

Sample Answers for 2026 O Level Core Geography (2279/01)
by ThatGeographyTeacher, Bernice Loon

2279/01/S/O/26

- 1 (a) (i) Suggest the measures that the students could take to ensure the safety of themselves and others as they speak to the shoppers. [3]

- The students should carry out interviews in **pairs or small groups** so that they can look out for one another and seek assistance if they encounter any safety threats. [1]
- They should conduct interviews **away from busy walkways, escalators and entrances** to avoid obstructing other shoppers, which could lead to collisions or falls. [1]
- They should **obtain permission** from shoppers before conducting interviews and **avoid approaching shoppers** who appear uncomfortable or unwilling to participate, reducing the likelihood of conflicts. [1]

- (ii) Describe how the students could use quota sampling to select shoppers for their investigation. [2]

- The students could divide shoppers into categories according to characteristics such as **age group or gender**, and decide on a **predetermined number** of shoppers to interview from each category. [1]
- They could then approach and interview shoppers from each category until the **predetermined quota** is reached, ensuring that **different groups** of shoppers are represented in the investigation. [1]

- (iii) Using Figure 1.4, explain how well this mental map and distance error data represent the reality shown in Figure 1.2. [4]

- The mental map represents reality reasonably well because shopper 4 correctly identified several **major facilities** found in the mall, such as the **amusement park, exhibition area, food outlets** and **public toilets**. [1]
- The **amusement park** is represented accurately, with a distance error of **0 m**, indicating that the shopper could correctly identify its location, possibly because it is a large and distinctive feature within the mall. [1]
- However, some businesses and facilities are represented **less accurately**. For example, ATM has a distance error of **217 m**, while Starbucks has a distance error of **130 m**, showing that the shopper has substantially misjudged their locations. [1]
- Furthermore, the mental map **does not accurately represent the spatial arrangement of all facilities**. For example, the shopper places several businesses in approximate positions and does not reproduce the actual layout of the shopping units shown in Figure 1.2. Hence, the mental map provides only a **partially accurate** representation of the mall. [1]

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- (b) (i) Study Table 1.1 (Insert), which shows data for the number of visits in the last 12 months and the mean of the distance errors in the mental maps, and Figure 1.5, which shows a partially completed graph representing the data calculated in Table 1.1.

Complete the graph on Figure 1.5 by:

- Plotting the data for shoppers 10, 20 and 28.
- Drawing a line of best fit. [3]

Points to plot

Shopper 10 (5, 22)

Shopper 20 (10, 8)

Shopper 28 (15, 9)

- Correctly plot shopper 10 at **5 visits** and a mean distance error of **22 m**. [1]
- Correctly plot shoppers 20 and 28 at (10, 8) and (15, 9) respectively. [1]
- Draw a **downward-sloping line of best fit** through the centre of the scatter of points, with approximately equal numbers of points on either side of the line. [1]

- (ii) Evaluate how well the trend in Figure 1.5 supports the students' hypothesis: [2]
'Shoppers who visit the Mall of Istanbul more often, draw more accurate mental maps'.

- The trend generally supports the hypothesis because there is a **negative relationship** between the number of visits and mean distance error. For example, a shopper who visited once had a mean distance error of **55 m**, while a shopper who visited 20 times had a much lower mean distance error of **8 m**, suggesting that frequent visitors have greater spatial familiarity with the mall. [1]
- However, there are **anomalies**. For example, a shopper who visited 10 times had a mean distance error of **58 m**, whereas another shopper who visited 10 times had an error of only **8 m**. This shows that visiting the mall more frequently does not necessarily result in more accurate mental maps. [1]

- (c) Suggest three open-ended questions which would help the students [3] understand the mental maps, such as the one drawn by shopper 4 in Figure 1.4 (Insert).

- "What **features or landmarks** do you use to remember where different shops and facilities are located in the mall?" [1]
- "Why do you find it **easier to remember** the locations of some businesses or facilities than others?" [1]
- "How does the **frequency of your visits** or the activities you usually carry out in the mall influence the way you remember its layout?" [1]

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- (d) The students collected data on how often some businesses and facilities are labelled by shoppers in their mental maps. They produced a word cloud based on selected data.

