



ANGLICAN HIGH SCHOOL
PRELIMINARY EXAMINATION
SECONDARY 4 2022

S4

HUMANITIES (GEOGRAPHY)

2272/02

Paper 2

26 August 2022

1 hour 40 minutes

ANSWERS

This document consists of **26** printed pages

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Section A

Question 1: Tourism Fieldwork

A group of students in Singapore investigated Sentosa as a global tourist destination. They interviewed 135 visitors. Two of the questions they asked visitors were which country visitors had travelled from and their length of stay in Singapore. Fig. 1 shows the results of this part of the survey. Fig. 2 is a world map to show the location of the countries shown in Fig.1.

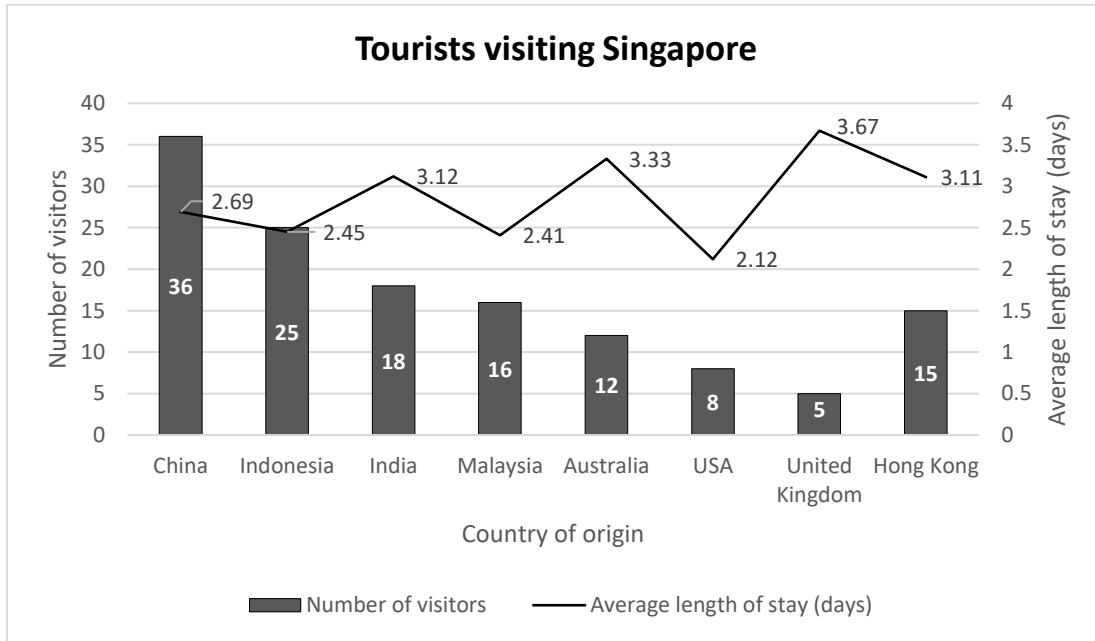


Fig. 1

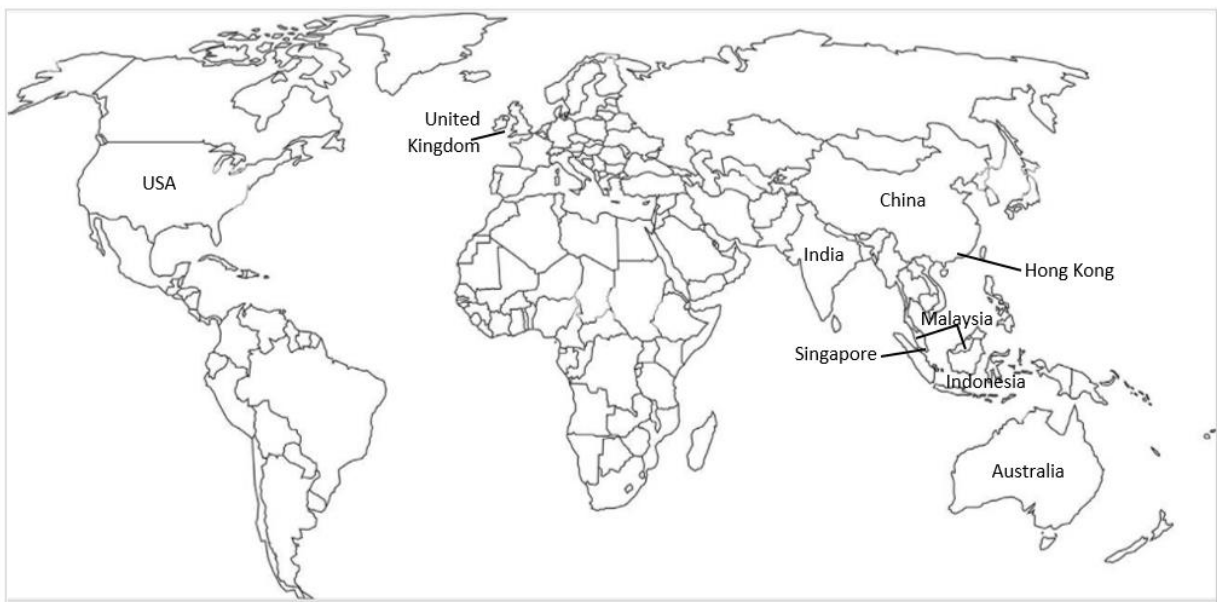


Fig. 2

(a) Calculate the mean length of stay of the visitors they have interviewed. [1]

- 2.86 days

(b) Describe a recording sheet that could be used to collect the information shown in Fig. 1. [3]

▪ **1m for each of the following points:**

- The recording sheet should include the location of the survey and the date it was carried out.
- Students can use the tally method to record tourists' country of origin.
- The recording sheet should have 4 columns; one to indicate the country of origin of tourists, another to count the number of visitors and the last column to record the average length of stay in Singapore. Optional: 4th column to calculate average length of stay (1m for description of 2 columns, 2m if mention at least 3 columns) OR sketch of recording sheet
- Refer to the sketch of the recording sheet below(up to 2m).

Country of origin	Number of visitors	Length of stay (days)	Average length of stay (days)
China	II	3, 4...	
Indonesia	III	2, 4, 2...	
India	I	2, ...	
Malaysia	IIII	1, 4, 3, 3, 2...	
Australia	II	5, 6...	
USA	I	6, ...	
United Kingdom	III	3, 7, 2...	
Hong Kong	IIII	1, 3, 2...	
Total			

(c) Some students thought that there may be a link between the distance from the visitor's country of origin to Singapore and their average length of stay.

State a hypothesis that could be used in this line of inquiry. [1]

- The further the country of origin to Singapore, the longer the average length of stay.

(d) Using Figs 1 & 2, explain whether the hypothesis is supported or rejected. [3]

