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ST. MARGARET'S SECONDARY SCHOOL

Preliminary 2015

CANDIDATE NAME

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CLASS

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REGISTER
NUMBER

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GEOGRAPHY

2236/01

1 Suggested Answer Scheme

20 August 2015

4 Express

1 hour 40 minutes

Do not open this Booklet until you are told to do so.

Write your Name, Class and Index number on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

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

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

Section A

Answer the **compulsory** question.

Section B

Answer **ONE** question.

Write all answers on the writing paper provided.

Candidates should support their answers with the use of relevant examples.

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

Begin your answer to each question on a fresh piece of paper.

At the end of the examination, fasten all your work securely together.

At the end of the examination, fasten all your work securely together.

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

This document consists of 15 printed pages

SECTION A

This question is compulsory.

- 1** Students in Singapore carried out fieldwork at the East Coast Park. Students notice that the profile of the beach further away from a breakwater is steeper than the profile of the beach nearer to the breakwater.

They decided to measure the profile of the beach in two locations further away from the breakwater and in two locations nearer to the breakwater. The average of the angles of the gradient of the beach of the two locations further away from the breakwater at **X** and the average of the angles of the gradient of the beach of the two locations nearer to the breakwater at **Y** are shown in Table 1.

Table 1
Data of the gradient of the beach at 2 places

Distance from the coastline (m)	Average of the gradient of the beach at X($^{\circ}$)	Average of the gradient of the beach at Y($^{\circ}$)
0 - 1	2	3
1 - 2	4	8
2 - 3	5	14
3 - 4	8	10
4 - 5	14	8
5 - 6	45	9

Fig. 1 shows the locations of the Breakwater and the locations of the fieldwork site.

Locations of Breakwater A and the locations of the fieldwork site



Fig. 1

- (a) Use Table 1 to state which distance from the coastline is the gradient of the beach the greatest and what is the angle of the gradient of that part of the beach. [1]
- (b) Write a hypothesis the students are most likely to investigate with reference to the data in Table 1. [1]
- (c) Draw a graphical representation of the beach profiles at the two locations further from and nearer to the breakwater. [4]
- (d) Evaluate the hypothesis and account for its validity. [3]
- (e) Give 4 suggestions on how the students can ensure the reliability of the data collected during the fieldwork. [4]
- (f) A group of students wanted to find out the reasons that affect tourists' average length of stay when visiting Singapore.
- (i) Suggest a hypothesis that the students can work on for this this study. [1]

- (ii) Fig. 2 shows the items in the questionnaire that students have designed for the study.

1. Name: _____
2. Age: _____
3. Home Address: _____
4. Length of stay in Singapore: _____
5. Place of stay: _____
6. Purpose of visit: _____
7. On transit; YES/NO
8. Attractions visited in Singapore: _____

Fig. 2

Identify two problems with this questionnaire and suggest how it could be improved. [4]

- (g) The students decided to collect the data at the entrance of the Singapore Zoological Garden between 2pm and 4pm on a Saturday afternoon. They planned to use the random sampling method to select their respondents. Explain how this is done and comment on its suitability for this study in comparison to other sampling methods. [4]

- (h)(i) Fig 3 shows part of the data the students collected from the study. [1]

Explain how the average length of stay based on country of origin should be calculated.

Data on the average length of stay by country

Country of origin	Average Length of stay
Australia	2
England	3
Japan	6
Malaysia	5
USA	4

Fig. 3

- (ii) Identify suitable ways to present this data visually and account for your choice. [2]

- 2(a) Study Fig. 4, which shows a coastal feature.

Wedding Cake Rock near Sydney at risk of collapse



Fig. 4

- Identify the coastal feature in Fig. 4 and explain why it is at risk of collapse. [4]

- (b) Study Fig. 5, which is a cross section of a coast.

Cross Section of a coast

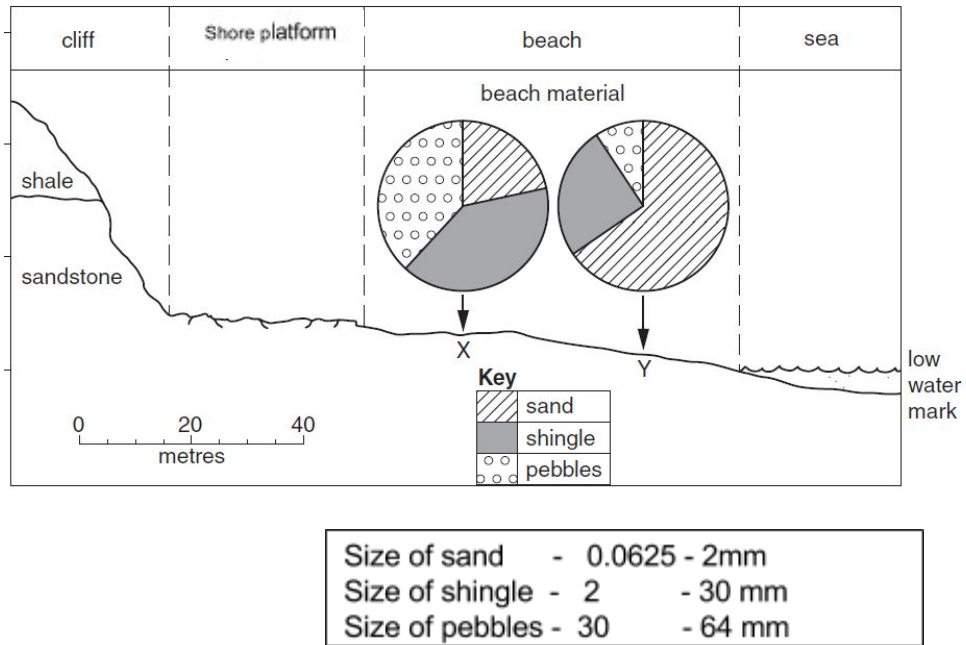


Fig. 5

- (b) Describe and account for the differences between the beach material at X and Y. [5]
- (c) Study, Fig 6, which shows a coral reef ecosystem in the sea.

A coral reef ecosystem in the sea



Fig. 6

Using Fig. 6, identify the pressure exerted on a coral reef ecosystem and explain the environmental conditions that will affect the growth of coral reefs. [4]

(d) Explain why coral reefs are valuable. [4]

(e) Discuss the types of pressure the mangrove ecosystems face due to human activities. Support your answer with evidence. [8]

3a Fig 7 shows a coastal protection method used in several developed countries.



