

Section A

Answer Question 1 and Question 2.

1. Cluster 1: Geography in Everyday Life

- a) Study Fig. 1.1 (Insert), showing Maxwell Food Centre, a hawker centre in a neighbourhood in Singapore.

With reference to Fig. 1.1, describe how residents could develop a sense of place in the neighbourhood.

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[2]

- b) Study Fig. 1.2 (Insert), showing City Square Mall and its vicinity in Singapore.

Using Fig. 1.2, explain how City Square Mall achieves environmental sustainability.

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[2]

- c) A group of students wanted to find out how tourism has impacted the environment of a nature reserve in New Zealand. They surveyed 100 tourists visiting Hooker Valley Track in Mt Cook National Park over a weekend from 8am to 12pm.

the track shown in Fig 1.3 (Insert). Fig

1.4 (Insert) shows the questionnaire.

- i) With reference to Fig. 1.3, suggest possible risks students might encounter while conducting the investigation.

- ii) Evaluate the validity of the students' investigation regarding the environmental impact of tourism on the nature reserve.

2. Cluster 2: Tourism

- a) Using an example, explain how eco-tourism can achieve sustainable tourism.

- d) Study Fig. 1.5 (Insert), showing a bicycle rack along Lake Pukaki in New Zealand.

Using Fig. 1.5, explain how the strategy shown is an example of environmental stewardship to achieve a sustainable neighbourhood.

[Total: 14]

b) Study Fig. 2.1, showing the outbound tourism expenditure of travelers from various countries.