Using Figure 1.6 (Insert), suggest reasons for the pattern shown in the word cloud in Figure 1.6. [3]

- The **amusement park** is labelled most frequently, as indicated by its **largest font size**, possibly because it is a **distinctive recreational attraction** which shoppers can easily recognise and remember as a landmark. [1]
- The **exhibition area** and **public toilets** are also labelled frequently, as shown by their relatively large font sizes, because these facilities occupy **prominent or useful locations** within the mall, making them more memorable to shoppers. [1]
- In contrast, facilities such as litter bins, ATMs and lifts are labelled less frequently, as indicated by their **smaller font sizes**, possibly because shoppers pay less attention to smaller or less distinctive facilities when forming mental maps of the mall. [1]

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- 2 (a) (i) Using Figure 2.1, describe the trend of international visitors to Iceland between 1960 and 2022. [3]

- Overall, the number of international visitors to Iceland **increased significantly** from approximately **20,000** visitors in 1960 to about **1.7 million** visitors in 2022. [1]
- The number of international visitors remained relatively low and **increased gradually** between 1960 and 2000, before **increasing rapidly** after 2010, reaching a peak of approximately **2.3 million** visitors in 2018. [1]
- However, there was a **sharp decline** in international visitors from approximately **2 million** in 2019 to **fewer than 500,000** in 2020, before recovering to about **1.7 million** in 2022. [1]

- (ii) With reference to Figure 2.1, suggest reasons for changes in the number of international visitors since 2000. [3]

- The increasing number of international visitors since 2000 could be due to **improved accessibility**, such as the expansion of **international flight connections** and the availability of **low-cost airlines**, making Iceland more convenient and affordable for tourists to visit. [1]
- The rapid increase in visitor numbers after 2010 could also be due to Iceland's growing international popularity as a tourism destination, with its distinctive **natural attractions** such as **glaciers, waterfalls and geothermal landscapes** attracting more international tourists. [1]
- The **sharp decline** in visitor numbers between 2019 and 2020 could be due to the **COVID-19 pandemic**, when **international travel restrictions** and border closures prevented tourists from travelling to Iceland. The subsequent recovery by 2022 could be attributed to the **easing of these restrictions**. [1]

- (b) Study Figure 2.2 (Insert), which shows how local communities perceive the social impacts of tourism in Ethiopia.

‘Tourism only brings about positive social impacts.’

With reference to Figure 2.2, to what extent do you agree with this statement? Explain your answer. [9]

Sample Level Descriptor Answer

Tourism brings about positive social impacts as it can improve **transportation infrastructure** for local communities. Revenue generated from tourism can encourage governments and private investors to develop **roads and transport services** to improve accessibility to tourist attractions. These transport improvements also benefit local residents by allowing them to travel more conveniently to **workplaces, schools and healthcare facilities**, improving their quality of life. For example, Figure 2.2 shows that approximately **46%** of respondents in Ethiopia perceived a moderate improvement in transportation due to tourism, while another **24%** perceived a high level of improvement. This

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suggests that tourism can contribute positively to the well-being of local communities.

However, tourism can also bring about negative social impacts as it may lead to the **destruction of local traditions and history**. Increased interactions between tourists and local residents can encourage the **commercialisation of local culture**, where traditional practices and cultural performances are modified to satisfy tourists' expectations rather than retain their original cultural significance. Over time, this may result in the **loss of cultural authenticity** and weaken the sense of cultural identity among local communities. For example, Figure 2.2 shows that approximately **35%** of respondents in Ethiopia perceived a small impact on the destruction of traditions and history, while another **22%** perceived a moderate impact. This suggests that tourism may threaten the preservation of local cultural heritage.

Furthermore, tourism can lead to an **increase in crimes**, negatively affecting the safety and well-being of local communities. The presence of large numbers of tourists, who may carry valuable belongings and cash, could create opportunities for crimes such as **theft, pickpocketing and scams**. This may cause local residents to feel less safe in their neighbourhoods and reduce their overall quality of life. For example, Figure 2.2 shows that approximately **31%** of respondents in Ethiopia perceived a moderate **increase in crimes** due to tourism, while **18%** perceived a high increase. This indicates that tourism can create social problems for local communities.