Fig. 7

(i) Identify this coastal management strategy and explain how it reduces the rate of erosion. [3]

(ii) Explain the disadvantages of using hard engineering as a coastal protection method. [4]

END OF PAPER



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Locations of Breakwater A and the locations of the fieldwork site



Fig. 1

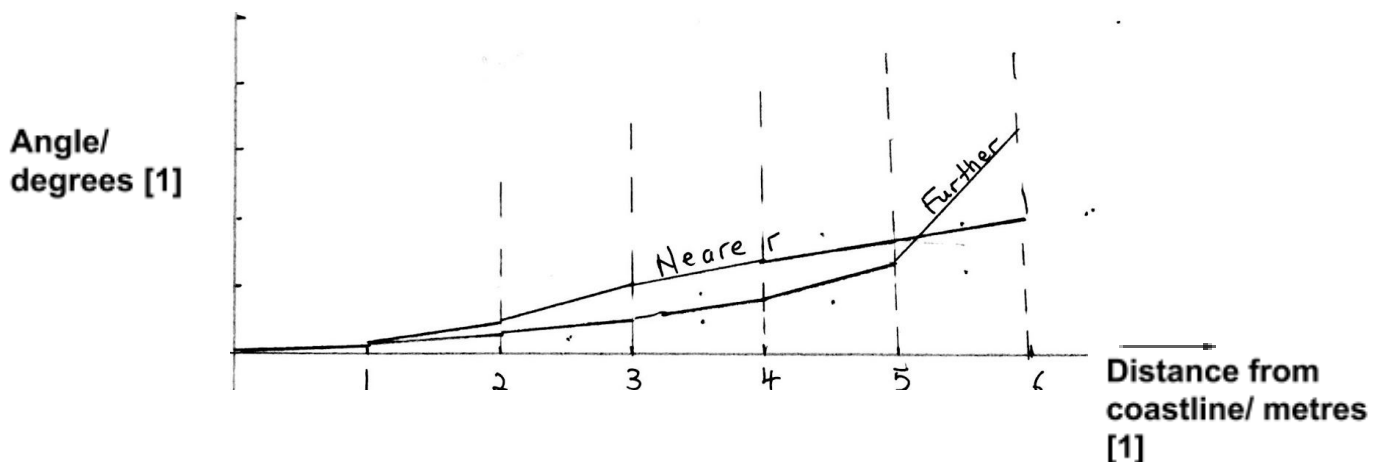
- (a) Use Table 1 to state which distance from the coastline is the gradient of the beach the greatest and what is the angle of the gradient of that part of the beach. [1]

1	(a)	5-6 m	$\frac{1}{2}$
		45 degrees	$\frac{1}{2}$

- (b) Write a hypothesis the students are most likely to investigate with reference to the data in Table 1. [1]

	(b)	The profile of the beach further away from a breakwater is steeper than the profile of the beach nearer to the breakwater	1
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- (c) Draw a graphical representation of the beach profiles at the two locations further from and nearer to the breakwater. [4]



[Accuracy – 1 mark for each beach profile]

(d) Evaluate the hypothesis and account for its validity. [3]

- (d) • The hypothesis “The profile of the beach further away from a breakwater is steeper than the profile of the beach nearer to the breakwater” is valid as the profile drawn shows the gradient is steeper at the location further away from the breakwater which shows that the destructive waves may have eroded foreshore to a larger extent and these waves may have been reflected from the breakwater to become stronger 1
- as compared to the location nearer to the breakwater which is of a more convex shape and that shows the foreshore here is eroded to a smaller extent because the breakwater has deflected and weakened the wave energy 1
- The hypothesis is valid also due to the data being collected being accurate such that the data corroborates with the prediction in the hypothesis so the hypothesis is valid. 1

Not valid

- No specific data on the distance away from the breakwater to be considered far or near to assert an effect on the waves. 1
- Other factors such as erosion, tide and human interference may have shaped the beach profile 1
- and that the data has not been collected. 1
-

(e) Give 4 suggestions on how the students can ensure the reliability of the data collected during the fieldwork. [4]

	(e)	• At least 2 line transects at the location X and Y so as to have an average of the readings which will minimize the inaccuracies.	1
		• Ensure the distance interval between readings is exactly 1 metre apart through using the metre rule to measure accurately	1
		• Ensure the accurate measurement of the beach gradient through accurate use of the clinometer and ensuring the small ball bearings are allowed to move freely before being fixated by the Velcro	1
		• Double check the angle of beach gradient through placing the clinometer on the top of the ranging pole located on lower ground and then placing the clinometer on the top of the ranging pole located on higher ground/ Ensure the students lower their eye level to the top of the ranging poles to avoid parallax error	1
		• Take a few readings at the same tide	1
		• Take a few readings at the same time of the day	1

- (f) A group of students wanted to find out the reasons that affect tourists' average length of stay when visiting Singapore.

- (i) Suggest a hypothesis that the students can work on for this study. [1]

	(f)	Any plausible hypothesis that states a relevant independent variable and has a focus on Singapore. Eg: • The purpose of visit determines tourists' average length of stay in Singapore. • Tourists that come from countries further away spend more days in Singapore.	1 1
--	-----	--	-------------------

- (ii) Fig. 2 shows the items in the questionnaire that students have designed for the study.

1. Name: _____ 2. Age: _____ 3. Home Address: _____ 4. Length of stay in Singapore: _____ 5. Place of stay: _____ 6. Purpose of visit: _____ 7. On transit; YES/NO 8. Attractions visited in Singapore: _____

Fig. 2

- Identify two problems with this questionnaire and suggest how it could be improved. [4]

	(f) (ii)	• Most of the items are open ended with the exception of item 7. It is good to use closed questions with a set of options for respondents to choose from as they don't have to think too hard and data could be more easily tabulated. • The questionnaire asks for personal information such as age and home address which are not needed and tourists might not be comfortable divulging. More general information such as 'age group' with options of age group provided for tourists to choose from and 'country of origin' instead of home address would be more suitable • Layout is not appropriate as item 7 is a question with options and it has been placed between open-ended questions. It is best to begin the questionnaire with a few closed questions or questions with options followed by open ended questions.	1 1 1 1
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		*Any 2. Accept other plausible answers.	
--	--	---	--

- (g) The students decided to collect the data at the entrance of the Singapore Zoological Garden between 2pm and 4pm on a Saturday afternoon. They planned to use the random sampling method to select their respondents. Explain how this is done and comment on its suitability for this study in comparison to other sampling methods. [4]

	(g)	• Random sampling is done by generating random numbers to select who to interview or respond to a questionnaire.	1
		• It might not be suitable for this study as the students do not know the whole population available for the study.	1
		• Systematic sampling might be more suitable for this study, for example by issuing the questionnaire to every 5 th person as there is likely to be sufficient representative people available at the zoo during the period of study	1
		• Stratified sampling is also not suitable as there is no interest in sub-groups to study	1
		Other points:	
		• Random sampling is suitable as the human bias of sample audience selection is removed	1
		• Random sampling is not suitable due to poor representation of particular sections of the area being surveyed.	1

- (h)(i) Fig 3 shows part of the data the students collected from the study. [1]
)

Explain how the average length of stay based on country of origin should be calculated.

Data on the average length of stay by country

Country of origin	Average Length of stay
Australia	2
England	3
Japan	6
Malaysia	5
USA	4

Fig. 3

	(h) (i)	Add up the total number of people from the same country of origin. Divide the total number of days they spent together in Singapore by the total number of tourists from the identified country.	1
--	------------	--	---

(ii) Identify suitable ways to present this data visually and account for your choice. [2]

	(ii)	- A bar graph/pie chart could be used to present the data - This is because 'country of origin' is discrete and categorical data - With average length of stay in the y-axis and country of origin in the x-axis	1
		OR	1
		The bar graph allows multiple sets of data to be compared easily. *Accept other advantages of bar graphs as answer.	1

2(a) Study Fig. 4, which shows a coastal feature.

