout their study on more days in the weekday and weekend to get a bigger range of responses. [1] • They could station themselves at more places to collect their data for a wider coverage. [1] • The students could interview more visitors instead of just 30 to get a more representative sample size. [1] **AO 2**

(ii) Study Table 1.4, which shows the data collected by the students during the weekday and the weekend when they stationed themselves at the main jetty.

S/N	Attractions	Distance of attraction from the main jetty [km]	Number of visitors on weekday*	Number of visitors on weekend*
(a)	Chek Jawa	3.6	14	28
(b)	The Malay Kampong	1.2	16	19
(c)	Maman Campsite	2.3	3	9
(d)	Teck Seng's Place (operational only during weekends)	0.5	-	12
(e)	NParks Secret Gardens	0.3	17	28
(f)	German Girl shrine	2.7	2	3
(g)	Bukit Puaka	2.1	2	2

Table 1.4

* - The total number may not add up to 30 respondents as some of them may visit more than 1 attraction during their trip.

How far do the data in Table 1.4 support the students' hypothesis? [6]

Award 1 mark per response in support of the hypothesis to a maximum of 3 marks.
Award 1 mark per response not in support of the hypothesis to a maximum of 3 marks.
Response must have at least 1 in support and 1 not in support. Accept any plausible answers.
Award a maximum of 1 additional mark for data support per evaluation point, where applicable.

Possible responses include:
Support

- Generally, the hypothesis is proven as fewer visitors visited the German Girl Shrine as compared to the Secret Garden. [1]
- There are 2 (weekday) and 3 (weekend) who visited the shrine compared to 17 (weekday) and 28 (weekend) who visited the Secret Garden. The former is further away from the main jetty [1 additional].
- More visitors also visited Bukit Puaka compared to other sites such as The Malay Kampong. [1]
- There are 2 (weekday) and 2 (weekend) who visited Bukit Puaka compared to 16 (weekday) and 19 (weekend) who visited The Malay Kampong. The former is further away from the jetty. [1 additional].

	Not support • However, Chek Jawa is the furthest away (with 3.6 km) from the main jetty but has more visitors that Bukit Puaka which is nearer (at 2.1 km) [1]. • It has 14 (weekday) and 28 (weekend) visitors respectively, but Bukit Puaka only has 2 visitors for both the weekday and weekend [1 additional]. • Also, during the weekend, both Chek Jawa and the Sensory trails have the same number of visitors. [1] • Both has 28 visitors although the former is further away by 3.3 km [1 additional]. **AO 3**

2 Cluster 2 : Tourism

	(a)	With the use of an example, explain why the diversity in tourism demand has increased in the recent years. [3]
		Award 1 mark per explanation to a maximum of 3 marks. Award a maximum of 1 additional mark for the development of each explanation. Explanation marks are capped at 2, students are required to earn the final mark with the relevant named example * **Possible responses include:** • Fueled by globalization, tourists are increasingly looking for new experiences through various media platforms to satisfy their curiosity and interests. [1] • This is possible because people share and get more information about these new forms of tourism through online media [1 additional]. • For instance, tourists learn of heritage tourism online and participate in activities of a place to experience its culture and learn about its history. [1] • By experiencing the culture and learning about the history of the place, heritage tourists are able to fulfill their need for unique travel experiences and understand the rich and diverse global cultures outside of their home country [1 additional]. • [Final Mark] An example is the ancient city of Machu Picchu in Peru which attracts more than a million tourists every year. Many are attracted to it to learn more above the unique history and culture of the ancient city and its inhabitants [1]. **AO 1**
	(b)	Study Fig 2.1, which shows information about the tourism development of Sitges a resort area that is located in Spain.
		Sitges developed more sustainable strategies to attract more tourists. The resort has been rebranded as an all-year destination with events planned beyond the traditional holiday season. Sitges has also become one of the main destinations for Meetings, Incentives, Conferences and Exhibitions (MICE) tourism in Spain with its specialised hotels catering to the needs of the businesses. In addition, the Sitges Council aims to build upon the earlier role of Sitges as a centre of art and culture by developing activities related to creativity, art and culture. The project will see the development of a state of the art campus with a school of music and dance. These facilities will attract up to 2,000 students a year as well as a further 2000 academic staff at the campus. It has been estimated that each student will spend approximately 750€ per month in Sitges of which 150€ will be on tourist and leisure facilities. Visits by the family and friends of the students to Sitges are expected to add to the use of the town's tourist facilities.
		Fig 2.1
		Using Fig 2.1, explain why tourism development of Sitges is at the rejuvenation stage. [3]
		Award maximum of 1 mark for definition of what it means to be at rejuvenation stage. Award maximum of 1 mark for explanation why Sitges is at rejuvenation stage. Award maximum of 1 mark for evidence to show that Sitges is at the rejuvenation stage.

