



NAN HUA HIGH SCHOOL
Preliminary Examination 2026

MARK SCHEME

CANDIDATE
NAME

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CENTRE
NUMBER

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CLASS

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INDEX
NUMBER

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GEOGRAPHY

Paper 1

2279/01

26 August 2026

1 hour 45 minutes

Candidates answer on the Question Paper.

Additional materials: Insert

READ THESE INSTRUCTIONS FIRST

Write your name, class, and index number on all the work you hand in.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue, or correction fluid/tape.

Answer **all** questions.

The insert contains additional resources referred to in the questions.

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

The total mark for this paper is **50**.

Answer **all** questions.

1 Cluster 1: Geography in Everyday Life

Cameron Highlands is a popular tourist location in Malaysia known for its cool climate, scenic tea plantations and hiking trails, attracting both local and international tourists all year-round.

A group of students wanted to investigate the profile of tourists that visit this place. They decided to design a close-ended questionnaire to test the hypothesis: 'Younger tourists are more likely to choose longer and more physically demanding trails than older tourists.'

- (a) To collect the data to test their hypothesis, the students decided to choose 3 trails out of 15 trails to collect their data. Fig. 1.1 (Insert) shows the map of Cameron Highlands where the students conducted their investigation. Table 1.1. shows some information on each trail.

Trail	Distance of Trail	Information on Trail	Estimated Time Taken to Hike
1	3.2 km	This trail is a scenic walk uphill and is relatively easy to hike.	1.5 hours
2	5.4 km	This trail moderately challenging at some part of the trails with steep slope.	2.5 hours
3	8.5 km	This trail is challenging as the route is unmarked and best to hike with a guide.	4.5 hours

Table 1.1

- (i) Using Table 1.1, explain why the selection of the three trails are suitable data collection sites. [3]

Award 1 mark for each explanation of why the selection of the three trails are suitable data collection sites.

Award a maximum of 1 additional mark for further development of each explanation, where applicable.

- The three trails are suitable because they provide different distance. Trail 1 is short at 3.2 km, Trail 2 is longer at 5.4 km and Trail 3 is the longest at 8.5 km.
- The trails are also suitable as they provide different levels of challenges. Trail 1 is relatively easy, Trail 2 is moderately challenging and Trail 3 is most challenging.
- This provides a range of trail characteristics, allowing the students to investigate whether age is related to tourists' choice of trail length and difficulty. The trails represent increasing distance and difficulty, allowing for comparison between younger and older tourists for the data collected.

- (ii) With reference to Fig. 1.1 (Insert) and Table 1.1, explain how the students could sample visitors to collect the data needed to test their hypothesis. [5]

Award 1 mark for each explanation of how students could sample visitors to collect data needed to test their hypothesis, to a maximum of 5 marks.

Award a maximum of 1 additional mark for further development of each explanation, where applicable.

Possible responses include:

- Students could divide themselves and stand/situate themselves at all 3 trails as the trails have different distances and levels of physical difficulty, allowing them to collect data from visitors who have chosen trails of different lengths and difficulty levels [1 mark].
- This is suitable as it allows the students to compare the age profile of visitors across the three trails and determine whether younger visitors are more likely to choose longer and more demanding trails [1 additional mark].
- Students could use stratified sampling, based on different age groups, treating the 3 trails as three strata, to ensure that visitors from all three trails are represented in the sample [1 mark]. Or use random sampling.
- For example, students could randomly select 10 visitors from each trail, giving a total sample of 30 visitors, so that the results from the three trails can be compared [1 additional mark].
- Students should collect data at similar times of the day on both weekdays and weekends to ensure that the sample represents visitors at on different days, reducing the influence of variations in visitor profiles [1 mark]

- (iii) Suggest two questions with pre-defined response options which the students could use for their closed-ended questionnaire to test their hypothesis. [3]

Award 1 mark for stating each pair of question and response options, to a maximum of 3 marks.