Wedding Cake Rock near Sydney at risk of collapse

**Fig. 4**

Identify the coastal feature in Fig. 4 and explain why it is at risk of collapse. [4]

(a)	Any four	
	Headland/Cave with many cavities and long lines of weakness so the rock structure could be weak	1
	The lines of weakness allow hydraulic action and abrasion to take place	1
	OR	
	Hydraulic action occurs when waves strike against a rock surface, trapping air inside rock joints. The air is compressed by the oncoming waves, exerting pressure on the joints. As the air is repeatedly compressed, the joints weaken and rocks shatter.	1
	Abrasion or corrosion occurs as waves break, sediments carried by waves such as sand and rocks are hurled against the coast. The loosened sediments knock and scrape against coastal cliffs. This weakens the surface and breaks down the cliff.	1
	The protruding cliff is exposed to wave refraction and high energy waves are deflected to attack its base	1
	so the cliff is vulnerable to erosion of more waves heading in its direction	1

(b) Study Fig. 5, which is a cross section of a coast.

Cross Section of a coast

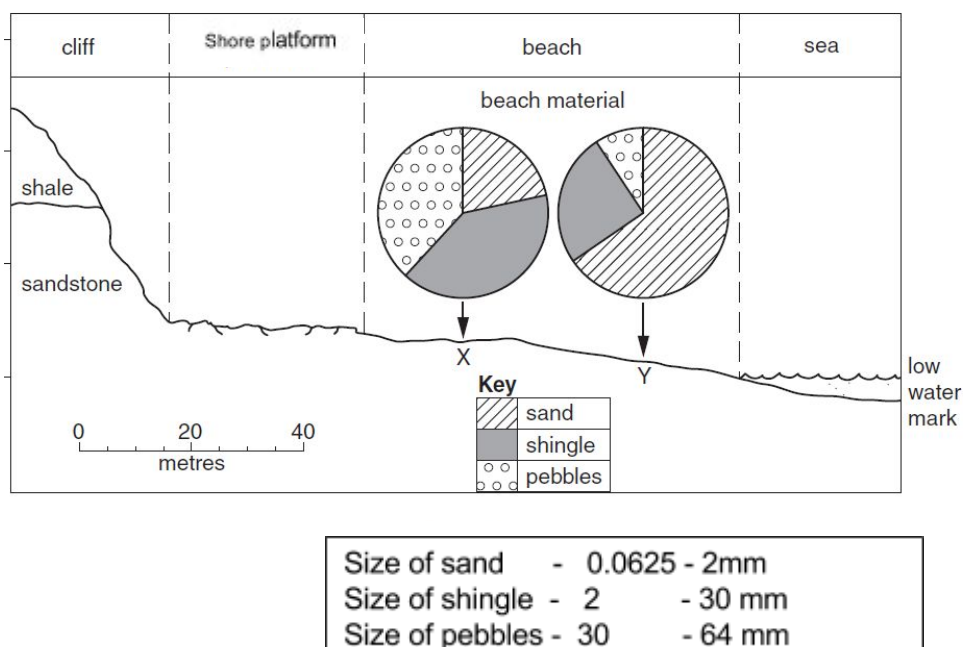


Fig. 5

(b) Describe and account for the differences between the beach material at X and Y. [5]

	(b)	• The texture of the beach material differs as the texture of the beach material at X is coarser	1
		• and more pebbles than Y	1
		• and less sand than Y	1
		• formation of a shore platform because the previous cliff that had collapsed	1
		• to form shingles and pebbles that are still left deposited along the coast.	1

(c) Study, Fig 6, which shows a coral reef ecosystem in the sea.

A coral reef ecosystem in the sea



Fig. 6

Using Fig. 6, identify the pressure exerted on a coral reef ecosystem and explain the environmental conditions that will affect the growth of coral reefs. [4]

	(c)	The threat is activity such as snorkeling that would pollute the water and bring about waste that will kill the coral reefs(compulsory point)	1
		The coral will die when • Storm waves are too strong and will destroy the corals.	1

	• Too much sedimentation may suffocate living corals. • Sea surface temperatures fall out of the range of 17 to 18°C/ High temperatures resulting in coral bleaching • Too saline or too low a salinity level will inhibit coral growth eg at mouths of rivers • Sea level increases that does not allow the sunlight to penetrate so photosynthesis does not take place • High turbidity restricts sunlight penetration so algae cannot photosynthesize efficiently [Any 3 points]	1 1 1 1 1
--	--	-----------------------

(d) Explain why coral reefs are valuable. [4]

(d)	• Coral reefs can support natural ecosystems, allowing a wide range of marine creatures to breed and grow. Coral reefs support more than 25 percent of the earth's marine fish species. • Marine creatures that live around reefs provide food for larger creatures. • Coral reefs have the ability to absorb wave energy generated in the open seas, thus protecting the adjacent land mass from erosion. However, during severe storm such as those generated by a tropical cyclone, coral reefs can be severely damaged. • Coral reefs and their nearby land areas have been developed as tourist attractions. And the tourism industry is able to generate a source of income for the country. • Jewellery and ornaments made from corals are often favoured as souvenirs by tourists visiting coral reefs.	1 1 1 1 1
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(e) Discuss the types of pressure the mangrove ecosystems face due to human activities. Support your answer with evidence. [8]

Pressure	Activity	Impacts	Examples
Demand for fuel wood and charcoal	Mangroves are cleared for fuel and charcoal, particularly in regions with low technology and low income economies	Fish breeding grounds are reduced. Also, coasts become more open to storm waves.	Indonesia
Need for more farming areas	Thousands of hectares of the flat, well-watered mangroves are converted into paddy fields and shrimp farms.	Mangroves are cleared and coasts become more vulnerable.	Vietnam Thailand
Land Reclamation	Land is reclaimed for housing, industry and recreational uses	Mangroves largely disappear from the environment. Moreover, coastal waters are polluted as a result of human activities.	Caribbean Islands
Water pollution	Urban and manufacturing activities result in untreated or partly treated urban and manufacturing wastes being dumped into coastal waters.	The pollution of coastal waters can overwhelm the delicate balance of mangrove ecosystems	Peru
Rising sea level	Rising sea levels, together with extreme storm activity, are likely to occur in future if climate change accelerates	Mangroves will have trouble colonizing areas further inland despite sea level rise as they will be in competition with human activities such as farming and the construction of sea defences.	Gulf of Thailand

3(a) Fig 7 shows a coastal protection method used in several developed countries.

**Fig. 7**

- (i) Identify this coastal management strategy and explain how it reduces the rate of erosion.

[3
]

(a)	• Tetrapods	1
(i)	• Four-pronged structures concrete structures stacked offshore in inter-locking position	1
	• Dissipate wave energy by allowing water to pass around the rather than hit them	1

- (ii) Explain the disadvantages of using hard engineering as a coastal protection method.

[4
]

(a)	• £3000-£5000 per metre/ expensive to build	1
(ii)	• Costly to maintain as they have to be maintained regularly	1
	• Aesthetically unappealing as they are mostly made of concrete and they require the removal/destruction of of the natural environment in their construction	1
	• The latter also leads to the reduction in biodiversity as habitat for plants and animals are destroyed	1
	• Uneven protection as they are constructed only at certain segments of the coastline where protection is needed. Wave energy could be diverted elsewhere along the coast causing erosion in these places	1
	• Dangerous to swimmers as they are large, hard and made of concrete and/or metal	1

- (b) Fig. 8 shows an extract from an online report on tourism in Greece.