- **Overall observation (1m):** The hypothesis is supported
- **Contrasting data (1m):**

- Countries which are nearest to Singapore such as Indonesia and Malaysia have lower/ below mean length of stay with 2.45 and 2.41 days respectively
- Countries which are further from Singapore such as UK and Australia have higher/ above mean length of stay with 3.67 and 3.33 days respectively
- **Odd (1m):** However, despite USA being furthest from Singapore, it has the lowest average length of stay of 2.12 days.

(e) After evaluating their initial investigation, the students also wanted to find out whether attractions in Sentosa with a large number of activities would attract more visitors. Outline how the students could carry out their investigation. [5]

- **Pre-FW:** craft a hypothesis or guiding question
- **Type of survey:**
 - Pedestrian count
- **How to carry out survey:**
 - Where: to carry out the count at the exits or entrances of attractions at Sentosa.
 - When: Make sure all visitor counts are conducted for all selected tourist attractions over the same time period such as conducting it on one weekday and one weekend for 4 weeks during June (holiday season)/ peak season from 2 to 3pm.
 - What: use either the pocket tally counter or the traditional tally method to assist with counting the number of visitors
 - Count the number of activities tourists can take part in at each tourist attraction (either physically at the attractions or use secondary data such as Sentosa official website)
- **Post-fieldwork analysis:**
 - Plot a scatter graph for data representation, with x-axis being the number of activities at each attraction and y-axis being number of visitors. (simple line/ bar graph also acceptable)
 - Draw a line of best-fit to prove relationship OR Compare the total number of visitors for each attraction and the number of activities at each location to find out the relationship.

Section A

Question 2: W&C Fieldwork

A group of twenty students visited the mountainous area of Sapa in Vietnam and were interested in whether air pressure changed along the valley as the altitude changed. They selected four locations and took three readings at each location on one day. Information relating to Sapa and the area of study is shown in Photograph A and the data collected is shown in Fig. 3, and Tables 1 and 2.