Accept at least 3 reasonable response option(s) for each questions to collect data relevant to hypothesis, for examples:

1. Which of the following best describes your age group?

- ☐ 15 years and below
- ☐ 16–25 years
- ☐ 26–35 years
- ☐ 36–45 years
- ☐ 46–55 years
- ☐ 56 years and above

2. What was the main factor influencing your choice of this hiking trail?

- ☐ Short distance / shorter hiking time
- ☐ Moderate distance / hiking time
- ☐ Long distance / longer hiking time
- ☐ Low level of physical difficulty
- ☐ Moderate level of physical difficulty
- ☐ High level of physical difficulty

- ☐ Scenic views / attractions
- ☐ Recommendation from others

3. Which level of physical challenge would you prefer when choosing a hiking trail?

- ☐ Very easy – short and gentle trail
- ☐ Easy – relatively short with few steep sections
- ☐ Moderate – longer with some steep sections
- ☐ Challenging – long with steep sections
- ☐ Very challenging – long, steep and physically demanding

4. What is the longest trail you would be willing to hike?

- ☐ Less than 3 km
- ☐ 3–5 km
- ☐ 5–7 km
- ☐ 7–9 km
- ☐ More than 9 km

- (b) As an extension of their investigation, students wanted to investigate another activity that is popular among tourists in Cameron Highlands and the impact of this activity on the environment. They wanted to focus on the impact of pollution by tourists. They decided to count the amount of litter within 200 meters around each of the four teahouses shown in Fig. 1.1 (Insert). They also counted the number of tourists in each teahouse as they go from Teahouse 1 to 4 on the day of investigation, starting at 9am in Teahouse 1 and ending at 3pm in Teahouse 4.

Table 1.2 shows the data they have collected, and the data was represented in a scatter graph shown in Fig. 1.2.

Table 1.2

Information on number of tourists and amount of litter recorded by students

Teahouses	Number of Tourists	Amount of Litter
1 Habu Teahouse	30	25
2 Cameron Valley Teahouse	90	65
3 Bharat Tea Estate/ Teahouse	50	40
4 Sungai Palas BOH Teahouse	120	95

Scattered Graph of Number of Tourists and Amount of Litter

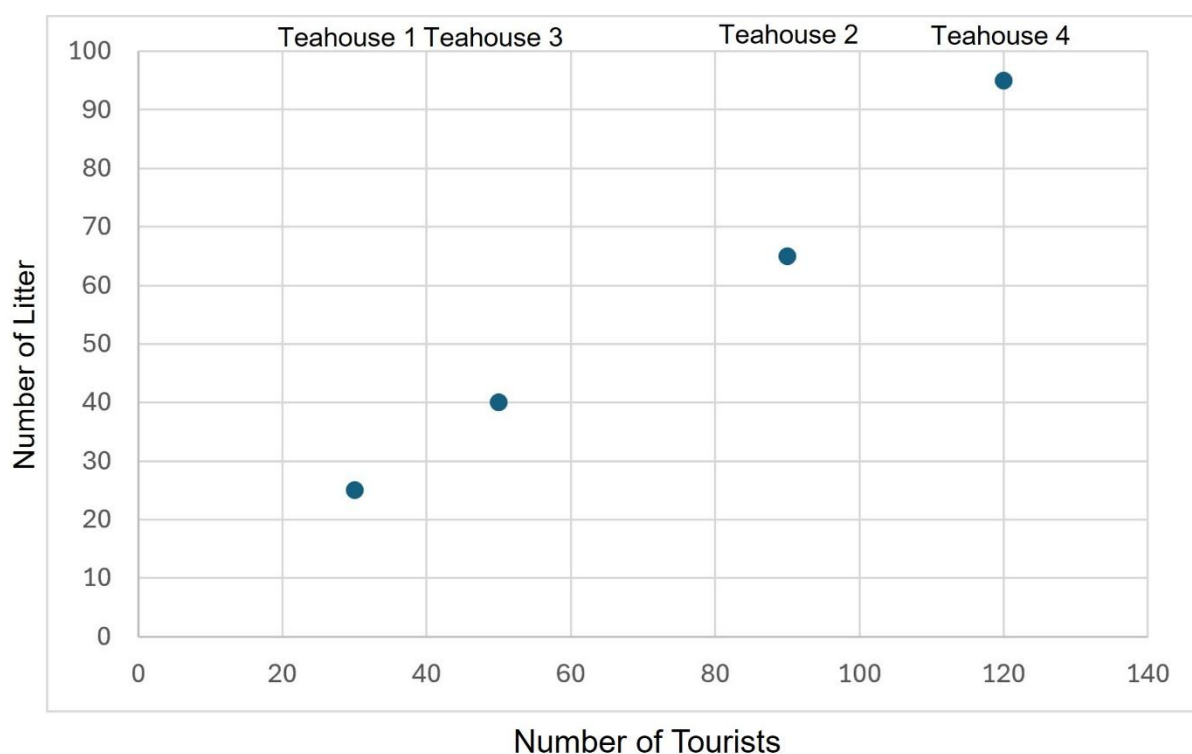


Fig. 1.2

- (i) Complete the graph on Fig. 1.2 by labelling the axes and plotting the data for Teahouse 2. [2]

Award 1 mark for correct labelling the axes

Award 1 mark for correct plotting of data for Teahouse 2.