		Possible responses: • [Definition] Rejuvenation stage is where the tourism site goes through a period of change to refurbish or enhance the attractions/rebranding the place to attract more tourists. [1] • [Evidence] Sitges was “rebranded as an all-year destination with events planned beyond the traditional holiday season”. [1] • [Explanation] The rebranding has led to an increase in tourist arrivals [1]. • [Evidence] “the specialized hotels for MICE and the development of a state of the art campus with a school of music and dance” [1] • [Explanation] New investments to develop attractions and facilities such as were made [1]. **AO 2**

(c) Study Fig 2.2 and 2.3, which show information about eco-tourism and community-based tourism.

Market Growth of Eco-tourism

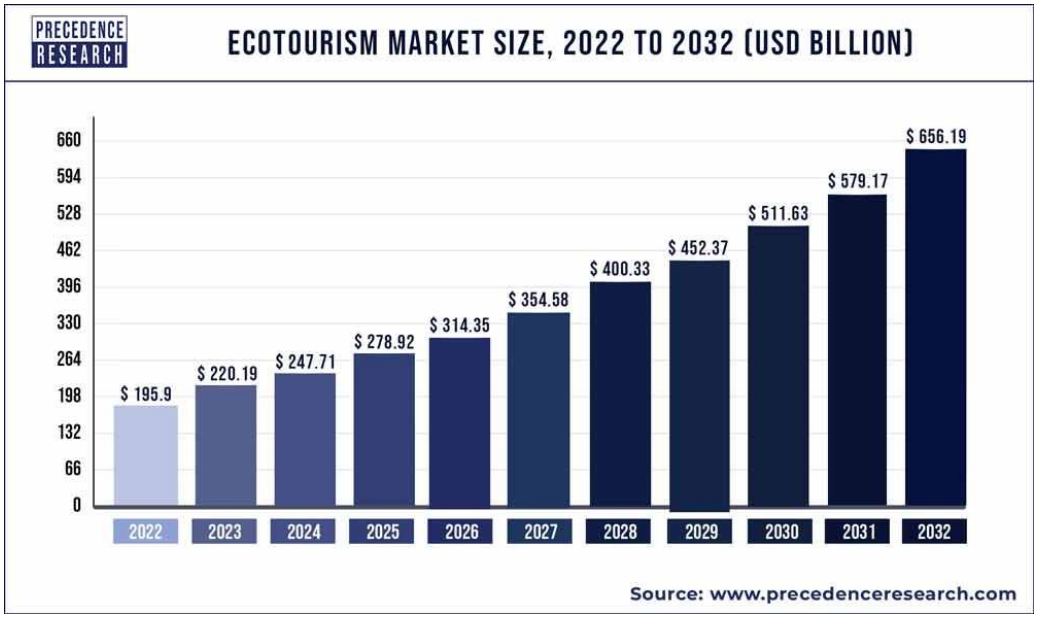


Fig 2.2

Impacts of Community-Based Tourism

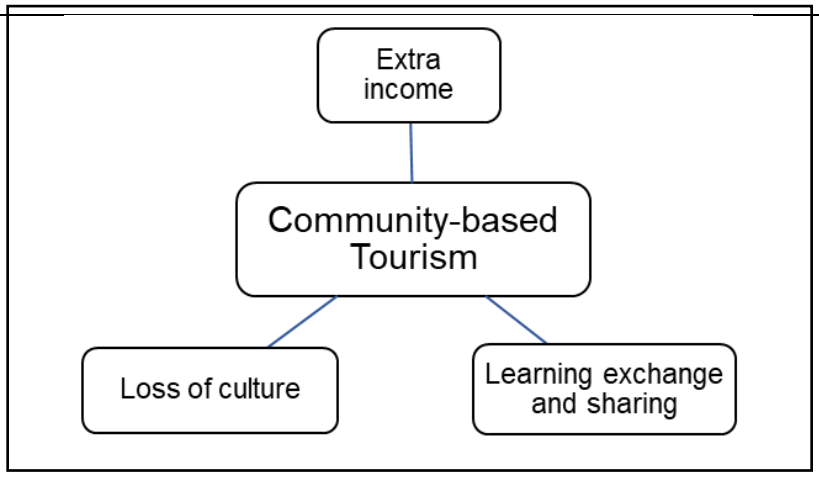


Fig 2.3

With reference to Figs 2.2 and 2.3, how far do you agree that eco-tourism is more effective than community-based tourism in promoting sustainable tourism development? Explain your answer with the use of examples. [9]

Level	Marks	Descriptors
3	7 – 9	• Evaluation whether eco-tourism or community-based tourism (CBT) is more sustainable. • Detailed explanation of sustainability eco-tourism and CBT • Detailed examples of eco-tourism and CBT
2	4 – 6	• Some attempts at evaluation whether eco-tourism or community-based tourism (CBT) is more sustainable but discussion is not clear • Some explanation of sustainability eco-tourism and CBT • Vague examples of eco-tourism and CBT
1	1 – 3	• No evaluation whether eco-tourism or community-based tourism (CBT) is more sustainable. • Little/no explanation of sustainability eco-tourism and CBT • Lack of examples of eco-tourism and CBT

Candidates may use the following points:

- Ecotourism is a form of sustainable tourism that often takes place in natural areas which are scenic and allows for tourists to experience nature.
- It aims to conserve the natural environment while benefitting the local community, thus ensuring environmental, economic and social sustainability
- Ecotourism often involves many stakeholders depending on the projects undertaken.
- Strategies used to achieve the aims of ecotourism include educating and increasing tourists' appreciation of nature. This encourages tourists to take action to conserve and minimize damage to the environment, ensuring environmental sustainability.
- Another strategy is to put in place measures to minimize the negative impacts on the environment. Tourism revenue is channelled into the conservation of the natural environment such as by hiring local park rangers to ensure that laws set up to protect the environment are adhered to and that damage to the environment is minimized, ensuring environmental sustainability [1].
- Example, the Galapagos Islands in Ecuador attract many tourists for their unique flora and fauna.