Photograph A



Table 1

Locations	Altitude (m)	Air Pressure (mb)		
		1 st reading	2 nd reading	3 rd reading
1	1889	821	811	837
2	984	907	903	900
3	106	1000	998	1001
4	0	1013	1012	1011

(a) Using the information from Table 1, calculate the mean air pressure for Location 1. [1]

- The mean air pressure for location 1 is 823 **mb**

(b) Suggest how the air pressure at the **four locations** could be shown on one graph. [3]

- Comparative bar graph
- X-axis: locations, y-axis: air pressure
- Using a different colour/shading/pattern to represent each individual reading

(c) Some students were also interested in how **wind speed varies** with **altitude**. The group of **20** students collected wind speed data at **Locations 1 to 4**. They took three readings after 1 minute intervals at each location. The data collected is shown in Table 2 and Fig. 3.

Table 2

Locations	Altitude (m)	Wind speed (m/s)		
		1 st reading	2 nd reading	3 rd reading
1	1889	6	11	7
2	984	2	8	9
3	106	2	4	3
4	0	1	5	6

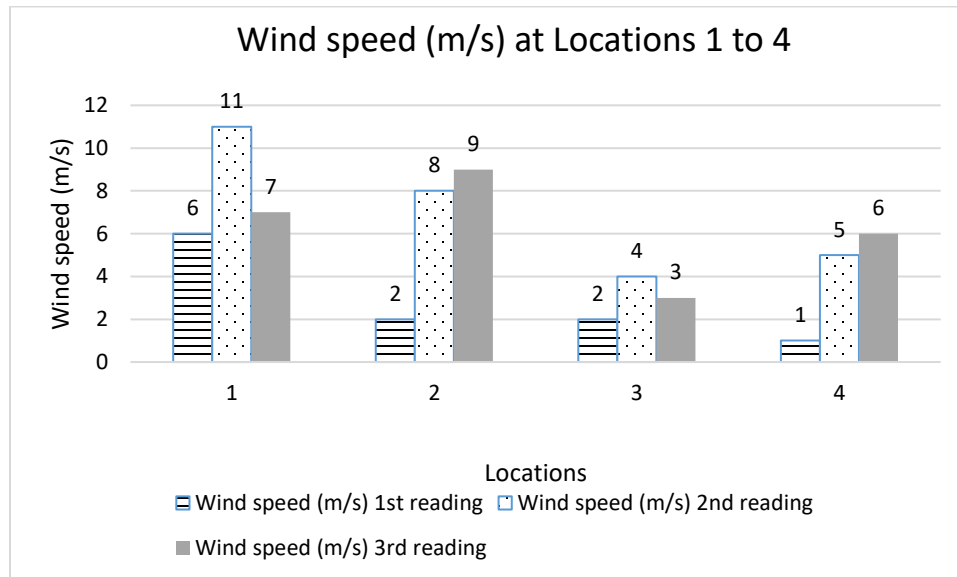


Fig. 3

(i) Suggest a suitable hypothesis the students could use to investigate the relationship between altitude and wind speed. [1]

- The higher the altitude, the higher the wind speed/
- As the altitude increases, the wind speed increases

(ii) One student suggested that they start recording wind speeds from the lowest point at Location 4 and walk up the mountain to Location 1 from 8am to 2pm, recording wind speeds along the way.

Explain why some students thought that this might give misleading results [1] and suggest how the twenty students could organise their investigation recording of wind speeds to achieve greater accuracy. [5]

Explain why misleading (reserve 1m):

- taking wind speeds at different times of the day at different locations is misleading
 - because it's not a fair comparison because wind speed/ weather condition changes throughout the day
 - due to factors like different air pressures in the morning and afternoon which is affected by differing angle of sun that affects temperature in the morning and afternoon

Suggest how to organise investigation sampling:

- the 20 students could organise themselves into 4 groups of 5 (reserve 1m)
 - to take wind speed readings at the 3 locations at the same time for greater reliability and accuracy
- students can take more than 1 reading in a day e.g. 3 readings/day e.g. at 8 am, 12 noon and 4 pm to take average for greater reliability / accuracy OR
- this can be conducted over a period of 7 days to take into account changes in wind speeds on other days for greater reliability /accuracy

(iii) Using Table 2 and Fig. 3, explain whether the hypothesis is supported or rejected. [3]