Greece won't lose competitive edge: Tourism official

Michelle Fox | @MFoxCNBC
Tuesday, 14 Jul 2015 | 3:32 PM ETCNBC.com

While Greek tourism officials are concerned about the effects of the debt crisis on the industry, they are working hard to keep everything running smoothly for visitors, the general manager of the Greek Tourism Confederation said Tuesday.

In fact, despite the political turmoil, the travel industry has been going strong this year, Alexandros Lamnidis said in an interview with CNBC's "[Power Lunch](#)."

"We are concerned, we are planning ahead but we are rather optimistic that we shall overcome," he said. "Tourism is the main industry of the country, and we cannot afford to lose our competitive edge and we're not going to."

Fig. 8

- (i) Explain the importance of sustaining tourism for a country that is going through economic crisis such as Greece. [4]

	(b) (i)	• Tourism brings in a lot of economic benefits that could help countries which are struggling with economic crisis. • Tourism provides employment opportunities in tourist related jobs such as in hotel transportation, the food and beverage sector and in tour agencies. This helps to reduce unemployment • Tourism therefore leads to a growth of income for country as revenue can be earned through direct tourist spending as well as taxes on tourist related goods and services. • Tourism helps to earn foreign exchange which allows the receiving countries to purchase goods and services from elsewhere around the world. This is helpful when the country's own currency is low in value.	1 1 1 1
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- (ii) With reference to examples, explain how fluctuations could take place in tourist arrivals in a region. [6]

	(iii)	- Disasters – Disasters are events that cause great damage to property and cause loss of lives. Disasters discourage tourism as they pose greater risk to the safety of the tourists and may disrupt essential infrastructure and services that affects the tourists' experiences. - Eg: Tourist arrivals in Japan fell in April 2011 following the earthquake in Tohoku in March. - Regional and global recessions – Recession refers to a period of economic slowdown. Many people lose incomes or even jobs and as such, they need to cut down on spending. They are therefore less likely to spend money on visiting other countries - Eg: In 2008, France experienced a one third dip in tourist arrivals following the Global Economic Crisis. - Unfavourable political situations – Political conflicts may lead to instability in a country. Riots and protests may make a place unsafe for tourists. Travel advisories may be issued warning against travel to selected countries. - In 2011, some governments issued travel advisories to their citizens warning them against visiting Libya due to the civil war that occurred in the country. This lead to a decrease in overall tourist arrival in Libya that year *Accept other points with elaboration and examples.	1
			1
			1
			1
			1
			1

- (c) Visitors play the most significant role in the management of tourist areas. Do you agree? [8]

Visitors	Strengths: ▪ Raise awareness to conserve and preserve an attraction ▪ Visitors to a destination may realise the value of conserving and preserving the destination. These visitors also raise awareness about the destination at home by sharing their experience via word-of mouth ▪ Provide income opportunities for locals ▪ Visitor spending can also provide locals with income from employment and businesses. Visitors usually require hotel workers, hotel staff, waitresses and tour guides, which are employment positions that locals can easily fill. The arrival of tourists also gives locals opportunities to set up businesses such as tour companies or shops ▪ Fund conservation and preservation ▪ Visitor spending can provide funds to help conserve environments, preserve culture or maintain a tourist attraction. Such visitor spending can include entrance fees or the purchase of souvenirs. The income earned from entrance fees and souvenirs can be used to conserve a tourist site Limitations: ▪ Dilute local culture and customs ▪ Large numbers of visitors can cause a place to lose its identity, such as when dancers deliberately pose for tourist to take photographs. As a result, visitors may complain that a place or a performance does not feel 'authentic'. The dilution of local culture becomes more pronounced whenever visitors outnumber locals in an area and commercial activities focus mainly on tourism ▪ Damage tourists attractions ▪ Visitors may exhibit behaviours that can damage a tourist attraction. Examples of these behaviours are vandalism and littering. In some cases, the sheer number of tourist alone can damage a tourist site through their collective footsteps, noise or touch
Planning authorities	Strengths: ▪ Develop and maintain infrastructure and attractions ▪ Planning authorities often successfully develop, approve, fund and maintain infrastructure that help manage the impact of tourism in an area Draft laws and policies

	- Planning authorities can also draft laws and policies that help improve the quality of a tourist site. For instance, planning authorities can craft laws that limit the number of visitors to an attraction or regulate the type of commercial activity - Work with other government agencies - As part of the government, planning authorities can cooperate more easily with other government agencies to manage the impact of tourism. Planning authorities also have the advantage of being able to utilise a range of government resources Limitations: - Opposing stakeholders Stakeholders, such as local communities or NGOs, may oppose management strategies of planning authorities. For example, stakeholders may do so because the management strategies affect their livelihood or change their way of life. Stakeholders may also oppose planning authorities when they think that a different approach is needed to solve the problem. Tourism management strategies often have limited impact without cooperation from stakeholders - Difficult to plan for unforeseen factors - Even the most well-planned and well-funded programme can sometimes fail due to unforeseen factors. Examples of these factors include extreme weather, natural disasters or a general lack of interest from the public
Local communities	Strengths: - Involve locals in decision-making Local communities enlist residents in discussions and consultations about tourism management strategies to be carried out. They can also make other tourism-related decisions about their own community - Increase in tourism-related employment and business for locals Community-based tourism often make locals a priority when it comes to business and employment opportunities. Locals can get employed as guides, waiters, cleaners, drivers and reception staff Limitations: - Difficulty in obtaining external funding - Some local communities, especially disadvantaged ones, may face funding problems when setting up businesses or investing in vehicles to facilitate tourism in their area - Shortage of skilled labour - The local community alone may not have enough skilled labour, such as managers or consultants, that can successfully help manage the impact of tourism. In such cases, the community may need to seek the help of NGOs or organisations to provide skilled labour or training
Tour operators	Strengths: Provide feedback on tourist attractions Tour guides offer valuable feedback to tour operators about the social and environmental conditions of a tourist attraction. Their input are often used by local communities and planning authorities to plan tourism management strategies in a tourist attraction

	▪ Regulate tourist behaviour Tourist spend much of their time in a tourist attraction with tour guides or other staff of a tour operator. Therefore, tour operators are often in the best position to regulate tourist behaviour. This includes preventing tourists from littering, wandering into restricted areas or making too much noise to prevent damage to a tourist site. In addition, tour operators have an incentive in maintaining the quality of an attraction because the attraction is their source of income Limitations: ▪ Need to generate profits ▪ Tour operators are businesses and need to be profitable or to make money to survive. The need to generate profits can sometimes bring tour operators into conflict with other stakeholders. It may also override concerns to preserve the environment when addressing these concerns would reduce their profits
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ST. MARGARET'S SECONDARY SCHOOL

Preliminary Examinations 2015

CANDIDATE NAME

CLASS

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REGISTER NUMBER

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GEOGRAPHY

2236/02

Paper 2

25 August 2015

Secondary 4 Express

1 hour 30 minutes

Additional Materials:

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Section A

Answer **one** question from this section.

- (a) Study Fig. 1a, which shows a scale used to measure the intensity of tropical storms.

