# 3E END OF YEAR EXAMINATION 2023

# ANSWER SCHEME

**Answer Question 1**

**Cluster 1: Geography in Everyday Life**

| | | | |
|---|---|---|---|
| **1** | | **A group of students from Mayflower Secondary School investigated the experience of visitors at the Gallop Extension in the Singapore Botanic Gardens. The Gallop Extension is an eight hectare area with many features which aim to bring nature closer to visitors while educating them on Singapore's forest ecosystems and conservation efforts.**<br><br>**The students designed a closed-ended questionnaire to test the hypothesis: 'Knowledge about the features of the Gallop Extension increases as the length of visit to that part of the Gardens increases'.**<br><br>**Study Fig. 1.1, which shows the map of the Gallop Extension in the Singapore Botanic Gardens.** | |

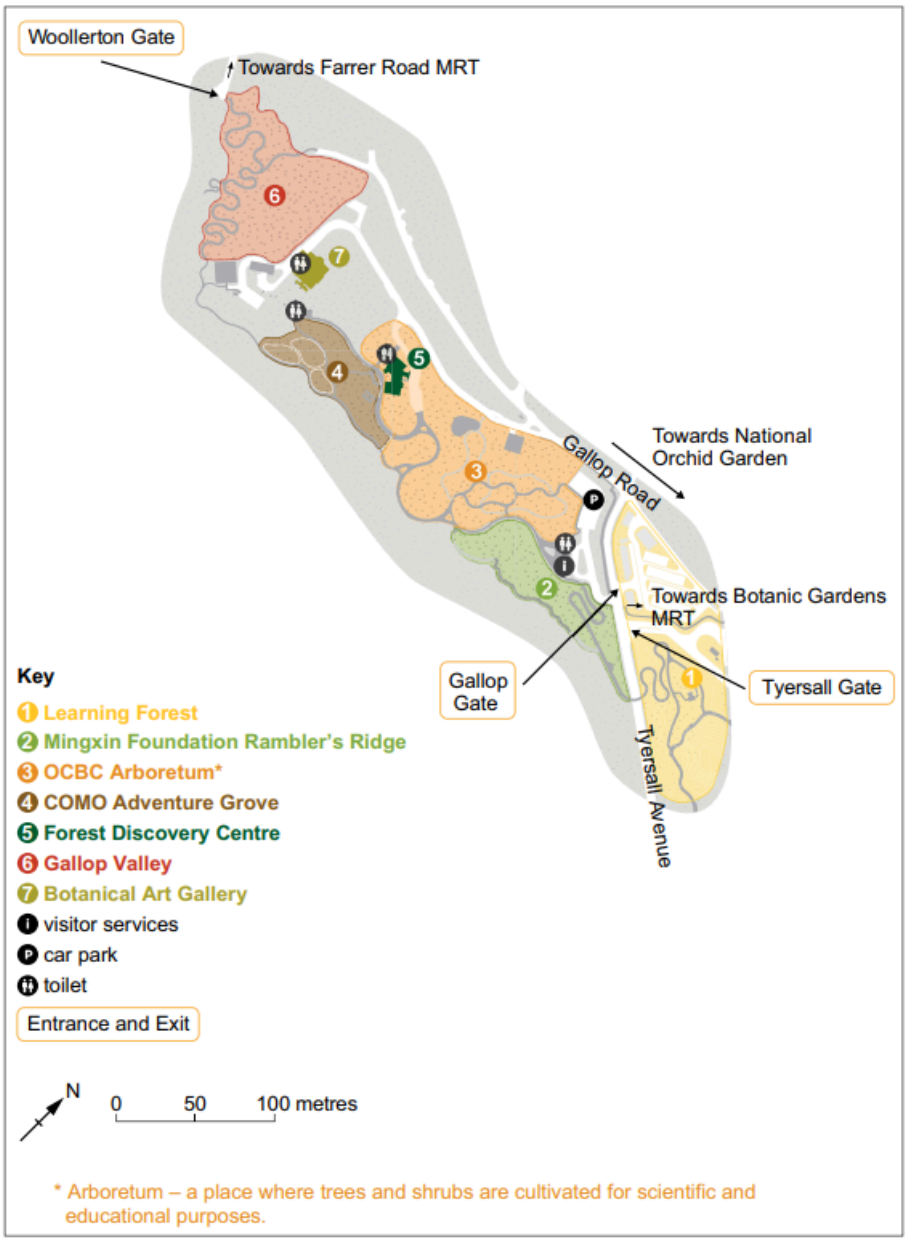


**Fig. 1.1**

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| | **(a)** | **Suggest a suitable guiding question for their investigation.**<br><br>Possible answers:<br>**Knowledge about the features of the Gallop Extension increases as the length of visit to that part of the Gardens increases'.**<br><br>Does the knowledge about the features of he Gallop Extension change as the length of visit to that part of the Gardens increases?<br><br>How does the length of visit to the Gallop Extension affect the knowledge of it?<br><br>AO2 | **[1]** |