- 1m for each point
- The hypothesis is supported.
- When altitude was highest at 1889m, the average wind speed was highest at 8m/s and when altitude was lowest at 0m, the average wind speed was lower at 4m/s
- However at location 4, despite having a lower altitude than Location 3, average wind speed was higher at 4m/s

Section B

3 (a) Explain how the media promotes tourism. [4]

- Def of Media: channels through which news and information are communicated to the public which includes tv, radio, newspapers and the internet.
- positive reports such as the friendliness of the local population, an interesting culture, good shopping opportunities and attractive scenery can encourage tourists to visit
- tourists more aware of 'new' destinations that they may have not considered such as visits to Antarctica, treks in Himalayan mountains due to favourable media reports
- travel writers offer their comments on various media platforms such as travel websites and guidebooks to offer opinions and reviews about destinations they travelled in.
- these reviews are easily accessible from various media platforms and may influence the decisions of travellers in terms of deciding their final destination.

3(b) 'Environmental degradation far outweighs the advantages tourism brings to a country.'

To what extent is this true? Support your answer with evidence.

Level 1		Level 2		Level 3	
0	Content not relevant to topic.	4	Details: environmental degradation and one benefit considered but very patchy explanations. Clear and logical explanations. Examples: Some examples or other evidence will be presented to support one of the strategies. Evaluation: none	7	Details: environmental degradation and at least one benefit, (either economic or socio-cultural) considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive Evaluation: Some consideration of evidence and a clear 'how far do you agree' statement is made to conclude the answer. / Did not consider evidence when evaluating, simply evaluated based on description
1	Details: listing only Balance: none Examples: none Evaluation: none	5	Details: environmental degradation and one benefit considered but very patchy explanations. Good reasoning and logic in most parts of answer. Examples: Some examples or other evidence will be presented to support one of the impacts.	8	Details: environmental degradation and at least one benefit (either economic or socio-cultural) considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive

			Evaluation: none		Evaluation: Thorough consideration of evidence and a clear 'to what extent' statement is made to conclude the answer. Good use of concepts and criteria to evaluate.
2	Details: listing only with sketchy details Balance: none Examples: none Evaluation: none	6	Details : environmental degradation and at least one benefit considered with appropriate details and explanations. Good reasoning and logic in most parts of answer. Examples: Some examples or other evidence will be presented to support both impacts Evaluation: Limited to a single sentence without considering 'how far' or the extent of the effectiveness		
3	Details: Explained with sketchy details Balance: none Examples: 1 example given but lacks details Evaluation: none				

4 (a) Explain why tourists are attracted to places with MICE facilities. [4]

- MICE locations usually **host large-scale events** such as meetings and conventions
- There are **supporting infrastructure and services** such as hotels and retail shops
- These attract organisers who organise trade fairs and international conferences which attract business travellers
- located along international air routes hence greater accessibility
- reliable telecommunication network enables greater connectivity across space and time

- E.g. Singapore was the leading convention city in Asia Pacific in 2012. According to STB, Singapore drew 3.2 million business travellers in 2012 and accounted for 24% of all tourists in Singapore for that year.

Any 4 points

4(b) 'The greatest threat posed by climate change is extreme weather events.'

To what extent is this true? Support your answer with evidence. [8]

Level 1		Level 2		Level 3	
0	Content not relevant to topic.	4	Details: Extreme weather events and 1 other factor is considered but very patchy explanations. Clear and logical explanations. Examples: Some examples or other evidence will be presented to support one of the strategies. Evaluation: none	7	Details: Extreme weather events and 1 other factor considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive Evaluation: Some consideration of evidence and a clear 'how far do you agree' statement is made to conclude the answer. / Did not consider evidence when evaluating, simply evaluated based on description
1	Details: listing only Balance: none Examples: none Evaluation: none	5	Details: Extreme weather events and 1 other factor considered but very patchy explanations. Good reasoning and logic in most parts of answer. Examples: Some examples or other evidence will be presented to support arguments..	8	Details: Anthropogenic and natural factors considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive Evaluation: Thorough consideration of evidence and a clear 'to what extent'

			Evaluation: none		statement is made to conclude the answer.
2	Details: listing only with sketchy details Balance: none Examples: none Evaluation: none	6	Details: Extreme weather events and 1 other factor considered with appropriate details and explanations. Good reasoning and logic in most parts of answer. Examples: Some examples or other evidence will be presented to support both factors. Evaluation: Limited to a single sentence without considering 'how far' or the extent of the effectiveness		
<u>3</u>	Details: Explained with sketchy details Balance: none Examples: no example given Evaluation: none				

Section C

Question 5

5 (a) Study Fig. 4, which is a graph showing the changing use of pesticides in agriculture in Vietnam, Thailand, Cambodia and Laos.

