

TANJONG KATONG SECONDARY SCHOOL End of Year Examination 2023

End of Year Examination 20 Secondary 3

CANDIDATE NAME			
CLASS		INDEX NUMBER	
GEOGRAPHY			2279
		5 O	ctober 2023
Candidates answ	wer on the Question Paper.	1 hour	45 minutes

Additional Materials: Insert

MARKING SCHEME

Answer **all** questions.

1	Clust	ter 1: Geography in Everyday Life				
	(a)	A class of students from a Singapore school wanted to test the hypothesis:				
	(a)	A class of students from a olingapore school wanted to test the hypothesis.				
		'When Singaporeans have good knowledge of global warming, they are more willing to take action to combat global warming.'				
		To do this, they decided to devise a close-ended questionnaire. The draft questionnaire after one round of class discussion is shown in Fig. 1 (Insert).				
	(i)	The students thought that further changes can be made to improve the questionnaire.				
		Using Fig. 1, identify the issues with some of the questions and suggest improvement to them. [4]				
		 Q1 on where students live is irrelevant to the hypothesis. Not about knowledge of global warming or willingness to combat global warming. Hence should be removed from the questionnaire or replace with another question that would check how much knowledge know about global warming. [additional mark] Q5: Insufficient response options being provided for the action that people can take. Only 3 provided Provide more options and include an open-ended option on 'others' so that 				
		 people can indicate in writing what other action that they would take [additional mark] Q4 is about actions that can be taken by the country but the hypothesis is about actions that can be taken by Singaporeans Change question to be actions that can be taken by Singaporeans Q4: Students may not understand some of the terms like 'mitigate' and 'adapt' 				
		 so they give inaccurate responses Include a brief explanation of the terms in the questionnaire [additional mark] 				
	(ii)	Describe a suitable graph they could use to show the data collected using Question 2 from the questionnaire in Fig. 1 (Insert 1).[3]				
		 Pie chart Create a legend for the 4 responses Indicate the percentage OR Bar graph x-axis is the level of response y-axis is the number of people 				
	(iii)	The students decided to conduct the interview in Orchard Road, a popular shopping district in Singapore.				
		Explain how the students could sample visitors to collect the data needed to test the hypothesis. [4]				
		Conduct systematic/simple random sampling to select the respondents to remove				

	 bias. Stand at places with high human traffic such as MRT station so that they can get more respondents. Organise themselves into groups to conduct the interview at different places so that they can carry out and complete the questionnaire during the same time period Decide on a large enough sample size of at least 30 to 100 so that it will be more representative of the views of Singaporeans Award marks for any of the points above.
(b)	From 2021 to 2022, there has been increased disaster management efforts to educate Singaporeans on how to prevent fire hazards. The students wanted to test the hypothesis, 'Increased education efforts from 2021 to 2022 will reduce the occurrences of fire hazards in Singapore during that period'. They obtained data from the news release of Singapore Civil Defence Force (SCDF) to aid their investigation.
	Study Figs. 2 and 3 (Insert 1), which show the breakdown of fires in non-residential areas and top two types of fires in residential buildings.
(i)	Using Fig. 2, compare the occurrences of fire between 2021 and 2022 in non- residential buildings. [4]
	 Similarity Fire occurrences has increased between 2021 to 2022 for all the premises Difference Higher increase for commercial and industrial premises 4.2% for commercial premises and 6.9% for industrial premises [additional mark] Lower increase of 1.4.% for social and communal premises [not to double award 'lower', award for evidence]
	 Hypothesis is not true Increase of fires for all non-residential buildings from 1.4% to 6.9% (award maximum of 1 mark since the answer was written in (i) Large increase in fires caused by electrical by 18.8% [additional mark] However, one set of data support the hypothesis. Reduction in fires caused by unattended cooking By 4.2% [additional mark]
 	 Reduction in fires caused by unattended cooking By 4.2% [additional mark] Award a maximum of 3 marks to each set of answer on whether support or do no support the hypothesis.

