

PRESBYTERIAN HIGH SCHOOL 2023 END-OF-YEAR EXAMINATION SECONDARY THREE EXPRESS HUMANITIES (GEOGRAPHY) (2260/2)

Name: _____ ()

Duration: 1 hour 45 minutes

Class: Sec 3 _____

Date: 6 October 2023



Setter: Ms Michelle Tang Vetter: Mdm Filzah

This marking scheme consists of <u>14</u> printed pages (including this cover page) and <u>0</u> blank pages.

Answer Question 1

1 Geography in Everyday Life

(a) Study Fig. 1.1 (Insert), which shows a poster of some animals that commonly cross the Eco-Link@BKE, an ecological bridge that spans the Bukit Timah Expressway. The bridge connects Bukit Timah Nature Reserve to the Central Catchment Nature Reserve.



Fig. 1.1

With reference to Fig. 1.1, explain how this bridge will mutually benefit [4] people and wildlife.

Possible responses include:

- The presence of this bridge provides more shelter and habitat for urban wildlife to thrive. [1] This enhances the overall well-being of the wildlife, enhancing their biodiversity. [1]
- The presence of this bridge allows people to travel to and from work/home/school across the nature reserves instead of around the reserves. [1] This enhances the overall accessibility of transport, reducing time taken to travel to their destination. [1]

Award 1m for each explanation of how people and nature affect each other, to a maximum of 2 marks.

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

(b) Study Fig. 1.2 (Insert), showing a dragon playground in Toa Payoh, Singapore.



Fig. 1.2

With reference to Fig. 1.2, describe how residents acquire a sense of place in this neighbourhood. [2]

Possible responses include:

- Many residents in this neighbourhood have <u>vivid memories</u> of this landmark as they have <u>spent most of their childhood</u> playing with friends here.
- Many residents may have <u>repeated encounters</u> with this landmark as they pass by it <u>along their journey</u> to and from work/school/home.
- Due to their <u>unique/symbolic design</u>, many people associate this with Singapore's <u>culture and national identity</u>.

Award 1m for each description of how people acquire a sense of place through either repeated encounters and/or significant events. Accept other plausible responses.

Not accepted: students grow up playing with friends and parents befriend other parents. Same idea of memories

(c) Study Fig. 1.3, which shows an extract about a social enterprise, Edible Garden City, in Singapore.



Fig. 1.3

With reference to Fig. 1.3, describe how Edible Garden City is a form of **[3]** environmental stewardship.

- Volunteers/participants gain <u>greater ownership</u> of food production in Singapore.
- It encourages participants to <u>share with others their knowledge and</u> <u>skills</u> about the food sustainability/harvesting vegetables.
- It raises <u>public awareness</u> on food production in Singapore.
- It encourages the residents to <u>contribute to the development and</u> <u>management</u> of our green spaces.
- It encourages citizens to play a <u>more active role</u> in promoting active and responsible food consumption / reduce food wastage.

No marks awarded for lifting

A handful mentioned about enhanced greenhouse effect and global warming.

(d) Study Fig. 1.4 (Insert), which shows a poster of an Emergency Preparedness Day in Macpherson organized by the People's Association in Singapore.



Fig. 1.4

With reference to Fig. 1.4, explain how community resilience is developed [3] through an Emergency Preparedness Day.

- When they volunteer/participate in such an event, neighbors'/residents' relationships are developed/strengthened so that they can depend on one another during an actual emergency.
- Being involved in such events would garner widespread support and awareness of potential hazards for residents to resist, adapt and recover timely and effectively.
- When residents actively participate in such events, they can better understand the risks and adaptations options to communicate to the planners and government.
- Organising such an event reinforces the idea to all residents that community resilience is an all-round response and everyone has a part to play, individually and collectively.
- Develops residents' ability to organize themselves during a crisis.

Award 1 mark for each explanation on how community resilience is developed, to a maximum of 3 marks.

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

Can accept descriptions and explanations of examples such as Community First Responders.

(e) A group of Singapore students was investigating the popularity of neighbourhood parks in Singapore. As part of their investigation, they decided to find out how frequently visitors visit Bishan-Ang Mo Kio Park.