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| | **(b)** | **The students decided to craft a questionnaire based on their hypothesis in (a). With reference to Fig 1.1, state <u>two</u> possible closed-ended questions and their response options which the students could use for their questionnaire.**<br>Award 1m for stating each pair of question and response options, to a maximum of 2m.<br><br>Possible responses include:<br>- Question: How long did you spend at the Gallop Extension? Options: a) Less than 1 hour, b) Between 1 and 2 hours, c) More than 2 hours<br>- Question: How many features did you visit at the Gallop Extension? Options: 1,2,3,4,5,6,7<br>- Question: How many times have you visited the Gallop Extension? Options: a) Once b) first time c)2-3 times c) more than thrice<br><br>AO2 | **[2]** |
| | **(c)** | **Using information from Fig. 1.1, suggest how the survey can be carried out to collect the data.** | **[3]** |
| | | Award 1m for the suggestion of the suitable sampling method and 2m for the description of how it is carried out. Description **<u>must</u>** include information on where the sampling method is carried out.<br><br>Possible responses can include:<br>● Students can use a simple random sampling method as it will help to remove the bias that could stem from selection of visitors. [1]<br>● This could be done at either of the entrances of Singapore Botanic Gardens where people enter and exit by so as to approach visitors easily.[1]<br>● This can be done by using a random number table in the selection of visitors at a specific time at the gate [1]<br><br>AO2 | |
| | **(d)** | **Study Fig. 1.2 which provides descriptions of the different features of the Gallop Extension in Singapore Botanic Gardens.** | |