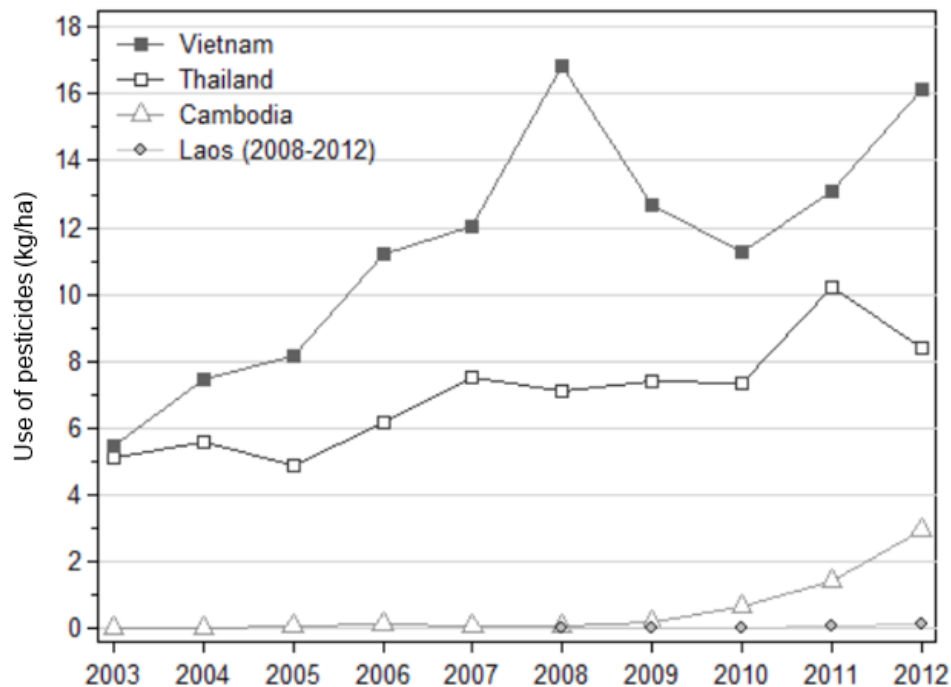


Fig. 4

Use Fig. 4 to describe how the use of pesticides have changed for the countries between 2003 and 2012. [4]

Overall:

- All 4 countries have shown an increase in the use of pesticides between 2003 and 2012

1m for each point below:

Significant:

- Increased the most: Vietnam, $16.8 - 5.5 = 10.5 \text{ kg/ha}$
- Increased the least: Laos, about 0.1 to 0.2 kg/ha
- Highest: Vietnam's use of pesticides remained highest throughout the whole period
- Lowest: Laos only started using pesticides in 2008 and its usage remained lowest amongst the countries from 2008 onwards

Odd:

- From 2011 to 2012, only Thailand showed a decline of about 1.8kg/ha while the rest of the 3 countries continued to increase

(b) Study Fig. 5, which shows the impacts of climate change on agriculture. Use information from Fig. 5 to explain how climate change affects agriculture. [4]