Scale to measure the intensity of tropical storms

Category	Central pressure (mb)	Wind velocity (km/hour)	Storm surge (metres)	Damage
1	More than 980	119-153	1.2-1.5	Minimal
2	965-980	154-177	1.6-2.4	Moderate
3	945-964	178-209	2.5-3.6	Extensive
4	920-944	210-248	3.7-5.5	Extreme
5	Less than 920	More than 248	Over 5.5	Catastrophic

Fig. 1a

Study Fig. 1b, which shows information on tropical cyclone Pam that occurred in the South Pacific Ocean in March 2015.

Tropical Cyclone Pam

--

Fig. 1b

With reference to Figs. 1 and 1b and your own studies, state the category that tropical cyclone Pam belonged to and describe its characteristics. [4]

(b) Describe the impacts of the tropical cyclone in a coastal area. [5]

(c) Study Fig. 2, which shows the amount of precipitation in India. [4]

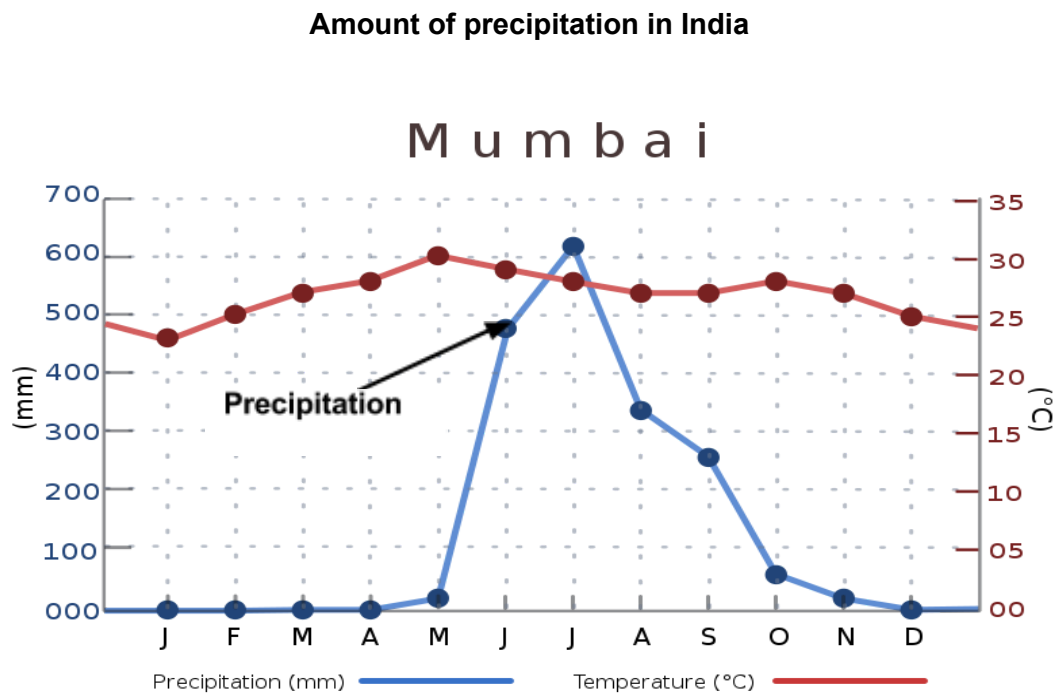


Fig. 2

Describe and account for the distribution of precipitation in India. [4]

- (d) Explain how distance from the sea affects the annual temperature of a place in a temperate coastal location. [4]
- (e) How far do you agree that the international agreements are effective in mitigating the impacts of climate change? [8]
- (2a) Study Fig. 3, which shows a sea breeze.

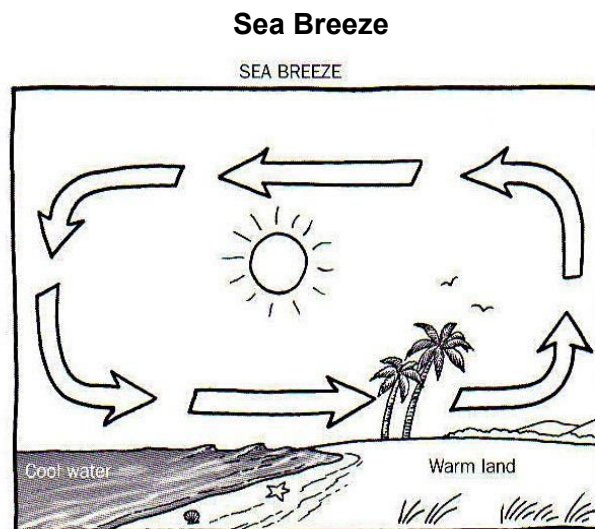


Fig. 3

Using Fig. 3, explain how coastal temperatures are moderated by the sea breeze in the day. [4]

Study Fig. 4, which shows the climograph of a Mangalore, India.

Climograph of Mangalore, India

(b)

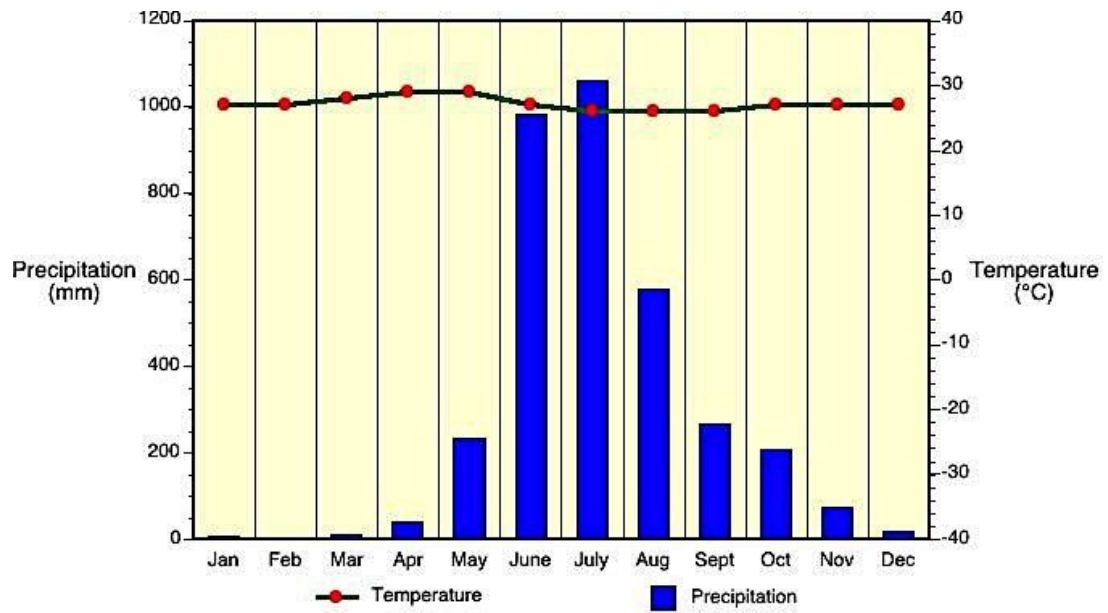


Fig. 4

2(c)

Study Figs. 5a and 5b, which shows the profile of a volcano before and after an eruption.

Profile of a volcano before an eruption



Figure 5a

Profile of a volcano after an eruption



Figure 5b

- (i) Identify the type of volcano shown in Figs. 5a and 5b and give reasons for your answer. [3]

- (ii) With the aid of a labelled diagram, describe the formation of a volcano. [6]

- (c) "We can never be fully prepared for an earthquake." Explain your answer with the use of relevant examples. [8]

Section B

Answer **one** question from this section.