2	Clus	ter 1: Geography in Everyday Life
	(a)	Study Fig. 4 (Insert), which shows the percentage of e-commerce sales in Singapore in 2015 and the projected percentage in 2025.
		 With reference to Fig. 4, suggest why the number of services in a town centre may change over time. [3] The number of services being offered may decline. Due to lower demand as many people turn to buy what they need through online platforms. Should there be an increase in population, more services especially those offering essential services such as food will increase to cater to the increase in demand.
	(b)	Study Fig. 5 (Insert), which shows the distribution of dengue outbreak in Singapore in 2020. Fig. 6 (Insert), shows the distribution of town councils in Singapore.
		Using Figs. 5 and 6, describe the distribution of dengue outbreak in Singapore in 2020. [4]
		 Mainly found/spread over a large area in the eastern part of Singapore. In districts such as Ang Mo Kio, Aljunied, Marine Parade [additional mark] Smaller area of spread in the northern and western part of Singapore Examples of districts are Tengah, Jurong West in the western part of Singapore and Sembawang and Woodlands in the northern part of Singapore [additional mark]
	(c)	Study Fig. 7 (Insert), which shows a part of the coral reef found at the Great Barrier Reef, Australia.
		With reference to Fig. 7, explain how the coral reefs may provide ecosystemservices for the locals.[4]
		 Offer cultural services. Presence of corals can support tourism. Tourists can do many activities such as scuba diving and snorkeling. Generate income for the locals who are involved in the tourism industry as guides. [ATQ] Corals are colourful and beautiful and provide opportunities for aesthetic appreciation and for stress relieving activities for locals as well. These activities may improve people's physical and mental health and foster a sense of group identity as Australians who live near the Great Barrier Reef, thus strengthening the locals' sense of place. Offer supporting services because healthy coral reefs provide: Habitat, feeding, spawning, and nursery grounds Local fisherman will benefit from healthy fish supplies and depend on it for food.

 (d) Explain how individuals and organisations can work together to promote environmental stewardship of their neighbourhood. (a) Environmental stewardship refers to actions taken by individuals and groups to protect and use the environment responsibly e.g. parks and waste recycling. [optional] Organisations can create awareness on the importance of using the neighbourhood responsibly through education such as public campaigns. NParks promotes volunteerism in communities through ground-up initiatives such as Friends of the Parks. [1 additional mark] Participants may gain greater community ownership and stewardship of parks in their neighbourhoods. [1 additional mark] Public agencies like the National Environment Agency can engage residents or the importance of waste recycling as well as how and what they should recycle 		
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provide recycling facilities.		 Environmental stewardship refers to actions taken by individuals and groups to protect and use the environment responsibly e.g. parks and waste recycling. [optional] Organisations can create awareness on the importance of using the neighbourhood responsibly through education such as public campaigns. NParks promotes volunteerism in communities through ground-up initiatives such as Friends of the Parks. [1 additional mark] Participants may gain greater community ownership and stewardship of parks in their neighbourhoods. [1 additional mark] Public agencies like the National Environment Agency can engage residents on the importance of waste recycling as well as how and what they should recycle. Individuals play their part to recycle properly while private organisations can provide recycling facilities.
Award at least 1 mark for answer on individuals and organisations		Award at least 1 mark for answer on individuals and organisations

 (a) Study Fig. 8 (Insert), which shows the distribution of areas experiencing a particula type of climate. Using Fig. 8, describe the temperature that would be experienced in these areas.[2 High temperature throughout the year about 27°C Low annual temperature range of about 2 °C to 3 °C (b) Study Fig. 9, which shows the temperature over the land and sea in a coastal area at midday. 	ister 3: Climate					
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210						
land	land					
Sea	sea					
	ļ					
Fig. 9						
Eveloin why a brazza may blow in the area above in Fig. 0	41					
Explain why a breeze may blow in the area shown in Fig. 9.	۰J					
 I his is a coastal location where sea breeze is formed during the day. 						
• During the day, land heats up more quickly than the sea.	• During the day, land heats up more quickly than the sea.					
OR sea neats up/gains neat slower than the land						
• As a result, land has higher temperature (35° C) and lower pressure than						
Sea 27° (Π).						
As all moves from an area of high pressure to an area of low pressure, it forms see breeze that blows from see to the lend during middey.						
ionns sea preeze that plows from sea to the land during midday.						