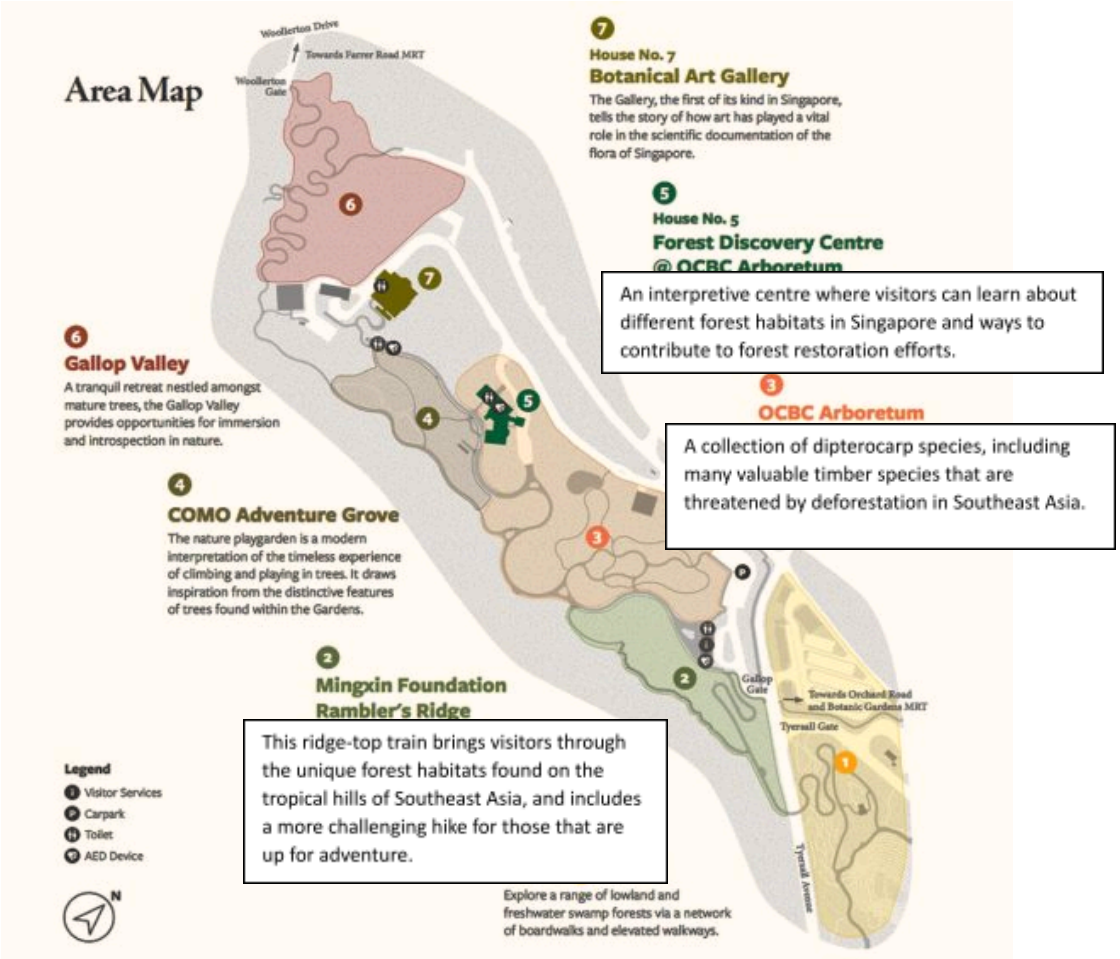


**Fig. 1.2**

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| | **(e)** | **With reference to Fig. 1.2, describe two ways that visitors might increase their awareness about nature areas from the various features found in the Gallop Extension.**<br><br>1. From the forest discovery centre [1], they might be able to increase their awareness about nature areas through learning about the different forest habitats in SG and ways to contribute to forest reforestation[1]<br>**2.** Mingxin Foundation Rambler's Ridge [1]helps visitors increase their awareness about nature through showing the unique forest habitats found on the tropical hills of SEA.[1]<br><br>**Award 1m for identification of feature and 1m for each description on how it helps to increase awareness of nature areas.**<br><br>**AO1** | **[4]** |
| | | **Study Fig. 1.3, which shows the Forest Restoration Action Plan in Singapore**. | |