- 3(a) Comment on the usefulness of daily calorie intake as an indicator of health for a country. [4]
- (b) Study Fig. 6 which shows how some people in the Less Developed Countries attempt to overcome inadequate food supply.



Fig. 6

With reference to Fig. 6, suggest the social and health concerns of food scavenging.

[4]

- (c) Fig. 7 shows agricultural Production Index (PIN) per capita between 1950 and 2002.

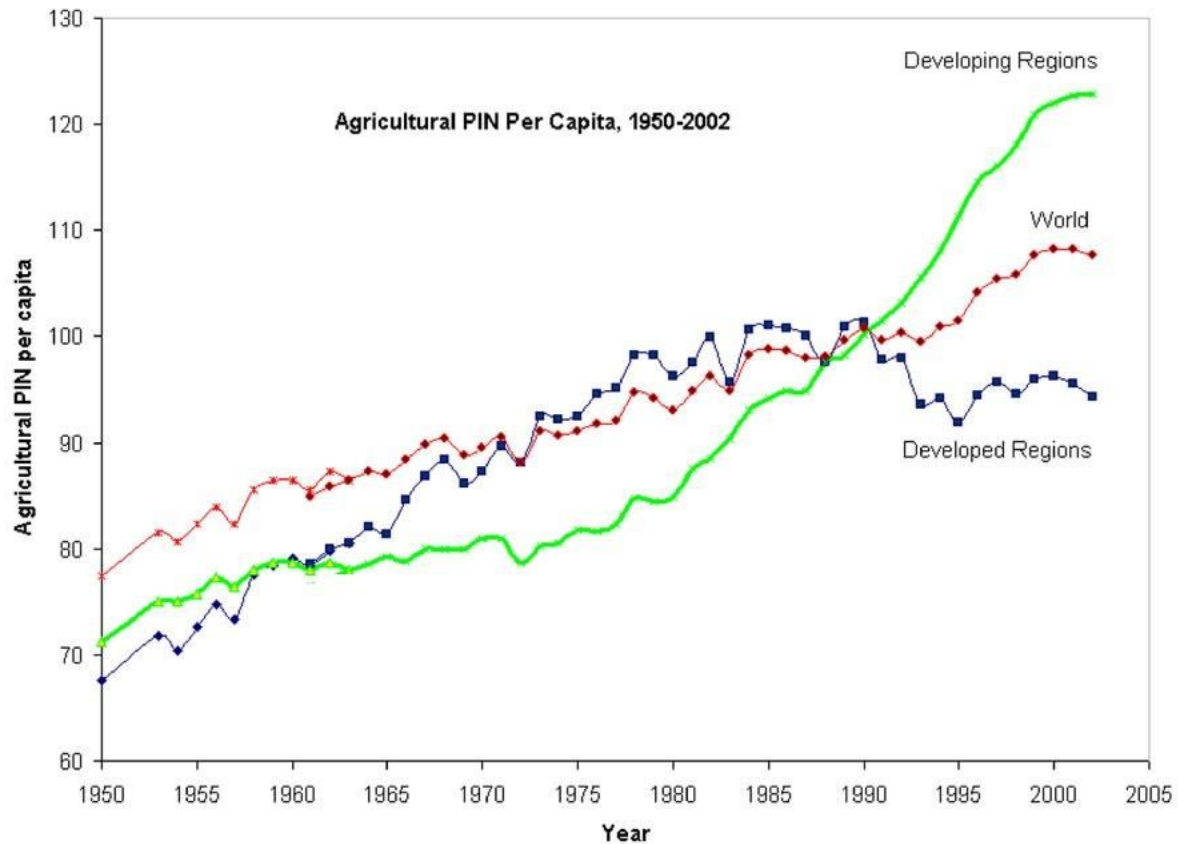


Fig. 7

- (i) Describe the trend in agricultural Production Index (PIN) per capita between 1950 and 2002 as shown in Fig. 7. [4]
- (ii) Explain how economic factors could affect food production [5]
- (d) Assess the effectiveness of international strategies to address food shortages. Explain your answer with the aid of examples. [8]

4(a) Study Fig. 8, which shows a slum area in India.

A slum area

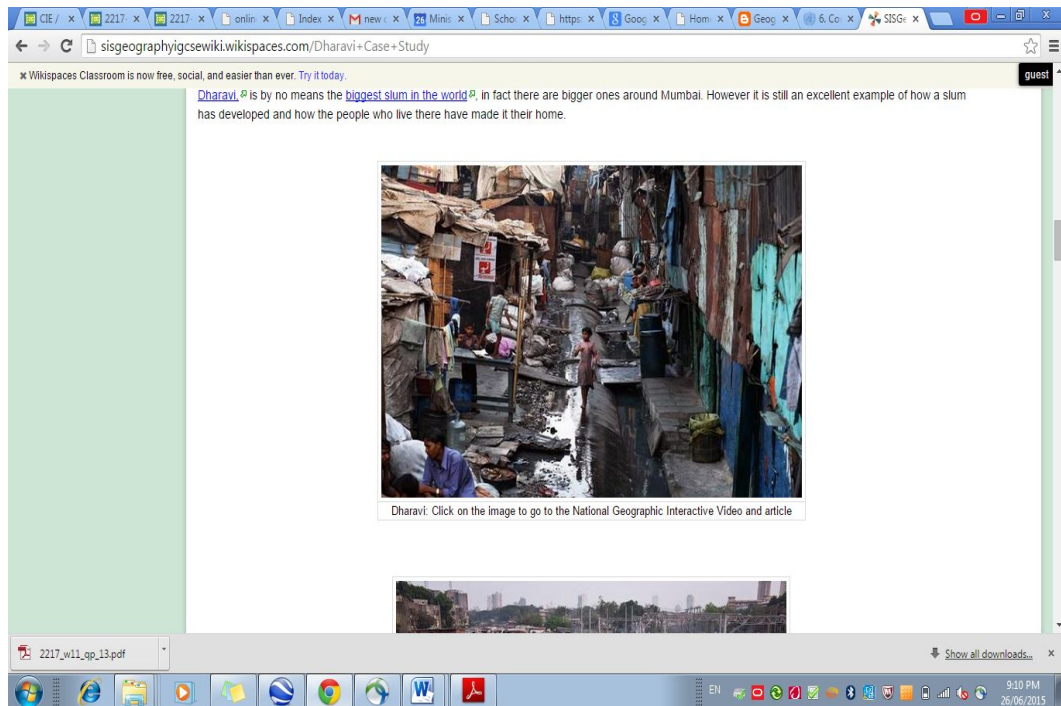


Fig. 8

With reference to Fig. 8, explain how the conditions in a slum lead to the spread of malaria. [4]

(b) Study Fig. 9, which shows information on malaria.