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	(c)	'The main human activity which has contributed to the enhanced greenhouse effect is agriculture.'	
		To what extent do you consider the statement to be true?	
		Give evidence to support your answer.	[9]
		Question issue: Human activities which contribute to the enhanced greenhouse effect	
		Introduction There are many human activities which has contributed to the enhanced greenhouse effect. Enhanced greenhouse effect is a process where an increased amount of greenhouse gases resulting from human activities lead to more heat trapped. I agree/disagree that agriculture is the main human activity which has contributed to it. [If you had disagreed] Instead, urbanisation is the main human activity that contributed to the greenhouse effect.	
		 Agriculture Point: Forests are cleared to make space for agriculture in order to meet the rising demands for food. Elaboration: Live stock like cows and sheep as well as the natural decomposition processes release methane, a greenhouse gas. Powering the machinery also involves the he burning of fossil fuels that also release 	
		 greenhouse gases. While fertilisers used in farming also release greenhouse gases. Example : Furthermore, such activities related to agriculture contributes to around 30% of greenhouse gas emissions globally. Link: Thus agriculture removes the sources of greenhouse gas removal and releases more greenhouse gases into the atmosphere, contributes to enhanced greenhouse effect. 	
		 Urbanisation Point: Urbanisation will contribute to the enhanced greenhouse effect. Elaborate: When a city gets more urbanised and more people live in them, this means that more services and resources will need to be provided such as electricity, housing, transport systems, food etc. With new provision of goods and services, more fossil fuels may need to be burnt to meet the needs of the cities. Transportation systems also run on fossil fuel. Burning of fossil fuels result in more carbon emission. Example: Number of people living in urban spaces is expected to continue, with the urban population more than doubling its current size by 2050, at which point nearly 7 of 10 people will live in cities. Cities consume about 78% of the world's energy and contribute significantly to the emission of greenhouse gases. Link: Hence, cities that are mainly powered by fossil fuels is a main contributor to the enhanced greenhouse effect. 	
		Industrialisation Point: Increase in industrial activity leads to the enhanced greenhouse effect. Elaborate: Fossil fuels are burned to generate energy to run the machinery and other factory processes. this causes more greenhouse gasses to be released in the earths atmosphere which trap head near the earths surface causing temperature to increase.	

Example: it is estimated that industries contribute about 43% of greenhouse gasses annually. Link: This shows that as the industrial activity increases, global temperature increases through a warming influence
Deforestation Point: Changing landuse for agriculture, industries and urbanisation may involve
large scale deforestation which contributes to the enhanced greenhouse effect. Elaboration: Deforestation results in increased levels of carbon dioxide because it reduces the number of trees that absorb carbon dioxide though photosynthesis. During photosynthesis, trees store carbon, thus when trees are cut down or burned, the stored carbon is released back into the atmosphere. Example: Globally tropical deforestation contributes to about 20% of annual greenhouse gas emissions.
Link: Hence, deforestation is a major contributor to the enhanced greenhouse effect.
Conclusion:
In conclusion, agriculture is not the main activity which has led to the enhanced
greenhouse effect. It contributes about 30% of greenhouse gases emission
annually. Urbanisation results in higher greenhouse gas emission as cities
consume the large majority of the world's energy.
In fact, the high demand for food also comes from cities.

	Generic Level Descriptors for <u>9 mark</u> sub-part assessing AO3				
Level	Marks	Descriptors			
3	7-9	Develops arguments that support both side 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 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) demonstrate a good understanding of the issue or phenomenon. 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.			
0	0	No creditworthy response.			

Assessment Specification Grid AO1: Knowledge with Understanding AO2: Skills and Analysis

AO3: Judgement and Decision-Making

Question	Max Mark	Question Part	A01	AO2	AO3
1	20	(a)(i)		4	
		(a)(ii)		3	

2272/02/Sec4Prelims/2023

		(a)(iii)		4	
		(b)(i)		4	
		(b)(ii)			5
		Total		15	5
2	15	(a)	3		
		(b)		4	
		(C)	4		
		(d)	4		
		Total	11	4	0
3	15	(a)		2	
		(b)	4		9
		Total	4	2	9

AO of paper is aligned to the weighting as stipulated in the syllabus

- AO1: 15m
- AO2: 14 + 4 + 2 = 20m
- AO3: 6 + 9 = 15m