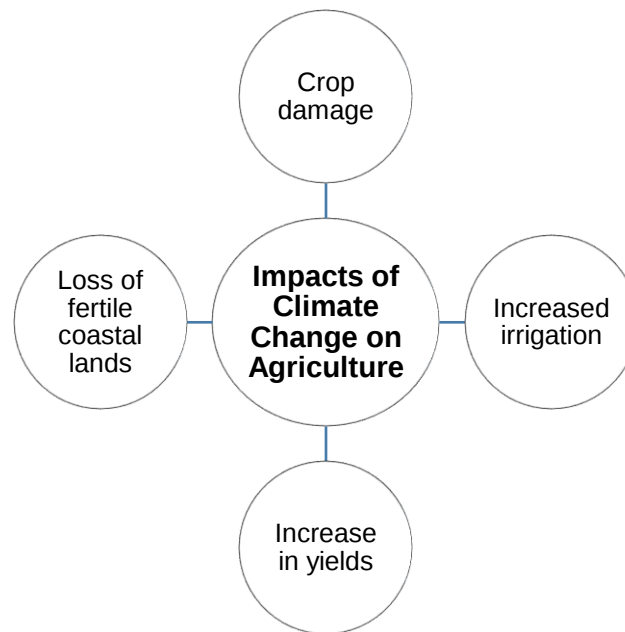


Fig. 5

- Any 4 causes linking to effects shown in diagram. 1m for each cause.
- Increase in temperatures may lead to:
 - o More frequent intense precipitation causing flooding or waterlogging resulting in crop damage
 - o Increase in pests and diseases leading to crop damage
 - o Increase in areas affected by drought/ heat waves which may cause crop failure/ damage OR lead to an increase in the need for irrigation
 - o Change in precipitation patterns in some areas leading to a reduction in water available for crop hence increasing the need for irrigation
 - o Sea level rise due to melting of glaciers/ expansion of seawater which may cause flooding in the fertile coastal lands making these areas not suitable for growing crops
 - o Change in areas suitable for cultivation → areas previously too cold/ too dry to grow crops may now become arable leading to an increase in yields
 - o Longer growing seasons leading to increase in yields

(c) Fig. 6 (Insert) shows the prevalence of malnutrition in Uganda and Fig. 7 (Insert) shows the percentage of grain production, and the total grain production of each region in Uganda.

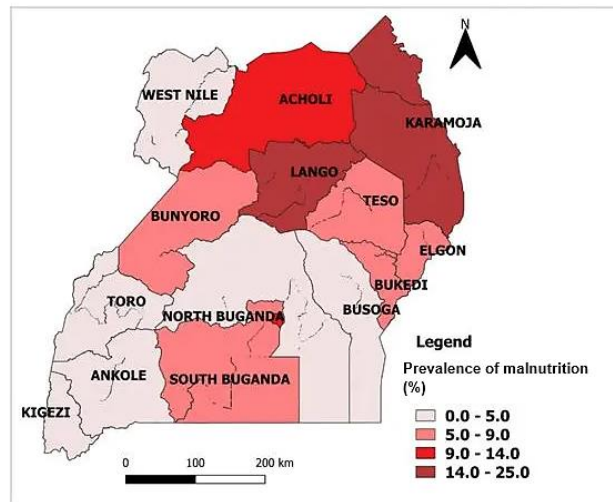


Fig. 6

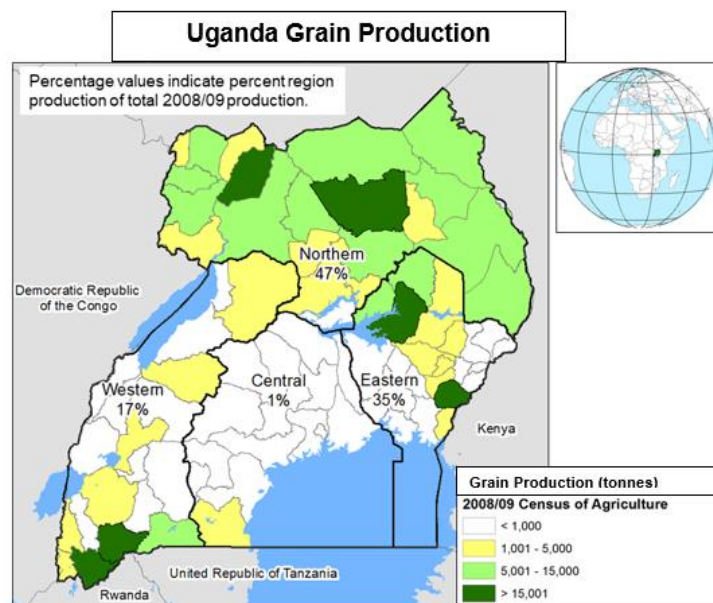


Fig. 7

Use Figs. 6 and 7 to comment on whether areas in Uganda which have high grain production are also low in malnutrition rates. [5]