Conclusion: I agree only to a **small extent** that tourism brings about only positive social impacts. Although improvements in transportation can enhance residents' accessibility and quality of life, these benefits must be weighed against the potential destruction of cultural heritage and **increase in crimes**. From the perspective of **sustainable tourism development**, tourism should improve the well-being of local communities while preserving their cultural identity and ensuring their safety. Therefore, tourism cannot be regarded as bringing about only positive social impacts, especially when its social costs are not effectively managed.

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- 3 (a) (i) Describe two differences between weather and climate. [2]
- Weather refers to the atmospheric conditions of a place over a **short period**, such as hours or days, whereas climate refers to the average weather conditions of a place over a long period, typically **30 years or more**. [1]
 - Weather can **change rapidly** within a day or between days, whereas climate describes the **longer-term patterns** and variations in atmospheric conditions of a place. [1]
- (ii) Explain how surface types could cause a difference in air temperature. [3]
- Different surface types have different **albedos**. Dark-coloured surfaces such as asphalt have **lower albedos** [1] and **absorb more incoming solar radiation** than light-coloured surfaces, causing them to heat up more quickly and transfer more heat to the surrounding air, resulting in higher air temperatures. [1]
 - Vegetated surfaces tend to have lower surrounding air temperatures because plants release water vapour through **transpiration**, [1] which uses heat energy from the surroundings and produces a **cooling effect**. [1]
 - In contrast, built-up surfaces such as concrete and asphalt have little vegetation and **limited evapotranspiration**, while also **absorbing and storing heat** during the day. [1] They subsequently **release this stored heat** to the surrounding air, contributing to higher air temperatures. [1]
- (b) Explain how the Earth's tilt affects air temperature along the Tropic of Cancer in June. [3]
- The Earth's axis is tilted at approximately **23.5°** from the perpendicular to the plane of its orbit around the Sun. In June, the **Northern Hemisphere is tilted towards the Sun**, causing the Tropic of Cancer to receive **more direct solar radiation**. [1]
 - Around the June solstice, the Sun's rays strike the Tropic of Cancer **almost vertically** at noon, concentrating solar energy over a **smaller surface area**. This increases the intensity of insolation received per unit area, contributing to higher air temperatures. [1]
 - The Northern Hemisphere also experiences **longer daylight hours** in June, allowing the surface to receive solar radiation for a longer duration each day. This increases the amount of heat energy absorbed by the Earth's surface, which subsequently warms the surrounding air. [1]
- (c) Explain how climate change can disrupt marine food webs. [4]
- Climate change causes ocean temperatures to increase, which can lead to **coral bleaching**. [1] When corals experience prolonged heat stress, they expel the **symbiotic algae** living in their tissues, causing the corals to **lose an important source of energy** and potentially die. [1]

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- As coral reefs become degraded, marine organisms such as small fish and invertebrates **lose their habitats and food sources**, causing their populations to decline. [1] This reduces the **availability of prey** for larger predatory fish, disrupting the transfer of energy through the marine food web. [1]
- Climate change also increases the absorption of atmospheric carbon dioxide by oceans, resulting in **ocean acidification**. Increased dissolved carbon dioxide **lowers seawater pH** and reduces the availability of **carbonate ions**, [1] making it more difficult for shell-forming organisms such as molluscs and some plankton to build and maintain their **calcium carbonate shells**. [1]
- Consequently, populations of affected marine organisms may decline, reducing the food available to their predators, such as fish and other marine animals. [1] This can cause population declines at **higher trophic levels** and disrupt the overall structure and stability of marine food webs. [1]

- (d) Study Figure 3.1 (Insert), which shows photographs of a coral reef before and after acidification.

Provide three annotations on Figure 3.2 to describe the effect of acidification on the coral reef shown in Figure 3.1. [3]

Suggested annotations to place on Figure 3.2

Annotation 1 — **Loss of coral cover**

The reef has **fewer living corals**, with large areas of **exposed, degraded coral structures** replacing the formerly extensive coral cover. [1]

Annotation 2 — **Reduced coral diversity and colour**

The reef appears **less colourful**, with **fewer visibly distinct living coral formations** compared with the reef before acidification. [1]

Annotation 3 — **Reduced fish abundance**

Fewer fish are visible above the degraded coral reef compared with the reef before acidification, indicating a possible **reduction in marine life** associated with the corals. [1]