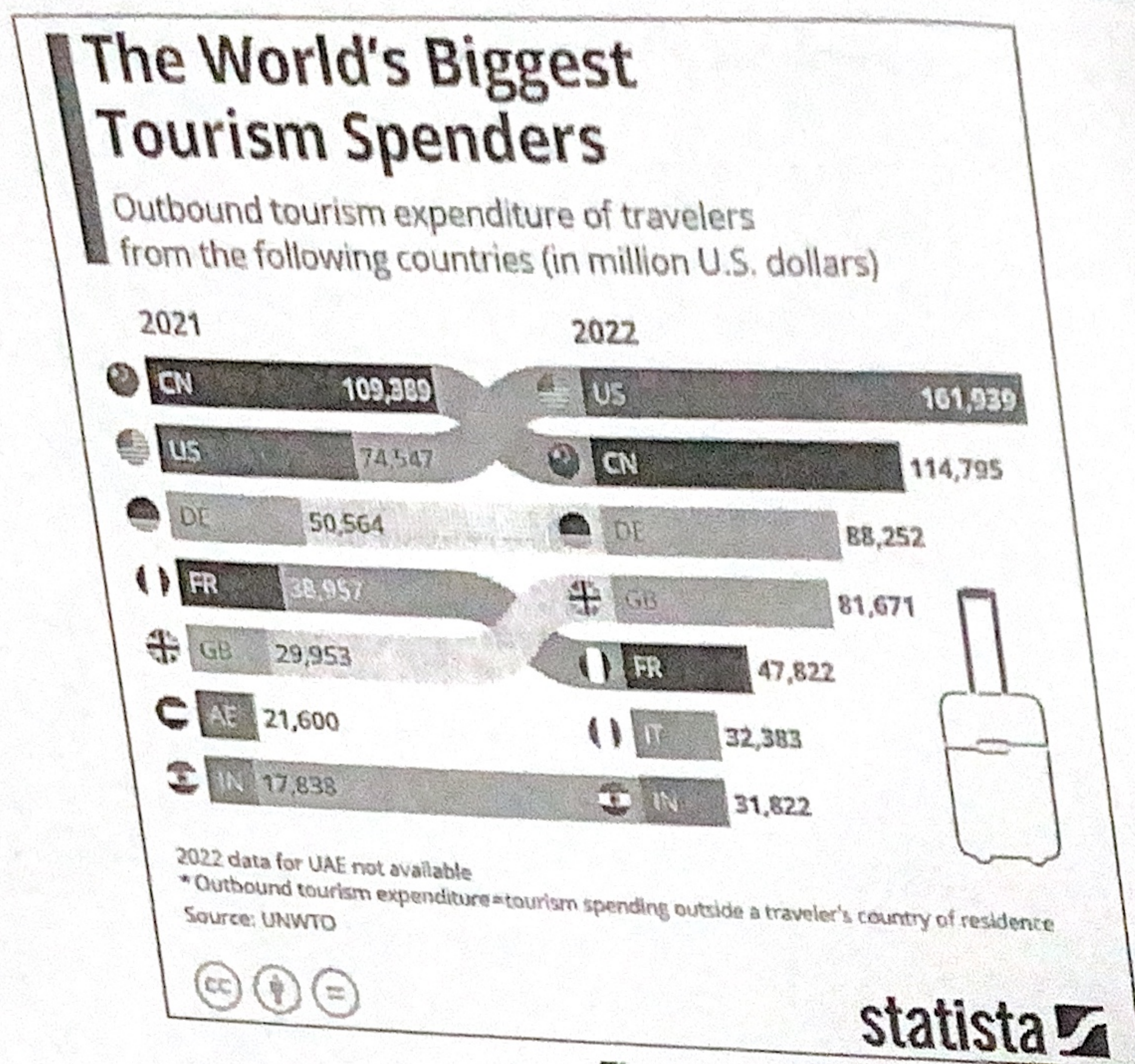


Fig. 2.1

i) Using Fig. 2.1, compare the outbound tourism expenditure between 2021 and 2022.

[3]

ii) Suggest a possible reason for trends mentioned in (b)(i).

c) 'Tourism brings more economic benefits than limitations to the destination countries.'
 To what extent do you agree with this statement? Explain your answer.

[2]

Section B

Answer Question 3 or 4.

3. Cluster 3: Climate

a) Study Fig. 3.1 (Insert), showing the global carbon footprint in 2019.

Using Fig. 3.1, compare the distribution of carbon emissions across the world.

With reference to Fig. 3.2, explain the climate risk Singaporeans are facing.

c) Explain how changes to global ocean circulation caused by climate change affect life below water. [3]

b) Study Fig. 3.2 below, showing an excerpt from an article published by Today Online, an online news website in Singapore.

SINGAPORE — For 34-year-old homemaker Logeswari, who lives with five children in a two-room public rental flat in Bedok, the recent spate of very hot weather has made life harder in several ways: The nausea from her pregnancy feels more unbearable, her utility bills have doubled due to recent purchase of portable air conditioner and her five-year-old son scratches himself throughout the night because of the heat.

As Singaporeans have had to deal with increasingly hot weather on a regular basis, the Ministry of Sustainability and the Environment (MSE) and the National Environment Agency (NEA) launched Singapore's first Heat Stress Advisory last July, to guide the population on how to minimise the risk of heat-related illness.

Fig. 3.2

i) Explain how climate change can lead to flash floods.

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ii) Describe how the locals in urban areas are affected by flash floods.

ii) Describe how the locals in urban areas are affected by flash floods.

e) Explain how changes in consumption patterns can build community resilience to climate change.

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[3]

Section A

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1. Cluster 1: Geography in Everyday Life

Study Fig. 1.1 (Insert), showing how residents could develop a sense of place in the neighbourhood. [2]

- Repeated encounters with objects and people [1]. This helps the residents recall the features of places that they can come across and create meanings and memories of them [1 additional mark]
- Their social interactions with other people at everyday places, enabling them to feel a sense of belonging to their neighbourhoods [1 additional mark]
- Their stalls may result in developing an attachment to these places, enabling them to feel a sense of belonging to their neighbourhoods [1 additional mark]
- Their personal experiences with the built environment [1 additional mark]
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- Their personal experiences with the built environment [1 additional mark]

Study Fig. 1.2 (Insert), showing City Square Mall and its vicinity in Singapore. [2]

- Conserving the natural environment by preserving the existing tree [1]. This helps to protect the flora [1 additional mark]
- Energy-efficient infrastructure such as the Green Roof and Green Wall where it helps to reduce the temperature of the surrounding areas through evapotranspiration of the plants [1]. This reduces the need to use additional resources to cool the areas [1 additional mark]
- In addition, the use of solar panels also reduces the need for fossil fuels [1].
- Promote recycling through environmentally friendly construction materials for the playground and the mall [1].