- **Comment:**
- It is not true that areas with high grain production have low malnutrition rates/ very few areas true/ generally small /few areas have high grain production and also low malnutrition rates (rest of answer would be reworded)
- Generally, there is a positive/direct relationship between grain production and malnutrition rates
- **Data:**
 - o areas with higher grain production (above 5,000 tonnes) are also areas with higher malnutrition rates (above 5%) such as the northern and eastern parts of Uganda like Teso, Karamoja and Acholi. OR Northern region highest % of grain production of 47% also has highest malnutrition rates of 14 to 25%
 - o production is generally lower (less than 5,000 tonnes) in the Central and western regions of Uganda and malnutrition rates are also lowest (less than 5%)
- **Brief explanation:**
 - o This could be because the disposable incomes are higher in the Central and Western regions, therefore, people have higher purchasing power/ can afford to buy more food, leading to lower malnutrition rates (can be stated as reverse)
- **Anomaly:**
- However, there are small/few areas with high grain production and low malnutrition rates
 - o For example, southern part of Ankole: production is highest (above 15,001 tonnes) and prevalence of malnutrition is lowest (less than 5%) OR
 - o West Nile: most areas with 2nd highest amount of grain production (5,001 to 15,000 tonnes) and malnutrition rate is lowest (0 to 5%)

(d) Photograph B (Insert) shows a remote area in a mountainous region.

Photograph B

With the help of Photograph B, explain how food shortages may occur. [4]

- Accessibility is affected due to physical barriers such as mountains and landslides shown in photo
- **Accessibility refers to how easily residents can reach the food that is available**
- Food outlets may be few and far apart from each other in these mountainous remote areas hence people in these areas may suffer from food shortages as they are unable to obtain fresh produce
- They are unable to reach food outlets due to the landslides as roads are blocked
- **Food distribution is the movement of food from farms to retail outlets**
 - o This depends on the presence of a good transport network (no mark)
- Chronic food shortage is worsened by a lack of good transport network which makes it difficult to access the numerous remote communities in the mountains/ poorly developed roads (as seen in the unpaved roads)→ longer transportation time→ higher cost of transporting farm produce

(e) 'The variations in food consumption between developed and less developed countries is largely due to economic factors.'

How far do you agree? Give evidence to support your answer. [8]

Level 1		Level 2		Level 3	
0	Content not relevant to topic.	4	Details: Economic factor (disposable income) and 1 other factor is considered but very patchy explanations. Clear and logical explanations. Examples: Some examples or other evidence will be presented to support one of the strategies. Evaluation: none	7	Details: Economic factor (disposable income) and 1 other factor considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive Evaluation: Some consideration of evidence and a clear 'how far do you agree' statement is made to conclude the answer. / Did not consider evidence when evaluating, simply evaluated based on description
1	Details: listing only Balance: none Examples: none Evaluation: none	5	Details: Economic factor (disposable income) and 1 other factor considered but very patchy explanations. Good reasoning and logic in most parts of answer. Examples: Some examples or other evidence will be presented to support arguments.. Evaluation: none	8	Details: Economic factor (disposable income) and socio-cultural/ political factors considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive Evaluation: Thorough consideration of evidence and a clear 'to what extent' statement is made to conclude the answer.
2	Details: listing only with sketchy details Balance: none Examples: none	6	Details: Economic factor (disposable income) and 1 other factor considered with appropriate details and explanations. Good reasoning and logic in most parts of answer.		

	Evaluation: none		Examples: Some examples or other evidence will be presented to support both factors. Evaluation: Limited to a single sentence without considering 'how far' or the extent of the effectiveness		
3	Details: Explained with sketchy details Balance: none Examples: no example given Evaluation: none				

Section C

Question 6

- 6 (a) Study Fig. 8 and Fig. 9 (Insert), which show the Wenchuan earthquake in 2008 in the Sichuan Province, China and the location and information of the Juizhaigou earthquake in 2017.



Fig. 8

- (i) With reference to Fig. 8, describe the differences in damage between the 2008 and 2017 earthquakes.

Describe the differences: [2]

- The 2008 earthquake sustained greater damage than the 2017 earthquake as seen in the **higher number of lives loss**. The 2008 earthquake caused 87000 deaths which is significantly higher than the 25 deaths in 2017. (calculated data)
- The **destruction of properties is also significantly greater** in the 2008 earthquake which saw entire villages flattened as compared to the destruction of 50% houses in the 2017 earthquake.