Information on Malaria

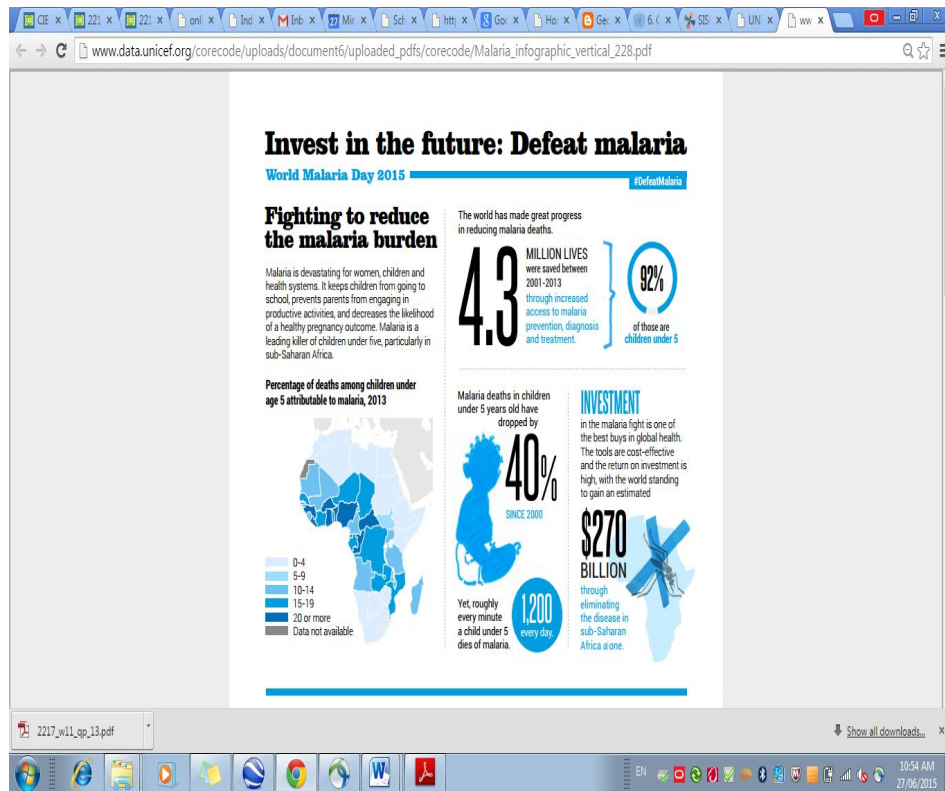


Fig. 9

With reference to Fig. 9 and your own studies, describe the impacts of malaria on the people and the country. [5]

- (c) Study Fig. 10, which shows information on 2 factors that will contribute to the spread of HIV/AIDS.

Factors that contribute to the spread of HIV/AIDS



Fig. 10

With reference to Fig. 10 , account for the 2 factors that will contribute to the spread of HIV/AIDS.

[4]

(d) Describe the economic challenges in managing the spread of HIV/AIDS [4]

(e) To what extent are the governments more effective than non-governmental organisations in managing the spread of infectious diseases. [8]



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GEOGRAPHY 2236/2

Sec 4 Express

COVER SHEET

Name: _____ ()

CLASS: _____

QUESTION	MARKS	COMMENTS
Section A		
Question No. _____		
Section B		
Question No. _____		
TOTAL		



ST. MARGARET'S SECONDARY SCHOOL

Preliminary Examinations 2015

CANDIDATE NAME

ANSWER SCHEME

CLASS

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REGISTER NUMBER

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GEOGRAPHY

2236/02

Paper 2

25 August 2015

Secondary 4 Express

1 hour 30 minutes

Additional Materials:

READ THESE INSTRUCTIONS FIRST

Do not open this Booklet until you are told to do so.

Write your Name, Class and Index number on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

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

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

Section A

Answer **ONE** question.

Section B

Answer **ONE** question.

Write all answers on the writing paper provided.

Candidates should support their answers with the use of relevant examples.

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

Begin your answer to each question on a fresh piece of paper.

At the end of the examination, fasten all your work securely together.

At the end of the examination, fasten all your work securely together.

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

This document consists of 27 printed pages

Section A

Answer **one** question from this section.

- (a) Study Fig. 1a, which shows a scale used to measure the intensity of tropical storms.

Scale to measure the intensity of tropical storms

Category	Central pressure (mb)	Wind velocity (km/hour)	Storm surge (metres)	Damage
1	More than 980	119-153	1.2-1.5	Minimal
2	965-980	154-177	1.6-2.4	Moderate
3	945-964	178-209	2.5-3.6	Extensive
4	920-944	210-248	3.7-5.5	Extreme
5	Less than 920	More than 248	Over 5.5	Catastrophic

Fig. 1a

Study Fig. 1b, which shows information on tropical cyclone Pam that occurred in the South Pacific Ocean in March 2015.

Tropical Cyclone Pam

--

Fig. 1b

With reference to Figs. 1 and 1b and your own studies, state the category that tropical cyclone Pam belonged to and describe its characteristics. [4]

Any four	
Grade 4 cyclone with tropical cyclone that is of high intensity	1
produces fast winds that reached 230km per hour that affected people in Vanuatu	1
is located over the South Pacific Ocean	1
brings devastation to coastal regions such as flash floods and landslide	1
producing a storm surge between 3.7 to 5.5m	1

(b) Describe the impacts of the tropical cyclone in a coastal area. [5]

• Storm surge is a sudden rise of the sea level in which water is piled up against a coastline beyond the normal conditions at high tide caused by the intense low pressure in the eye of the cyclone which causes the sea level to rise. The huge waves are the storm surge.	1
• Wind damage. The winds can cause loose debris to fly and hit people and buildings. The impact of strong winds affect a much larger area than storm surges.	1
• Torrential rain that will cause flash or costal floods. The sudden and large amount of rainfall adds to the flow of water in rivers and streams and cause them to overflow.	1
• Torrential rain can also destabilize slopes when there is too much water in the soil. The excess water in the soil causes the soil to be unstable and may lead to a landslide. Landslides can entirely remove or crush buildings.	1

- (c) Study Fig. 2, which shows the amount of precipitation in India.

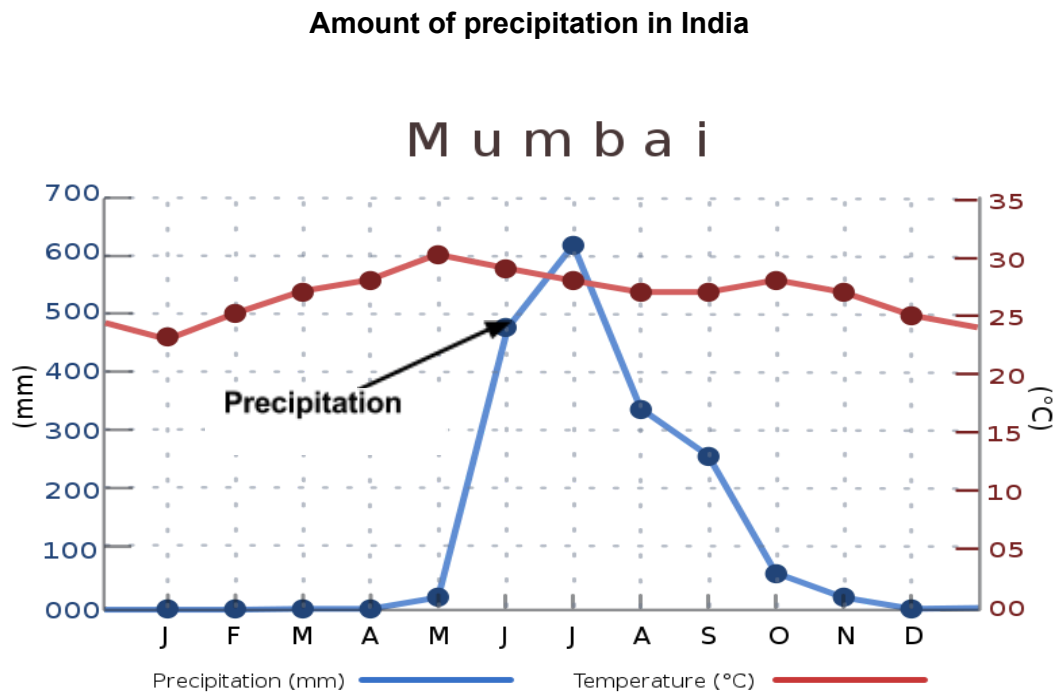


Fig. 2

Describe and account for the distribution of precipitation in India.