**Forest Restoration Action Plan**

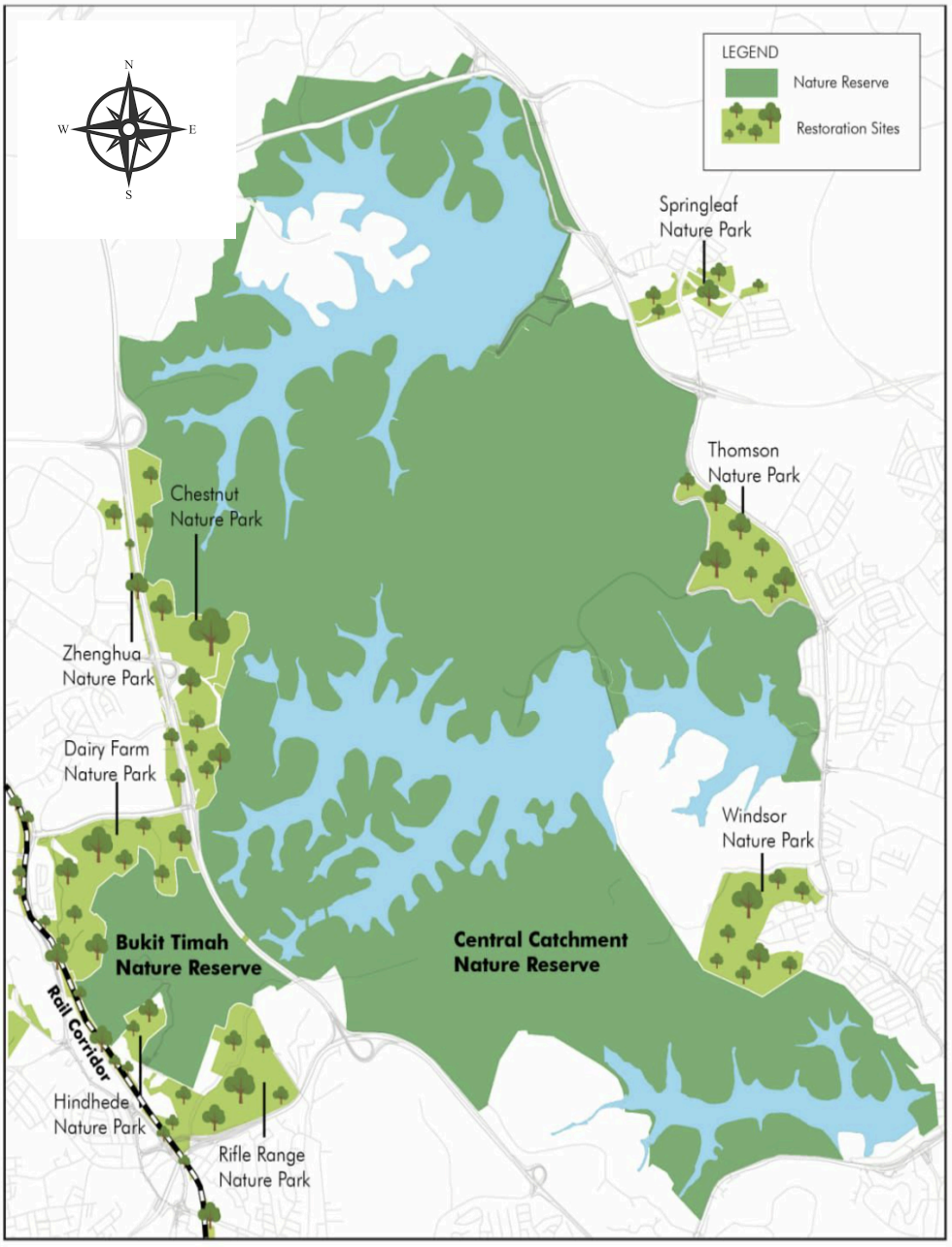


**Fig. 1.3**

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| | **(f)** | **Using information from Fig. 2, describe the distribution of the Forest Restoration sites in Singapore.**<br><br>**print colour** | **[4]** |
| | | • The restoration sites are all mainly at the fringe/ edges of the nature reserves (1m)<br>• Almost the entire Bukit Timah Nature Reserve has plans for its adjacent land to be restored such as Dairy Farm, Hindhede and Rifle Range Nature Park (1m) | |

| | | | |
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| | | • There are no plans for restoration sites in the northern or southern part of the Central Catchment Nature Reserve (1m)<br>• Springleaf Nature Park is located in the northwest and is far away from the other restoration sites (1m)<br>AO2 | |
| | **(g)** | **With reference to studies that you have made, explain one way nature areas might be disadvantaged by local communities.**<br><br>1. Soil erosion and damaging vegetation.<br>- When people hike along non-designated trails in nature areas, this might cause soil compaction which prevents rainwater from infiltrating the surface.<br>- This could lead to higher surface flows and soil erosion as the flowing water washes away the soil particles.<br>- Humans might trample on the vegetation, damaging the plants and affecting their growth.<br>- For example, in 2014, human activites led to severe soil erosion and habitat degradation in Bukit Timah Nature Reserve which resulted in the limiting of public access to the nature reserve for 2 years.<br><br>2. Worsening pollution and disturbing wildlife<br>- Littering can worsen pollution in natural areas<br>- Animals can get cut by metal cans or become entangled with plastic containers and bags/ Some animals might mistake litter for food and consume them, causing the animals to get hurt and suffer, which might lead to death.<br>- Feeding wildlife might also alter their eating habits and behaviours and human-wildlife conflict can increase when animals associate food with people.<br>- For example, in Singapore, the law prohibits the feeding of any wild animals and anyone caught intentionally feeding wildlife will be fined $5000 on the first offence.<br><br>Award 1m for each point, for a maximum of 4m<br><br>AO1 | **[4]** |
| | **(h)** | **Photograph A shows a cooking class for senior citizens taking place in a void deck in Singapore.** | |