- To conserve this unique biodiversity, 97% of the island's total land area was declared a national park, with only 3% for humans to live on.

		• Authorities implemented some rules and regulations to protect the environment such as limited the number of visitors in the park on any given day to minimise disturbances to the wildlife. Tourists are required to pay an entrance fee of USD$150 when visiting the park, and the revenue earned is issued to fund conservation projects. • Tourists are not allowed to explore the islands on their own. A guide who educates tourists, is required at each site. • The locals are also involved in the ecotourism industry by offering day tours and homestays to small group of tourists.
		• *However, there is uncertainty over the continuity of efforts in conserving nature. Ecotourism does not work when ecotours are overwhelmingly popular with tourists. The presence of many tourists interacting with nature may destroy the ever environment they seek to protect.* • *There may a a strong desire to earn profits from ecotourism which may lead to some aims of ecotourism being compromised, and nature may not be conserved.* • *Example, in the Galapagos, Islands, where ecotourism is practiced, the large increase in the number of tourists has resulted in erosion along some trails, and also caused disturbance to wildlife and plants. Oil spills from many boats have resulted in serious water pollution.* • *There is uncertainty over involving local communities. Demand for manpower to meet the needs of tourists may cause some tourism-related businesses to hire non-locals.* • *This is especially so when locals are not sufficiently equipped with the skills and knowledge required, and authorities or businesses do not put in place measures to train locals.* • *Hence, the benefits to local communities are not maximised.* • *Example, in Kutri, India, it was found that economic leakages occur when locals do not have the necessary skills, resulting in jobs going to non-locals.*
		• CBT is a type of innovative small-scale tourism experience that is managed by local communities. • This includes homestays and agricultural tourism. • It aims to maximise local communities' involvement in tourism and the benefits to them, ensuring economic and social sustainability. • The strategies used to achieve he aims of CBT include encouraging the local community to participate in decision-making on tourism development in their community. Local communities have greater knowledge of their economic, social and environmental needs and hence, their decisions can help to ensure that needs are met in a sustainable way. • Example, Candirejo Village in Indonesia where local communities suggest cultural and nature-based experiences that can be developed without disrespecting their heritage and damaging the local environment. • Another strategy puts in place measures to increase economic and social benefits to local communities.