- (ii) Using Table. 1.2 and Fig. 1.2, suggest a hypothesis that the students may be testing. [1]

Award 1 mark for a well suggested hypothesis showing a positive correlation between the number of tourists at a teahouse and the amount of litter found within 200 m of the teahouse.

- The amount of litter within 200 m of a teahouse increases as the number of tourists increases. or
- The greater the number of tourists at a teahouse, the greater the amount of litter found within 200 m of the teahouse. or
- The greater number of tourists at a teahouse, the higher the pollution.

- (iii) Using Table. 1.2 and Fig. 1.2, explain how well the data supports the hypothesis. [2]

Award 1 mark for each explanation on how the data supports the hypothesis.

- The data supports the hypothesis as there is a positive relationship between the number of tourists and the amount of litter. Generally, as the number of tourists increases, the amount of litter also increases.
- This is shown by the increase from 30 tourists and 25 pieces of litter at Teahouse 1 to 120 tourists and 95 pieces of litter at Teahouse 4. Similarly, Teahouse 2 has 90 tourists and 65 pieces of litter, while Teahouse 3 has 50 tourists and 40 pieces of litter. Thus, teahouses with more tourists generally have more litter, providing evidence to support the hypothesis.
[Accept other evidence/data from the source].

(iv) Evaluate the students' data collection method in studying the impact of pollution.[4]

Award 1 mark for each evaluation on the data collection method, up to a maximum of 4 marks.

Award a maximum of 1 additional mark for further development of each evaluation, where applicable. Evaluation should consider both the strengths and limitations of the data collection method.

- The students counted litter within a standardised 200 m radius around each teahouse, ensuring that the area surveyed was consistent at all four locations and allowing the amount of litter at each teahouse to be compared fairly [1 mark].
- The students collected data from four different teahouses, providing data from different locations and allowing them to identify whether there is a relationship between the number of tourists and amount of litter [1 mark].
- However, the students conducted the investigation only once on one day, so the data may not be representative of tourist numbers and litter levels on other days. For example, tourist numbers may be higher on weekends or during peak tourist periods [1 mark].
- Furthermore, the students counted tourists at different times at each teahouse, from 9 am at Teahouse 1 to 3 pm at Teahouse 4. Differences in tourist numbers may therefore be due to the time of day rather than differences between the teahouses, reducing the reliability of the comparison [1 mark].

[Total: 20]

2 Cluster 2: Tourism

- (a) Study Fig. 2.1 (Insert), which shows a popular tourist location and information on the social impacts of tourism.

With reference to Fig. 2.1 (Insert), how explain tourist activities may bring about negative impacts on the local people.

Award 1 mark for an explanation of how how tourist activities may bring about negative impacts on the local people. Award 1 additional mark for further development of the explanation.

Possible responses include:

- Tourist activities cause congestion and conflict over space, as the large influx of tourists blocks streets while they take photographs of Mount Fuji behind the Lawson convenience store. This makes it more difficult for local residents and businesses to use the streets.
- Tourist activities reduce the quality of life of local people, as tourists leave behind litter and cause irritation in the neighbourhood. This creates an unpleasant environment for residents who live and work in the area.
- Tourist activities may threaten the safety and privacy of local people, as some tourists ignore signs and security guards and climb onto the roofs of neighbouring buildings to take photographs. This may cause damage to private property and safety concerns for residents.

- (b) Describe the motivations for health tourism.

Award 1 mark for a description of what motivates health tourism. Award 1 additional mark for further development of the description.