| | | | |
|---|---|---|---|
| | |  <br>**Photograph A** | |
| | | **Explain how the above activity in Photograph A might help to enhance the senior citizen's sense of place.**<br><br>● As seen in Photograph A, senior citizens are gathered at a HDB void deck participating in the cooking activity,[1] creating fond/positive memories of this place, resulting in a stronger sense of place. [1]<br>● As the residents positively interact with one another preparing meals together, residents associate the HDB void deck as an inclusive/familiar place for people to gather and participate in activities together. [1]<br><br>AO1 | **[3]** |

| | | | |
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| | **(i)** | **Describe how life expectancy rate is an indicator of development.**<br><br>As the country gets more developed, it will have more advanced medical technology, which will lead to a higher life expectancy rate.<br><br>**AO1** | **[1]** |
| | **(j)** | **Describe the differences between a precinct and town.**<br><br>Precincts and Towns differ in terms of size [1]. Precincts are made up of between 400 to 800 residential units while towns comprise a few precincts of about 4000 to 6000 residents. [1]<br><br>They also differ in terms of facilities[1]. Towns have a variety of facilities including road networks and shops and schools whereas precincts might have smaller facilities like playgrounds to cater to the neighbourhood[1].<br>**AO1** | **[4]** |
| | **(k)** | **Explain how the public warning system in Singapore helps to reduce the risk of disasters.**<br><br>The public warning system is a network of sirens placed at strategic points throughout Singapore.[1]<br>It helps to warn the public of imminent threats that may endanger lives and property.[1]<br>Hence during threats like natural and man-made disasters, the siren will warn residents[1] where to go for safety so that they will be able to reduce the number of casualties or deaths.[1]<br>**AO1** | **[4]** |

**Answer Question 2**

**2 Climate**

| | | | |
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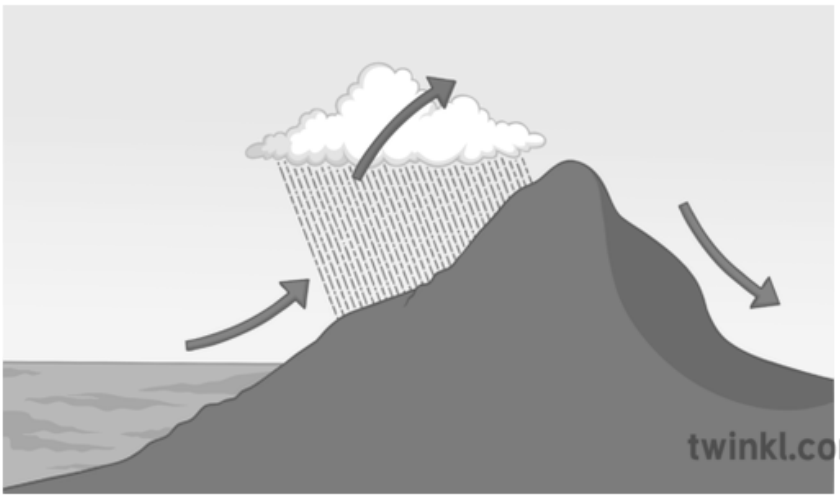
| **2** | **(a)** | **(i) On the diagram below, annotate the formation of relief rainfall.**<br><br>  <br><br><br>1. Prevailing winds pick up moisture over the sea, and push the moist air up the windward side of a mountain.<br>2. Rising moist air cools and condenses on condensation nuclei at dew point temperature. Clouds are formed.<br>3. Water droplets in the clouds collide and coalesce, and when they become large and heavy enough, they fall to the ground as rain on the windward side.<br>4. As most of the moisture has fallen on the windward side, the leeward side experiences dry descending air and is thus dry.<br><br>AO2<br>Accurate Annotations – 4m | **[4]** |
| | | **(ii) Describe one difference between relief and convectional rainfall.**<br><br>**EITHER**<br>They are different in terms of the duration of the rainfall [1]. Relief rainfall can lasts up to days whereas convectional rainfall lasts for short periods of time (about half an hour).[1]<br><br>**OR**<br><br>They are different in terms of formation[1]. Relief rainfall is caused by prevailing winds bringing moisture over the sea but convectional rainfall is caused by heat from the sun leading to evaporation taking place.[1]<br>AO1 | **[2]** |