(Accept plausible answers)

A group of students wanted to find out how tourism has impacted the environment of a nature reserve in New Zealand. They surveyed 100 tourists visiting Hooker Valley Track in Mt Cook National Park over a weekend from 9am to 12pm. The students surveyed the respondents at the entrance of the track shown in Fig 1.3 (Insert). Fig 1.4 (Insert) shows the questionnaire.

i) With reference to Fig. 1.3, suggest possible risks students might encounter while conducting the investigation. [2]

- Accidents may happen as the students are standing near the car park. [1]
- They might fall or experience minor injuries as the pavements are uneven and rocky. [1]

ii) Evaluate the validity of the students' investigation regarding the environmental impact of tourism on the nature reserve. [5]

The investigation is valid as:
The data collected directly addresses the investigation focus on environmental impact of tourism on Hooker Valley Track [1m]. For example, question 2 asks

	respondents to rate the quality of the environment of Hooker Valley Track [additional 1m]. - Sample size is <u>large enough</u> to <u>represent the whole population</u> hence it is <u>reliable</u> [1m]. - The location of collecting the data at the entrance/exit is reliable as it helps to ensure that there isn't any risk of asking the same person twice [1m]. - The questionnaire is also <u>accurate</u> as <u>both open and closed ended questions are present</u> to ensure varied opinions of people are captured [1m]. Open-ended questions enable respondents' personal views are represented while the closed-ended questions are directly related and relevant to the investigation. [additional 1m] The investigation is limited in validity as: - The <u>time is too short</u> for conduct of the survey thus there might be <u>limited data to ensure consistency in findings</u> [1m]. It is only conducted over 1 weekend and over a short period of time (4 hours) [additional 1m]. [Reserve 1m each for valid and limited in validity responses.] [Accept plausible answers]	
d)	Study Fig. 1.5 (Insert), showing a bicycle rack along Lake Pukaki in New Zealand. Using Fig. 1.5, explain how the strategy shown is an example of environmental stewardship to achieve a sustainable neighbourhood. [2] - Environmental stewardship refers to <u>actions taken to protect or responsibly use the environment</u>. [1m] - Mt Cook Alpine Salmon has <u>formed partnership</u> with Alps 2 Ocean Cycle Trail to <u>enhance environmental efforts</u> [1m]. - For instance, by <u>repurposing materials</u> used in their salmon farms to create bicycle racks for the cyclists of Alps 2 Ocean Cycle trail [additional 1m].	AO 2

[Total: 14]

2. Cluster 2: Tourism

a	Using an example, explain how eco-tourism can achieve sustainable tourism. [4] - Ecotourism takes place in natural areas and <u>aims to conserve the natural environment while benefiting the locals</u> [1m]. - One way is to <u>implement measures to minimise the negative impacts</u> on the environment [1m]. - For instance, in Galapagos Islands, authorities only allow a limited number of visitors in the park to minimise disturbances to the wildlife [reserve 1m] - Tourists are also required to <u>pay entrance fees in which the revenue will be used to conserve the park</u> [1m]. - Another way is to <u>educate and increase tourists' appreciation of nature</u>, encouraging them to conserve the environment [1m]. - For instance, a guide, who educates the tourists, is required for those interested in exploring the Galapagos Islands [or reserve 1m] Reserve 1m for example.	AO 1
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b	Study Fig. 2.1, showing the outbound tourism expenditure of travelers from various countries.	
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The World's Biggest Tourism Spenders

Outbound tourism expenditure of travelers from the following countries (in million U.S. dollars)