- Lower cost: Tourists travel to countries where medical treatment is cheaper, allowing them to reduce the cost of expensive procedures such as dental treatment or surgery.
- Better or specialised healthcare: Tourists travel to countries with advanced medical technology, specialised doctors and well-equipped hospitals to receive treatment that may not be available in their home country.
- Shorter waiting time: Tourists travel overseas to avoid long waiting times for medical procedures in their home country and receive treatment more quickly.
- Combining treatment with leisure: Tourists travel to destinations where they can receive medical treatment while enjoying leisure activities, such as sightseeing and staying at resorts during their recovery.
- Tourists travel to destinations where they enjoy retreats and activities such as hot-spring tours, to enhance well-being or overall health.

- (c) Study Fig. 2.2 (Insert), which shows the increase in ecotourism market size from 2025 to 2035, and Fig. 2.3 (Insert), which shows the impacts of ecotourism.

‘Ecotourism is the most effective approach to achieving sustainable tourism development.’

With reference to Figs. 2.2 (Insert) and 2.3 (Insert), to what extent do you agree with this statement? Explain your answer.

I agree to a large extent that ecotourism is the most effective approach to achieving sustainable tourism development. Ecotourism takes place in natural areas which are scenic and allows for tourists to experience nature conserving the environment while bringing social and economic benefits through sustainable practices among many stakeholders. Hence, the effectiveness of ecotourism depends on how well it is planned and managed, as there are limitations to its implementation.

Ecotourism is effective in ensuring **environmental sustainability** as more tourists are educated and have increased knowledge and appreciation of nature, thereby encouraging actions to conserve the environment. Fig. 2.3 shows that nature conservation accounts for 50% of the beneficial impacts of ecotourism, making it the largest benefit. Ecotourism links tourism with environmental protection because tourists are attracted to natural environments, giving stakeholders an incentive to conserve these areas. For example, the Galapagos Islands in Ecuador has 97% of the islands’ total area declared a national park to conserve their unique biodiversity, with only 3% for humans to live on. Authorities implemented some rules and regulations to protect the environment, such as limiting the number of visitors in the park on any given day to minimize disturbance to the wildlife. Tourists are also required to pay an entrance fee of USD100, which fund conservation projects. Therefore, when properly planned and managed, ecotourism can generate tourism revenue while encouraging the conservation of natural environments.

Ecotourism can also contribute effectively to **economic sustainability** through growth in sustainable tourist development. Fig. 2.2 shows that the ecotourism market is projected to increase from USD 283.68 billion in 2025 to USD 1,053.80 billion in 2035. This large increase indicates growing demand for ecotourism and provides opportunities for employment and income generation. Fig. 2.3 shows that 16.7% of the benefits are related to the creation of jobs and additional income, while 14.3% relates to the potential to empower local communities. This can allow local people to participate in tourism and gain economic benefits from protecting their natural environment. Hence, ecotourism can achieve sustainable development by combining economic benefits with environmental protection and community participation.

Furthermore, ecotourism is diverse and can be adapted to different levels of environmental commitment. Hard ecotourism involves a small number of tourists making a high level of environmental commitment, such as specialised nature-based tours. In contrast, soft ecotourism includes nature-based resorts where larger numbers of conventional tourists make a moderate commitment to environmental issues. For example, in South Africa, some national parks provide basic facilities for tourists to camp in the wild, while Kruger National Park provides luxury lodges, swimming pools and extensive road networks. This spectrum allows ecotourism to cater to different groups of tourists while still attempting to incorporate sustainable practices.

However, ecotourism is not always the most effective approach because its ideals may differ from how it is practised in reality. Some destinations may be marketed as ecotourism products even though they do not meet the basic criteria of sustainable tourism development. For example, as the number of tourists visiting natural environments such as the Galapagos Islands increases, tourism can cause environmental degradation. If carrying capacity is not enforced, overcrowding and tourist activities can damage the very natural environment that ecotourism aims to conserve. Therefore, a growth in ecotourism does not automatically result in greater sustainability and there is **uncertainty over the continuity of effects in conserving nature**.

There are also limitations in achieving **local community participation**. Although ecotourism aims to empower local communities, increasing foreign investment and involvement of foreign operators may reduce their participation. Local people may lack the skills required for available tourism jobs and therefore receive fewer benefits. For example in Kufri, India, it was found that economic leakages occur when locals do not have the necessary skills, resulting in jobs going to non-locals. In addition, greater foreign investment can contribute to inflation in the local economy, reducing the benefits received by local communities. There is also a financial trade-off: hard ecotourism involves fewer tourists and may generate smaller overall profits than conventional mass tourism. This may make it difficult to maintain conservation efforts over the long term.