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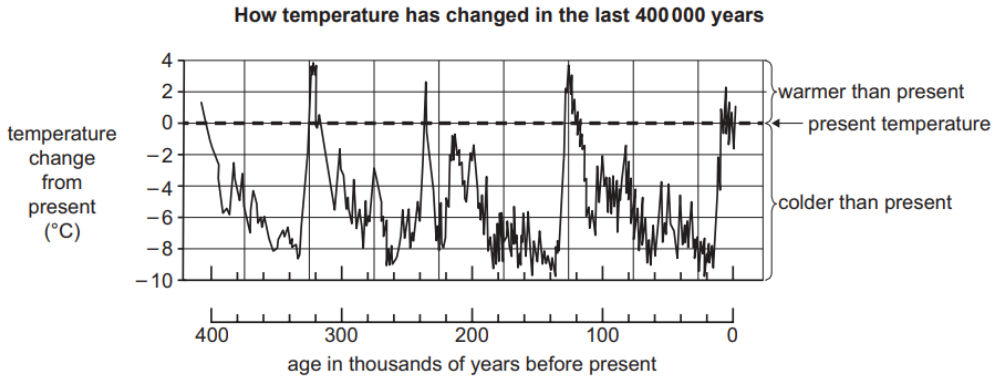
| | | **Study Fig. 2 which shows how temperature has changed in the last 400,000 years.**<br><br>  <br><br><br>**Fig. 2** | |
| | **(b)** | **Using Fig. 2, describe how temperature has changed in the last 400,000 years.**<br><br>Award 1 mark for each description of how temperature has changed in the last 400,000 years, to a maximum of **4** marks.<br>Award a maximum of 1 additional mark for further development of each description, where applicable.<br><br>Possible responses include:<br>● Temperatures fluctuate with cycles of warming and cooling about the present temperature [1]. There are four occasions when temperatures are warmer than the present temperature [1m]<br>● Temperatures have been colder for longer periods than the present temperature [1]. For example, temperatures have been colder for about 100,000 years before the present day. [1]<br><br>AO2 | **[4]** |
| | **(c)** | With the use of an example, explain how deforestation can lead to climate change.<br><br>Award 4m for deforestation well explained with the use of a specific example. Otherwise max award 3m.<br>● Deforestation is the large-scale removal of forests due to the need for resources or land.<br>● This will result in an increased level of carbon dioxide because it reduces the number of trees that absorb carbon dioxide through photosynthesis. | **[4]** |

<table>
<tr><td></td><td></td><td>
<ul>
<li>Clearing of trees also exposes the soil beneath to sunlight, which increases soil temperature and the rate of carbon oxidation.</li>
<li>Globally, tropical deforestation contributes to 20% of annual greenhouse gas emissions.</li>
</ul>
AO1
</td><td></td></tr>
<tr><td></td><td>(d)</td><td>
“Threats to flora and fauna is the most severe natural impact of climate change.”<br><br>
How far do you agree with this statement? Support your answer using examples.
<table>
<tr><td colspan="3">Generic level descriptors for 6-mark evaluative sub-part assessing AO3</td></tr>
<tr><td>Level</td><td>Marks</td><td>Descriptors</td></tr>
<tr><td>3</td><td>5-6</td><td>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. Evaluation is well-supported by arguments.</td></tr>
<tr><td>2</td><td>3-4</td><td>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. Evaluation is partially supported by arguments.</td></tr>
<tr><td>1</td><td>1-2</td><td>Arguments are unclear with limited description of 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.</td></tr>
<tr><td>0</td><td>0</td><td>No creditworthy response.</td></tr>
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</td><td>[6]</td></tr>
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Table of specifications