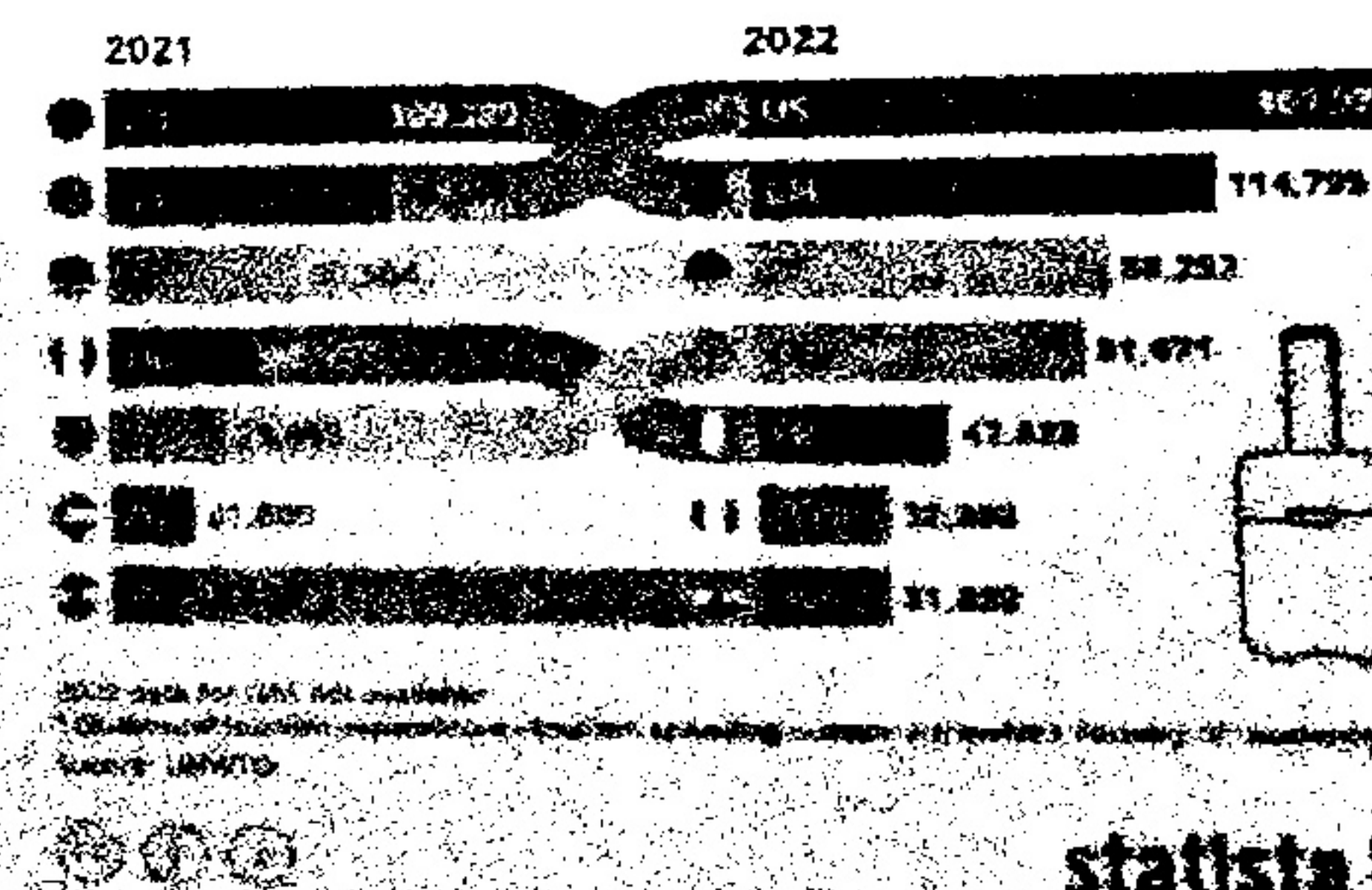


Fig. 2.1

i)	Using Fig. 2.1 compare the outbound tourism expenditure among the countries between 2021 and 2022 [3] [O] Generally, the total outbound tourism expenditure has increased [1m] from USD342,848 million in 2021 to USD556,634 million in 2022 [additional 1m]. [M] The biggest increase in outbound tourism expenditure comes from US [1m] with an increase of USD87,352 million [additional 1m]. [L] China has the least increase in outbound tourism expenditure [1m] of USD5406 million [additional 1m]. [Accept plausible answers including comparison of ranking across the countries]	AO 2
ii)	Suggest a possible reason for trends mentioned in (b)(i). [2] Increasing tourism expenditure is due to the <u>increase in disposable incomes</u> across the countries	AO 1

- Economic development led to an increase in disposable incomes in North America and Western Europe. This has resulted in greater spending on travel.
- Rapidly developing countries like China and India, a fast-growing middle class with increased disposable incomes is causing the rapid rise in tourism expenditure as well.

OR

- Rebound in tourism as the world recovers from COVID-19 pandemic. [1]. USA open its doors to vaccinated travelers in Nov 2021 (additional 1m)

[Accept plausible answers - including country-specific trends.]

AO
3

- c 'Tourism brings more economic benefits than limitations to the destination countries.' To what extent do you agree with this statement? Explain your answer. [9]

Level 1 (0 - 3 marks)

- At this level, answers will be generalized or with minimal support, if any given at all. This is a basic answer with little development. Answers lack examples or studied details.

Level 2 (4 - 6 marks)

- At this level, disagreement OR agreement will be supported by appropriate details.
- Some examples and studied details will be presented at most places to support the answer.
- Good reasoning and logic is demonstrated in most parts of the answer.

OR

- At this level, both disagreement AND agreement are considered, but support is patchy so that the answer is not full (that is, examples and studied details will be presented in at least 1-2 places in the answer).
- Good reasoning and logic is demonstrated in some parts of the answer.