Overall, I agree to a large extent that ecotourism is the most effective approach to achieving sustainable tourism development due to its growth potential. Ecotourism can provide a strong balance between environmental conservation, economic development and community benefits. Ecotourism will be most effective when carrying capacity is enforced, local communities are meaningfully involved and tourism operators maintain their conservation commitments in the long run to ensure sustainable development in tourism efforts.

Level Marks Generic Level Descriptors for 9-mark AO3 Questions

3	7–9	Develops 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. Support points from the information given and able to apply information to the essay. Evaluation is derived from a well-reasoned consideration of the arguments.
2	4–6	Develops arguments that support one side of the discussion well, using one or two points with some elaboration. Example(s) used demonstrate a good understanding of the issue or phenomenon. Some reference to the information given in the essay. 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. Minimum or no reference to the information given in the essay. Evaluation is simple, missing or unclear.
0	0	No creditworthy response.

[Total: 15]

3 Cluster 3: Climate

(a) Study Fig. 3.1, which shows information of two cities.

Location	Eureka, California	Lincoln, Nebraska
Latitude	40.80° N	40.82° N
Distance from the sea	1 km	1,320 km
Highest Mean Temperature	17°C	32°C
Lowest Mean Temperature	5°C	-10°C

Fig. 3.1

(i) State the annual temperature range for the cities of Eureka and Lincoln.[2]

Award 1 mark for each correct annual temperature range given.

- Eureka, California: $17^{\circ}\text{C} - 5^{\circ}\text{C} = 12^{\circ}\text{C}$
- Lincoln, Nebraska: $32^{\circ}\text{C} - (-10^{\circ}\text{C}) = 42^{\circ}\text{C}$

(ii) With reference to Fig. 3.1, account for the difference in temperature range experienced in Eureka and Lincoln.[4]

- Eureka experiences a Maritime effect: Being located only 1 km from the sea, Eureka's temperature is strongly regulated by the ocean. Water heats up and cools down more slowly than land.
- In summer, the sea keeps Eureka cool in winter, it retains heat and warms the air, resulting in a small annual temperature range
- Lincoln experiences a Continental effect: Located deep inland at 1,320 km from the sea, Lincoln is unaffected by the regulating influence of the ocean. Land surfaces heat up rapidly in summer, causing a high average temperature and lose heat rapidly in winter, causing temperatures to drop severely.
- Consequently, Lincoln experiences a much larger annual temperature range due to its continental location, whereas Eureka experiences a much narrower and milder temperature range due to coastal moderation.

(b) Study Fig. 3.3 (Insert), which shows the projection of climate impacts on crop yields in Thailand.

Using Fig. 3.3 (Insert), describe the economic impacts of reduction in crop yields due to climate change. [3]

Award 1 mark for one description of economic impacts of crop yields using the Fig. Additional 1 mark for development of the point.

- Reduced income from crop production – Climate change can reduce crop productivity, causing farmers to produce and sell fewer crops, leading to lower income.
- Durian has the highest projected revenue loss of -2,697,929,000 Thai Baht, with productivity projected to fall by 49.36%.
- Large financial losses across different crops – Climate-induced reductions in crop yields can result in substantial financial losses for Thailand's agricultural sector.
- Sugarcane is projected to lose -2,209,014,000 Thai Baht, while maize is projected to lose -1,850,799,000 Thai Baht.
- Severe productivity decline can cause major economic losses – Some crops may experience very large declines in productivity, reducing the amount available for sale and affecting farmers' earnings. Para rubber has the largest projected productivity decline of -125.64%, resulting in a financial loss of -1,123,283,000 Thai Baht.

(c) Study Fig. 3.2, which shows the formation of sea breeze.