They decided to interview 20 visitors using a questionnaire survey on a Sunday evening. Study Fig. 1.5 (Insert), which shows the site where the students collected their data.



Fig. 1.5

- (i) Suggest a suitable closed-ended question for their questionnaire [1] survey.
 - How often do you visit Bishan-Ang Mo Kio Park? -
 - Not at all
 - o 1-2 times
 - o 3-5 times
 - o 6-7 times

Their question should include options/responses. Om if no options are included.

(ii) Identify the type of data collected in (e)(i). Primary data / quantitative data

-

[1]

7

- (iii) The students used a dice to select the respondents for the questionnaire survey. Identify this sampling method. [1]
 - Simple random sampling or stratified random sampling. [1]
- (iv) State an advantage of the sampling method identified in (e)(iii). [1] Possible response:
 - By using a dice, it reduces the probability of biasness [1]
 - It accounts for any patterns within the population / it removes bias. [1]

Any 1, 1m

(v) With reference to Fig. 1.5, describe the potential risks in this fieldwork.

Possible responses:

- There may be risks of collisions with cyclists/PMD riders along the bridge when they are approaching their respondents. [1]
- Falls, cuts, minor injuries may occur if students trip over the pebbles/jiggered rocks/stones/uneven surfaces. [1]
- In the event of wet weather, the river may inundate the sides causing students to be overwhelmed. [1]

Any 2, 1m each

Accept any logical response.

Quite a few did not understand the meaning of RISKS. Responses mentioned were not risk-related. E.g. people may not want to answer the survey.

- (vi) Suggest measures that can be implemented to mitigate the risks [2] mentioned in (e)(v).
 - Students are to avoid collecting data on the bridge or in the path of cyclists. [1]
 - Students are to wear proper footwear and clothing/take note of potential hazards and stay clear. [1]
 - Students are to move away during wet weather and go to an area with shelter and far from the river. [1]

Any 2, 1m each.

Accept any logical response.

Due to the previous question, the same students were not able to come up with suggestions to minimize the risks.

[Total: 20]

[2]

Answer Question 2

2 Climate



Study Fig. 2.1, which shows a climograph for Kolkata, India.

Fig. 2.1

- (a) (i) Using Fig. 2.1, describe the climate of Kolkata, India.
 - Kolkata has a high <u>mean annual temperature</u> of around 26 degrees Celsius.

[4]

- Kolkata has a large temperature range of 10 degrees Celsius.
- Kolkata has a <u>distinct wet season</u> (Jun-Sept more than 250mm rainfall) and a <u>dry season</u> (Nov-Feb less than 25mm rainfall).
- Kolkata has a high total annual rainfall of around 2000mm.

Max 3m with no supporting data. Reserve 2m for temperature, 2m for rainfall.

- (ii) Explain Kolkata's rainfall pattern from June to September.
 - In summer, the <u>air over Central Asia is warm, creating an</u> area of low pressure.
 - In winter, the <u>air over Australia is cold, creating an area of high pressure</u>.
 - Air moves from <u>Australia (high pressure) to Central Asia (low pressure)</u> as monsoon winds.
 - When the monsoon winds blow <u>across the Indian Ocean</u>, they <u>picks up moisture</u>, bringing heavy rain to India (Kolkata).
- (b) Annotate Fig. 2.2 to explain how relief rain is formed.

[5]

[4]

4. Water droplets in the clouds <u>collide and</u> <u>coalesce</u> and when they become large and heavy enough, they <u>fall to the ground as rain</u> <u>on the windward side</u> .	
 3. The rising air cools and <u>condenses</u> <u>at dew point temperature</u>. Clouds are formed. 2. The moist air is <u>forced to rise</u> the windward side of a mountain. 1. <u>Prevailing winds</u> pick up moisture over the sea. 	5. As most of the moisture has fallen on the windward side, the <u>leeward side</u> <u>experiences dry air and no</u> <u>rain occurs here</u> .
sea	



Max 1m for labelling of windward side, leeward side and prevailing wind correctly.

Processes number 1 to 5, 1m each.

(c) Study Fig. 2.3 (Insert), which shows the changes in the average global temperature and atmospheric carbon dioxide concentration from 1880 to 2014.



Using Fig. 2.3, describe the general changes in the average global [4] temperature and atmospheric carbon dioxide concentration from 1880 to 2014.