Level 3 (7 - 9 marks)

- At this level, answers will be comprehensive and supported by sound knowledge. Both agreement and disagreement are considered and well-supported by examples and details.
- Good reasoning is demonstrated in most parts of the answer.
- Answer provides some insights into the statement and makes well-reasoned stand on the statement to answer the question.

I agree to a large extent as tourism is viewed as driver of economic growth for many destination countries. While there are notable limitations and challenges associated with tourism, the economic benefits it brings typically outweigh these drawbacks.

One of the economic benefits of tourism is the creation of employment opportunities (P). The tourism industry is inherently labor-intensive, requiring a large workforce to cater to various needs such as accommodation, transportation, and entertainment. This translates to a multitude of job opportunities across different sectors, from direct employment in hotels and restaurants to indirect roles in travel agencies and local attractions (E). In 2019, the tourism industry accounted for 330 million jobs worldwide, representing about 10% of the global workforce. Moreover, between 2015 and 2019, approximately 25% of all new jobs were created by the tourism industry (Ex). These employment opportunities are vital for the economic health of many countries, providing stable income and improving the standard of living for many individuals (L). On a scale of economic impact, employment generation by tourism scores highly due to its widespread and direct benefit to a large segment of the population. The interdependence between tourism and local employment strengthens community ties and supports economic stability, highlighting tourism's significant positive impact on the economy (EV).

Secondly, tourism significantly contributes to higher incomes for local communities and governments (P). Tourist spending on local goods and services boosts local incomes

directly. Furthermore, tourism generates substantial tax revenues for governments, which can be reinvested in public services and infrastructure, thereby enhancing the overall standard of living (E). For instance, tourism contributes 4% to Singapore's GDP, demonstrating its vital role in boosting the national economy. Similarly, in the Maldives, tourism has transformed the country from a low-income nation into a middle-income country with reduced poverty rates (EX). Higher incomes from tourism not only improve the livelihoods of residents but also provide governments with the necessary funds to invest in national development projects (L). The level of impact here is profound as increased incomes from tourism have a ripple effect throughout the economy, benefiting multiple sectors. This high level of economic interdependence underscores the essential role of tourism in achieving sustainable economic growth (EV).

Despite its benefits, tourism also presents economic limitations, such as economic leakages and vulnerability to external factors. Economic leakages occur when revenue generated from tourism does not remain within the local economy but instead flows out to foreign economies. This can happen through the importation of goods and services to meet tourist demands or through profits being repatriated by foreign-owned businesses (E). According to the United Nations Environment Programme (UNEP), for every US\$100 spent by a tourist in a developing country, only US\$5 remains in the local host community (EX). This reduces the net economic benefit of tourism for the host country, limiting the positive impacts on local development (L). This often happens when foreign-owned companies dominate the tourism sector, especially in developing nations where resources and expertise may be limited. This high leakage rate diminishes the overall effectiveness of tourism as a strategy for economic development for the very countries which need tourism for economic growth (EV).

Tourism undoubtedly brings significant economic benefits, including the creation of employment opportunities and higher incomes for local communities and governments. However, these benefits are counterbalanced by limitations such as economic leakages which can significantly reduce the net positive impact on the host economy. While economic leakages are significant concerns, their impact can be mitigated through policies that encourage local ownership such as through community-based tourism (EX). The overall economic benefits of tourism, particularly in job creation and revenue generation, still outweigh these limitations.