| Question | AO1 | AO2 | AO3 | |
|---|---|---|---|---|
| 1 a | | 1 | | |
| 1b | | 2 | | |
| 1c | | 3 | | |
| 1d | 4 | | | |
| 1e | 4 | | | |
| 1f | | 4 | | |
| 1g | 4 | | | |
| 1h | 1 | | | |
| 1i<br>1j | 1<br>4 | | | |
| 1k | 4 | | | |
| 2a i | | 4 | | |
| 2 a ii | | 2 | | |
| 2b | | 4 | | |
| 2c | 4 | | | |
| 2d | | | 6 | |
| | 24 | 20 | 6 | |

"Extreme weather change is the most severe natural impact of climate change."

How far do you agree with this statement? Support your answer using examples.

| **Given Factor** | **Human Factors (Deforestation, Changing Land Use – Agriculture / Industries / Urbanization)** | | |
|---|---|---|---|
| **Alternative Factors** | Variation in Solar Output | | |
| | **Knowledge/Support/Development** | **Reasoning** | **Structure/Organization** |
| Level 1<br>(0-3 marks) | ● At this level answers will be generalized or with minimal detail on volcanic eruption. | ● Little emphasis may be on the degree of contribution to climate change. | ● No introduction<br>● No paragraph.<br>● No conclusion |
| Level 2<br>(4-6 marks) | ● At this level answers will contain some appropriate detail.<br>Or<br>● The content will lack balance but some relevant detail.<br>● Example given must be specific, geographical and appropriate detail to support the argument be it in agreement or disagreement with the statement. | ● Agreement or disagreement with the statement is made but general in nature.<br><br>🎬 Agreed or disagree with this statement and showed why.<br><br>● To evaluate the degree of contribution from the alternative factor<br>● Comment on only one factor [max L2/5 with very detailed explanation, geographical evidence and appropriate evaluation] | ● Paragraphs are seen.<br>● One paragraph will be used to agree or disagree with the given statement.<br>● Another paragraph to be used to consider an alternative factor. |
| Level 3<br>(7-8 marks) | ● L2 +<br>● At this level answers will be comprehensive and supported by sound knowledge.<br>● Consideration of **<u>both</u>** factors with detailed explanation and geographical examples. | ● Critical evaluation on the degree of contribution by both factors with appropriate evaluative criteria | ● L2 +<br>● Must come to a conclusion/make a stand. |

Teacher's Comment:

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## TOS – Sec 3 EXP

| Assessment objectives | AO1 + 2 | AO1 + 3 |
|---|---|---|
| **Section A** | | |
| 1a | | 4 |
| 1b | 2 | |
| 1c | | 1 |
| 1d | | 4 |
| 1e | 2 | |
| Total | **4** | **9** |
| **Section B** | | |
| 2a | | 1 |
| 2b | 3 | |
| 2c | 8 | |
| Total | **11** | **1** |
| **Section C** | | |
| 3a | 3 | |
| 3b | | 4 |
| 3c | | 5 |
| 3d | | 5 |
| 3e | 8 | |
| Total | **11** | **14** |
| **Grand total** | **26** | **24** |

**AO1: Knowledge**

• demonstrate relevant factual knowledge – geographical facts, concepts, processes, interactions and trends

• demonstrate knowledge of relevant fieldwork techniques – identification of geographical questions, sequence of fieldwork inquiry, primary and secondary data collection methods

**AO2: Critical Understanding and Constructing Explanation**

• select, organise and apply concepts, terms and facts learnt

• make judgements, recommendations and decisions

• evaluate data collection methods and suggest improvements

**AO3: Interpreting and Evaluating Geographical Data**

• comprehend and extract relevant information from geographical data (numerical, diagrammatic, pictorial
and graphical forms)

• use and apply geographical knowledge and understanding to interpret geographical data – recognise patterns in geographical data and deduce relationships

– compare and contrast different views
– present geographical data in an appropriate form and an effective manner
– draw conclusions based on a reasoned consideration of evidence

• evaluate the validity and limitations of fieldwork evidence and of the conclusions reached