		• The economic benefits encouraged the locals to innovate, set up businesses and other tourism experiences to cater to the needs of the tourists. These businesses and tourism experiences provide employment to locals, minimize leakages and benefit locals economically.Revenue generated from tourism can be directed to community projects such as funding schools and clinics. • This will improve the social well-being of the local community as they receive better education and healthcare. • Finally, educating and increasing tourists' appreciation of local cultures and protection of the environment by promoting interactions between locals and tourists to develop respect for local cultures and environment. • Example, through traditional homestays in the Binsar Wildlife Sanctuary, tourists can live with a local host family and participate in daily activities related to local cultures and traditions. This helps them appreciate the local cultures and environment more, which motivates local to preserve their heritage and environment.
		• *However, there could be loss of culture as without sufficient measures, when local communities offer tourism experiences out of their cultures, it may result in commodification, resulting in the loss of authenticity of their cultures.* • *Example, in CBT projects in Kyrgyszstan, the commodification oof local traditions to suit tourists' preferences has been observed.* • *Competition with large-scale tourism developments where local communities lack some of the necessary skills and finances to further develop the local tourism industry.* • *Many face difficulties in communicating with tourists and areill-equipped to undertake marketing campaigns in order to compete with other tourism developments, especially the large-scale ones. They may lack the finances to start new tourism experiences or tourism-relat businesses.* • *Large scale tourism developments such as hotel resorts on the other hand, often have greater finances to undertake marketing campaigns and therefore attract more tourists.*
		• In terms of scale, CBT is on a local scale as compared to ecotourism which may be on a national scale. Given that the local scale is more manageable and easier to monitor, CBT may be more effective if the measures put in place help to monitor its success. With ecotourism, since it is on a larger scale, it would be tougher to find the culprits who damage the environment. • In terms of time, since both ecotourism and CBT are long term sustainable tourism development plans, if both are carried out properly, it can benefit the environment, the locals and the economy equally. **AO 3**

3 Cluster 3: Climate

	(a)	Suggest how the change in climate might impact the aquatic ecosystems in the world. [5]
		Award 1 mark for each suggestion, to a maximum of 5 marks. Award a maximum of one additional mark per elaboration where applicable. **Possible responses include:** • It becomes a threat to coral reefs as corals are highly fragile ecosystems and vulnerable to coral bleaching. [1] • With the increase in ocean temperature, it causes algae that live in corals to leave them, turning the corals white and these bleached corals are likely to die. [1] • Death of these coral reefs would result to the loss of homes of millions of aquatic species as well as food sources to many other species that depends on the corals. [1 additional] • Oceans are also important natural carbon sinks due to the presence of phyto planktons which absorbs carbon dioxide as they photosynthesize. [1] • With the increase in carbon dioxide emission leads to ocean absorbing excessive amounts of carbon dioxide, which leads to carbonic acid forming in the water, and these acids dissolves calcium carbonate. [1] • Calcium carbonate is needed by aquatic organisms such as corals, mussels, and oysters to form their skeletons and shells. This result in corals eroding and dying. [1 additional] • There is also disruption of marine food webs due to slowing down of global ocean circulation where it reduces the sinking of water at the poles, thus, warm surface waters therefore mix less with cooler, deeper waters. [1] • This then separates near surface aquatic life such as phytoplankton from the nutrients below, resulting the death of many of these planktons and eventual demise of other organisms that feeds on them. [1 additional] • With the increase of ocean surface temperature, it also changes the geographic distribution of aquatic species. [1] • With warming oceans, aquatic species migrate to areas where temperature are more favorable, thus, species will move to poleward and deeper water, thus equatorial areas will experience a drop in biodiversity, and poles will increase in the biodiversity. [1 additional] • There will also be changes in composition of aquatic ecosystem, as the distribution changes, the mix of prey, predators and competition in the ecosystem also changes. [1] • This then results in some species flourishing and some unable to adapt to the changes, which eventually will face eventual extinction. [1 additional] **AO 1**