Total: 12

Section B

Answer Question 3

3. Cluster 3: Climate

a)	Study Fig 3.1 (Insert) showing the global carbon footprint in 2019. Using Fig 3.1, describe the distribution of carbon emission across the world. [3]	AO2
	Generally, the carbon emissions are unevenly distributed across the world. [1m] The global north such as North America, Europe, Central Asia and Russia has higher than the average world's emission per capita of 6.6 tons as compared to the global south. [additional 1m] (H) North America has the highest emission [1m] of 20.8 tons per capita [additional 1m] (L) Sub-Saharan Africa has the least emission [1m] of 1.6 tons per capita [additional 1m]. NOTE: only one paragraph.	
b)	Study Fig 3.2 below, showing an excerpt from an article published by Today Online, an online news website in Singapore.	
	SINGAPORE — For 34-year-old homemaker Logeswari, who lives with five children in a two-room public rental flat in Bedok, the recent spate of very hot weather has made life harder in several ways. The nausea from her pregnancy feels more unbearable, her utility bills have doubled due to recent purchase of portable air conditioner and her five-year-old son scratches himself throughout the night because of the heat. As Singaporeans have had to deal with increasingly hot weather on a regular basis, the Ministry of Sustainability and the Environment (MSE) and the National Environment Agency (NEA) launched Singapore's first Heat Stress Advisory last July, to guide the population on how to minimise the risk of heat-related illness.	
	Fig 3.2	
	With reference to Fig 3.2, explain the climate risk Singaporeans are facing. [3]	AO2
	Concept: Climate risk = type of hazard + vulnerability + exposure Singapore is facing heatwave due to the rising temperatures/ very hot weather [1m] Singaporeans are generally at risk as they are exposed to higher temperatures given that Singapore is located in the tropical region which experiences equatorial climate. [additional 1m] The low-income Singaporeans are more vulnerable [1m] as they now have to use larger proportion of their income to cover their rising utility bills from using air conditioners to tackle the extreme heat they are facing [additional 1m]. [accept plausible answers]	

	With the higher temperatures, Singaporeans are more vulnerable to heat-related illnesses such as heat stroke when they cannot cool their body down sufficiently.	
c)	Explain how changes to global ocean circulation caused by climate change affect life below water. [3]	AO1
	Due to rising temperatures, water at the surface gains heat and becomes less dense. [1m] Thus, the sinking water at the poles are reduced which slows down the flow of the ocean circulation. [1m] The slowing down of ocean circulation leads to less mixing of water between the surface and sub-surface flows. Thus, less nutrients and food are transported for aquatic life. [1m] As a result, there will be changes to distribution and composition of marine life as they move to other areas to search for food OR the marine life may face local or global extinction as they lose their food sources. [reserve 1m]	
d)	Study Fig 3.3 (Insert) showing a flash flood that happened in Dubai in April 2024.	
	i) Explain how climate change can lead to flash floods. [3] Higher temperature due to climate change increases evaporation rate. [1m] With higher temperature, air capacity to hold water vapour increases, so it can hold more water vapour in the air. [1m] This will result in forming more clouds and heavier water droplets. [1m] causing it to fall as heavy rain over a short period of time. [1m]. Also accept: When rainwater cannot infiltrate into the ground due to lack of vegetation in urban areas, it will lead to higher surface runoff which can cause flooding. [1]	AO1
	ii) Describe how the locals in urban areas are affected by flash floods. [3] Floodwaters cause damages to infrastructures and properties. Homes can be destroyed causing locals to be homeless. Economic losses due to high repair costs of damaged properties. Traffic congestion which can lead to reduced economic productivity; cannot go to work or school. Locals may contract waterborne diseases if the floodwater enters drinking water supplies; they are exposed to stagnant floodwaters. [accept plausible answers]	AO1
e)	Explain how changes in consumption patterns can build community resilience to climate change. [3]	AO1
	Changes in food choices will reduce agricultural carbon emissions such as eating less meat and more vegetables or buying local produce. [1m].	

- Reducing food waste such as avoid overbuying or repurposing food waste will reduce the amount of food entering landfill [1m]. This will reduce the amount of methane that is released from the decomposition of food waste [additional 1m].
- Changes in fashion option will reduce the demand of fast fashion. Hence, this will reduce the amount of water and energy needed to produce the apparels, reducing greenhouse gas emissions [1m]. This can be done such as by purchasing from sustainable or environmentally friendly sources or upcycling old clothing [additional 1m]

Also accept:

- Reducing the use of single-use plastic as more than 90% of plastic today is produced from chemicals sourced from fossil fuels. [1] This generates approximately 400 million tonnes of greenhouse gas emissions per year globally [additional 1m] OR Plastics take a very long time to biodegrade. During its lifespan, it releases toxic gas such as methane, contributing significantly to climate change [additional 1m]. OR Plastics have to either be recycled or incinerated which releases large amounts of greenhouse gases into the atmosphere [additional 1m].

[Total: 18]

Question	AO1	AO2	AO3
1a		2	
1b		2	6
1c i			
1c ii		2	6
1d		8	
Total Q1 [14m]	0		
2a	4	3	
2b i			9
2b ii	2		9
2c		3	
Total Q2 [18m]	6	3	
3a		3	
3b			
3c	3		
3d i	3		
3d ii	3		0
3e	3	6	15
Total Q3 [18m]	12	17	
Total	18		