Annotate Fig. 3.2 to explain how a sea breeze is formed. [4]

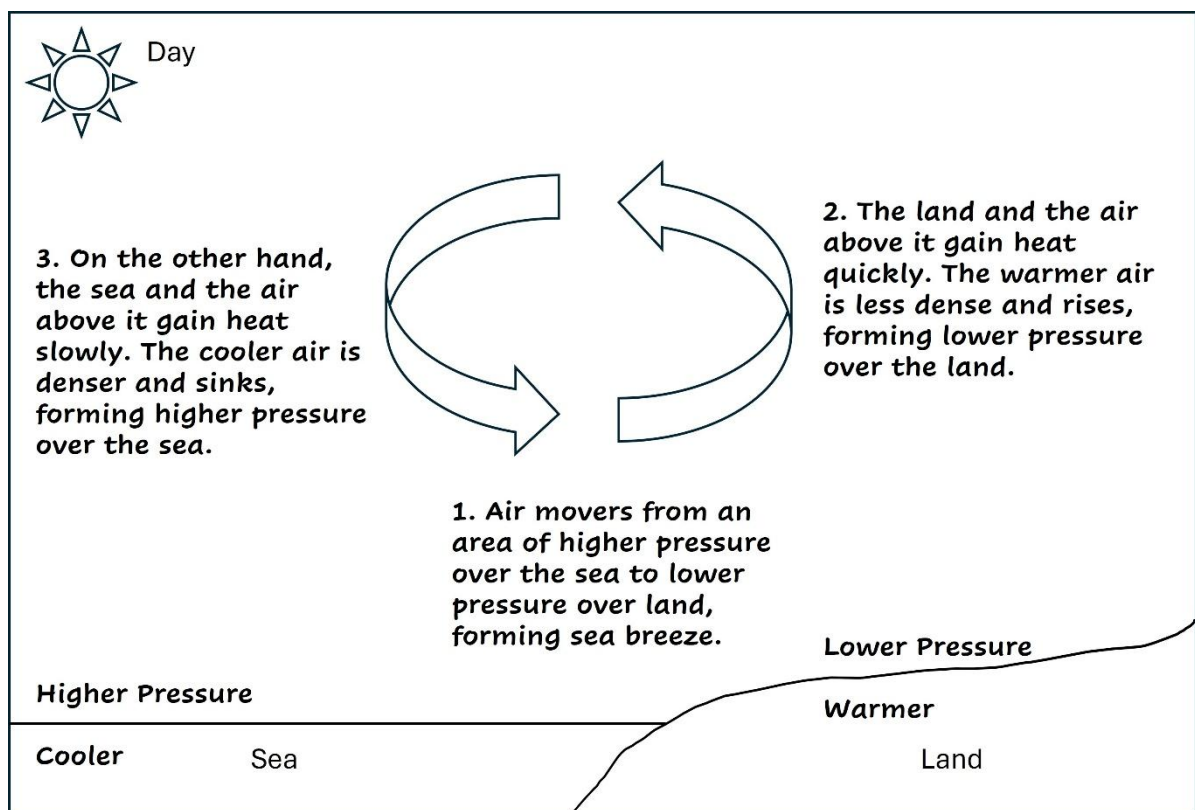


Fig. 3.2

Award 1 mark for one annotated explanation in the formation of a sea breeze, up to a maximum of 3 marks.

Award 1 mark for annotation of 'higher pressure/lower pressure' or 'cooler/warmer'.

- (d) Study Fig. 3.4 (Insert), which shows the use of low carbon technologies such as Carbon Capture, Utilisation and Storage (CCUS).

With reference to Fig. 3.4 (Insert), evaluate the use of low carbon technologies in reducing greenhouse gases emissions. [2]

Award 1 mark for each evaluation on the use of low carbon technologies in reducing greenhouse gases emissions.

- Low-carbon technologies such as CCUS are used to capture CO₂ emissions from power stations and factories before they are released into the atmosphere. The CO₂ is then reused or stored underground, reducing the amount of greenhouse gases entering the atmosphere.
- However, CCUS can be expensive and energy-intensive, making it difficult to implement on a large scale.

[Total: 15]

Copyright Acknowledgements:

Question 1 Fig. 1.1	https://hitchhikershandbook.wordpress.com/2012/06/08/our-first-lift/cameron-highlands-map/
Question 2 Fig. 2.1	https://snowbrains.com/japans-battle-against-overtourism/
Question 2 Fig. 2.2	https://market.us/report/ecotourism-market/
Question 2 Fig. 2.3	https://forevervacation.com/the-vacationer/the-impact-of-ecotourism-on-traditional-villages-in-southeast-asia
Question 3 Fig. 3.3	https://www.undp.org/thailand/stories/how-does-climate-change-impact-agriculture
Question 3 Fig. 3.4	https://www.linkedin.com/pulse/harnessing-power-carbon-capture-utilization-storage-ccus-ali-haratian/