- (ii) Use Figs. 8 and 9 (Insert) to account for the differences in damage between the 2008 and 2017 earthquakes.
- Account: [5]
 - The 2008 earthquake caused greater damage because the **depth of the focus** of 17km is much **shallower** than the 2017 earthquake of 22km.[1] **As the focus is located nearer to the earth's surface, the seismic waves reach the land much quickly causing the area to sustain more damage.**[1]
 - Also the 2008 earthquake has a **higher magnitude** of 8.0 as compared to the 2017 earthquake which registered a 7.0 magnitude. [1] This is because with each increasing magnitude on the Richter Scale, the impact of the earthquake becomes 10 times greater in magnitude than the previous one. Thus, **the amount of energy released is much higher causing more damage.** [1]
 - 2008 earthquake occurred in Wenchuan City(less than 500m), with a higher pop density compared to Juizhaigou with lower pop density as it is located in the mountains of 1000m -2000m (fewer pp stay in mountains). [1] **Densely populated areas have greater concentrations of people and buildings and thus, will cause more casualties and damage than earthquakes in rural areas where there are fewer people and built-up areas.** [1]
- OR
- **Juizhaigou is situated on mountainous terrain of 1000-2000m** implying fewer people residing and fewer infrastructure and buildings compared to Wenchuan City located on lower ground of <500m.[1] **With fewer concentrations of people and buildings, it will cause fewer casualties and damage in Juizhaigo than Wenchuan City.** [1]

- (b) Study Fig. 10 (Insert), which shows movements within the mantle and tectonic plates.

With reference to Fig. 10 (Insert), explain how movements in the mantle resulted in the formation of the mid oceanic ridge.

- Material in the mantle is heated by the core causing convection currents in the molten mantle material.
- Mantle expands, rises and spreads out beneath the plates.
- Oceanic plates are dragged along and move away from each other.
- Magma rises from the mantle to fill the gap between the plates as they diverge.
- New sea floor is formed when the magma cools and solidifies. This process is called sea-floor spreading.
- Magma rises at the zone of divergence/spreading zone to form a ridge of new ocean floor called mid-oceanic ridge.

(c) Study Fig. 11, which shows the formation of a tsunami.

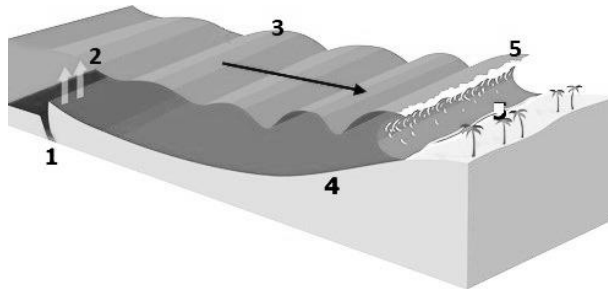


Fig. 11

Use Fig. 11 to describe the formation of the tsunami with reference to points 1 to 5.

- It starts when seismic energy from an offshore earthquake at 1
- The plate is forced upwards causing waters to be displaced/forces out a mass of sea water at 2.
- Seismics waves transmitted into the water and the waves start at low height of <1m, long wavelength and speeds of 800 km/h at 3.
- On reaching shallower water at 4, greater friction with the seabed slows the waves, and forces the waves to increase in height.
- At the point of impact on the coast at 5, the tsunami may reach great heights of 15m generating tsunamis and eventually crash onto shore.

(d) 'Technological advances have the greatest influence in increasing the intensity of food production and food supply.'

To what extent do you agree with this statement? Use examples to support your answer.

Content: Technological advances + at least 1 other factor affecting intensity of food production

Physical factors -Climate, Soils and drainage, Relief.

Economic factors : Purpose of farming, Demand of capital, Agribusiness

Political : Govt policy, ASEAN

Level 1		Level 2		Level 3	
0	Content not relevant to topic.	4	Details: Tech advances and 1 other factor is considered but very patchy explanations. Clear and logical explanations. Examples: Some examples or other evidence will be presented to support one of the factors Evaluation: none	7	Details: Tech advances and 1 other factor considered with comprehensive explanations. Good reasoning and logic, with sound knowledge. Examples: Examples are extensive Evaluation: Some consideration of evidence and a clear 'how far do you agree' statement is made to conclude the answer. / Did not consider evidence when evaluating, simply evaluated based on description
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2	Details: listing only with sketchy details Balance: none Examples: none Evaluation: none	6	Details: Tech advances and 1 other factor considered with appropriate details and explanations. Good reasoning and logic in most parts of answer. Examples: Some examples or other evidence will be presented to support both factors.		

			Evaluation: Limited without considering 'how far' or the extent of the effectiveness		
— 3	Details: Explained with sketchy details Balance: none Examples: no example given Evaluation: none				