	(b)	Study Fig. 8, which shows the excerpt on the sequence of natural events that happened in Vietnam and Fig. 9, which shows the location of Vietnam in Southeast Asia.
		Flooding in Hanoi, Vietnam Hanoi is taking drastic measures to reduce the risk of flooding during the rainy season, said Vo Nguyen Phong, Director of Hanoi's Department of Construction. Phong said Hanoi had entered the rainy season of 2023, characterized by heavy rainfall, resulting in recurrent flooding of numerous streets in the capital. North Vietnam's rainy season parallels summer and the beginning of Autumn. During this time, it is hot and sunny with the temperature varying from 28°C to 38°C (sometimes reaching the peak of 40°C), which makes it the hottest rainy season of all.
		Fig 3.1
		Map of Southeast Asia **Fig 3.2**
		With reference to Figs 3.1 and 3.2, account for the climatic condition in Hanoi as mentioned in Fig 3.1. [4]
		Award 1 mark per explanation to a maximum of 4 marks. **Possible response includes:**

		• June to September, the northern hemisphere experiences summer and higher temperatures, the southern hemisphere experiences winter and cooler temperatures. [1]

		• In the northern hemisphere, air warms up and rises, forming an area of lower pressure over the central Asia, but in the southern hemisphere, air cools and sinks, forming an area of higher pressure over Australia. [1] • Air thus moves from Australia where there is higher pressure to central Asia where there is lower pressure. When the winds cross into the northern hemisphere, they are deflected to the right, forming the southwest monsoon. [1] • But because there is lower pressure in central Asia, the wind deflects towards central Asia from equator, thus bringing moisture from the South China Sea towards Vietnam, bringing heavy rain to Hanoi, the northern area of Vietnam. [1] **AO 2**
	(c)	Fig 3.3 shows the damages to the environment of a small village in Vietnam due to floods.
		 Fig 3.3

		Using Fig 3.3, explain how vulnerability to climate-related hazards resulted in greater climate risk for the villagers. [4]
		Award 1 mark for each explanation, to a maximum of 4 marks. Award a maximum of one additional mark for each elaboration of pointers. **Possible responses include:** • Poverty – with greater rainfall, floods can result in crop failures and thus reducing the supply of food available. [1] • This then causes food prices to increase and those in poverty will not be able to cope with the sudden hike in prices. [1 additional] • Poverty – with floods, people with poverty may also be less likely to recover from the damages suffered. [1] • They will also not be able to afford any health care services that they may require from injuries or sickness that they may have from the flood. [1 additional] • Lack of access to piped water – floods may also cause contamination of water sources such as wells, this is especially so in rural areas which are not connected to piped water systems and rely on sources such river and wells. [1] • Thus, when struck by floods, they will not have access to clean water, and the consumption of contaminated water can lead to diseases such as cholera. [1 additional] **AO 2**
	(d)	Study Fig 3.4 which shows an advertisement on combating climate change.
		Advertisement to Promote Eating Less Meat to save the Earth **Fig 3.4**
		Using Fig 3.4, justify the message of the advertisement. [2]
		Award 1 mark for each justification to a maximum of 2 marks. **Possible responses include:**

		• One of the big contributors of greenhouse gases are from animal ranching as animals tend to give off large quantity of methane. • Shifting to plant base diet then reduces the agricultural emission of greenhouse gases as the demand for meat lessens, therefore reducing global warming, saving the earth. **AO 2**

Copyright Acknowledgements
Fig 2.1 https://geographyfieldwork.com/ButlerModelSitgesCalafell.htm
Fig 2.2 https://www.precedenceresearch.com/ecotourism-market
Fig 2.3 Adapted from https://www.cbi.eu/market-information/tourism/community-based-tourism/market-potential
Fig 3.1 https://www.bestpricetravel.com/travel-guide/vietnam-rainy-season-1354.html
https://hanoitimes.vn/hanoi-intensifies-measures-to-mitigate-flooding-ahead-of-rainy-season-324490.html
Fig 3.2 https://cdn.britannica.com/90/183790-050-3B1A1E1C/World-Data-Locator-Map-Vietnam.jpg
Fig 3.3 https://bbc.com/news/world-asia-37672862 and
https://vietnamnews.vn/environment/381617/floods-damage-rice-crops-in-mekong-delta.html
Fig 3.4 https://greenwashingindex.com/eating-less-meat-can-save-our-planet/