Supported description [2m, 1m for temp and 1m for CO2]:

- The carbon dioxide concentration increased steadily from 290ppm to 315ppm from 1880 to 1960 and it increased more rapidly from 315ppm to 400ppm from 1960 to 2014.
- From 1950 to 2014, temperatures have been increasing with fluctuations from 13.9 to 14.7 degrees Celsius.

Anomalies [1m]:

- From 1880 to 1920, temperatures have been fluctuating between 13.9 degrees Celsius and 13.5 degrees Celsius.
- Between 1938 to 1942, there was a sharp increase with fluctuations in temperature from 13.8 to almost 14.2 degrees Celsius.

Award 3m for supported description (year and statistics). Award 1m for any anomaly. Max 2m for unsupported description.

Award 0m for no units/wrong units.

- (ii) Suggest one anthropogenic factor that has led to the general change [1] in carbon dioxide concentration.
 - Changing land use/deforestation for agriculture and urbanization that has cleared trees, reducing the number of trees for CO2 absorption.
 - Fossil fuels are burned to generate energy, releasing more CO2/greenhouse gases.

Accept any logical descriptions that show an increase in CO2.

(d) Study Fig. 2.4, which shows how wind directions in a coastal area change between day and night.



Fig. 2.4

(i) Identify the types of winds in A and B.A: Sea breezeB: Land breeze

[1]

1m for both correct answers. If either is wrong, 0m.

- (ii) Outline the reasons for the changes in wind direction between day [2] and night as shown in Fig. 2.4. Thermal capacity [1m]:
 - It is due to the rate at which land and sea heats up and cools down. OR
 - Land heats up and cools down faster than sea. OR Sea takes a longer time to heat up and cool down compared to land.

Differences in air pressure [1m]:

- As a result of differences in temperatures, a pressure gradient is formed that differs between day and night, affecting wind direction. OR
- As a result of differences in temperatures, both land and sea will experience either a higher or lower air pressure that differs between day and night, affecting the wind direction.
- (e) 'Latitude is a more significant factor than altitude in causing air [9] temperature variations across Earth's surface.'

To what extent do you agree with this statement? Explain your answer. <u>Relevant content</u>

Factors affecting air temperature across places

Latitude

Altitude

A possible approach:

The answer could first highlight the geographical concept of space and how the effect of latitude affecting temperature across places. Thus, different places across Earth's surface experience higher or lower temperatures depending on their distance away from the equator. The response should include key terms like angle of incidence, solar radiation, earth's curved surface etc.

The answer could also consider the geographical concept of place and how altitude affects temperature within the same place.

The answers should make references to relevant examples to illustrate their argument.

After considering both latitude and altitude, the answer should conclude that latitude affects temperature on a global scale while altitude affects temperature on a local scale. Due to the differences in scale, latitude is more significant.

At the global scale, temperatures are lower at high latitudes. Due to Earth's spherical shape, the angle at which the sun's rays strike Earth's surface varies at different parts of the Earth. The higher the latitude, the smaller the solar angle, therefore solar radiation is less direct, is spread over a larger area and is less concentrated, leading to lower temperatures compared to low latitude areas. For example, in Beijing, China (40°N of the Equator) has temperatures averaging 12°C while Singapore (1°N of the Equator) has temperatures averaging 29°C.

At a local scale, temperatures are lower at higher altitude. At higher altitudes, air is less dense and air pressure is lower as gravity pulls most of the air molecules towards the ground surface. With fewer air molecules, air has a lower ability to absorb and radiate heat, leading to lower temperatures. For example, temperatures at Genting Highlands (altitude of 1700m above sea level) is about 21°C. While temperatures in the surrounding areas which are at sea level is 32°C.

Alternatively, students can also consider the importance of the interplay of factors in causing variations in temperatures across different places on earth.

<u>Level 0 (0 marks)</u>

No creditworthy response.

Level 1 (1-3 marks)

- 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.
- Evaluation is simple, missing or unclear.

Level 2 (4-6 marks)

- 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 well-supported by arguments.

Level 3 (7-9 marks)

- 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 derived from a well-reasoned consideration of the arguments.

[Total: 30]

END OF PAPER