[4]

The distribution of precipitation is a dry season from October to March and the precipitation from March to peak at 620mm in July before the precipitation decreases to about 50mm in October.	1
The wet season is in June to September due to the difference in pressure between Central Asia and Australia, air moves from the high pressure region in Australia to the low pressure region Indian sub-continent and Central Asia as the SE monsoon.	1
As the winds cross the Equator, the Coriolis effect deflects the wind to the right to become the SW monsoon wind	1
that picks up the water vapour as it travels over the Indian Ocean and bring heavy rain to the Indian sub-continent.	1

- (d) Explain how distance from the sea affects the annual temperature of a place in a temperate coastal location.

[4]

The sea heats up and cools down more slowly than the land./ The land heats up and cools down faster than the sea.	1
Maritime effect is the effect that large ocean bodies have on the climate of coastal areas.	1

Continental effect is the effect that continental surfaces have on the climate of inland areas.	1
Continental effect causes inland areas to have higher temperature range./ Maritime effect causes coastal areas to have higher temperatures./ The difference in the rate of heating and cooling of the sea and land affects the temperature of coastal and inland areas.	1

- (e) How far do you agree that the international agreements are effective in mitigating the impacts of climate change? [8]

Level 1 (Basic) (1-3 marks)

Describes briefly how Kyoto Protocol/Copenhagen Conference is effective in mitigating the impacts of climate change

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

No example or generic information.

Level 2 (4-6 marks)

Clear elaboration of how the Kyoto Protocol/Copenhagen Conference is effective in mitigating the impacts of climate change with reference to detailed examples

Statements are linked

Knowledge of accurate information

Clear understanding

Use of specialist terms where appropriate

Higher mark for the effectiveness of both the Kyoto Protocol and Copenhagen Conference in mitigating the impacts of climate change with reference to examples

Level 3 (7-8 marks)

Clear elaboration of the effectiveness of both the Kyoto Protocol and Copenhagen Conference in mitigating the impacts of climate change with reference to detailed examples

Attempt at a conclusion (without repetition), conclusion is written with own opinion

Statements are linked

Knowledge of accurate information, detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the interrelationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well-structured responses

Description of international agreements

- Kyoto Protocol
 - The Kyoto Protocol is an agreement linked to the UNFCCC (United Nations Framework on Climate Change), which is an international convention set up with the goal of reducing the levels of greenhouse gases in the atmosphere
 - Many countries came together to sign the Kyoto Protocol to come up with measures to address climate change and put them into practice.
 - The Kyoto Protocol was drawn up in 1997 and came into force in 2005.
- Copenhagen Accord:
 - The Copenhagen Accord is an international agreement signed at the Copenhagen Conference in 2009.

- o The conference was held to improve on the measures developed by the Kyoto Protocol to deal with the issue of climate change

Success in meeting targets / setting targets

- Targets for the reduction of greenhouse gases were successfully set, or many countries have met or exceeded targets set by the international agreements.
- In the Kyoto Protocol, various targets to reduce greenhouse emissions were set for participating countries (with greater responsibility on developed and European countries)
- From 2008 to 2012, countries were obligated to reduce their combined greenhouse gas emissions by at least 5 per cent below 1990 levels.
- Countries were required to monitor and report their greenhouse gas emissions, helping to ensure that they were on track in keeping to their emission targets.
- In the Kyoto Protocol, countries such as Austria, Finland, Greece and Spain met targets.
- In the Copenhagen Conference, targets for the reduction of greenhouse gas emissions were successfully set.
- Developed countries committed to reducing greenhouse gas emissions by various amounts by 2020.
- In the Copenhagen Accord, developed countries agreed to provide a total of US\$30 billion to less developed countries for the period between 2010 and 2012, and provide long-term financial aid of US\$100 billion a year by 2020. These funds will help less developed countries reduce their greenhouse gas emissions.

Success in encouraging sustainable development

- International agreements have been successful in encouraging sustainable development – ensuring that human development will not worsen the problem of climate change.
- In the Kyoto Protocol, the Clean Development Mechanism (CDM) gave Certified Emission Reduction (CER) credits to countries which carried out emission-reduction projects (e.g. installing energy-efficient infrastructure) in less developed countries.
- This helped developed countries reduce their greenhouse gas emissions when they take on emission-reduction projects in less developed countries.

Success in bringing together political figures to address issue of climate change effectively

- International agreements have achieved success in bringing together political figures to address issue of climate change effectively
- The Copenhagen Conference successfully brought together a group of important political figures to discuss the measures that will address the issue of climate change effectively.
- The Copenhagen Accord, drawn up during the conference, is an international agreement with the long-term goal of keeping any increases in the global mean maximum temperature to within 2 degrees Celsius of the global temperatures before 1850.

However, many countries still have not achieved targets or the targets are insufficient to reduce emissions

- Countries have not always managed to set sufficient targets or achieve their targets in international agreements.
- The Kyoto Protocol does not make it compulsory for countries with low greenhouse gas emissions to provide support to other countries.

- Countries with low greenhouse gas emissions do not have to provide energy-efficient technology to countries with high greenhouse gas emissions.
- Hence, countries with high greenhouse gas emissions may not be able to achieve their emission targets as easily
- In addition, targets set by the Copenhagen Accord are insufficient to attain the aim of reducing emissions to within 2 degrees Celsius of the temperatures before 1850.
- Moreover, there was no agreement made on how the reduction of greenhouse gases is to be carried out, making it difficult for countries to take any action.
- Countries such as Denmark, Sweden and the United Kingdom did not achieve their targets.

Limited impacts on global greenhouse gas emissions

- Countries may not sign or commit to the agreement, while targets are also a guideline rather than a condition that must be fulfilled
- International agreements have had limited impacts as well on greenhouse gas emissions
- Countries which did not sign the Kyoto Protocol continued to contribute significantly to global emissions
- Many developed countries have refused to sign the Copenhagen Accord; hence the accord is not legally binding.
- The targets set by various countries to reduce the emission of greenhouse gases were a guideline (not legally binding) rather than a condition to be fulfilled. Thus, many countries did not keep to their targets
- Since 1997, global emissions have increased by 35%
- A large proportion of the increase came from China, India and the USA.

Conclusion

Overall, international agreements appear important as they call many countries to action on the issue of climate change. However, they face significant problems in the unfulfilled and insufficient targets, and the lack of legally binding agreements. This severely weakens the effectiveness of such agreements. Hence, international agreements have contributed little to reducing greenhouse gas emissions that are badly required to tackle the problem. The extent of the effect of such agreements are thus limited, and they do not solve the problem of climate change.

(2a) Study Fig. 3, which shows a sea breeze.

Sea Breeze

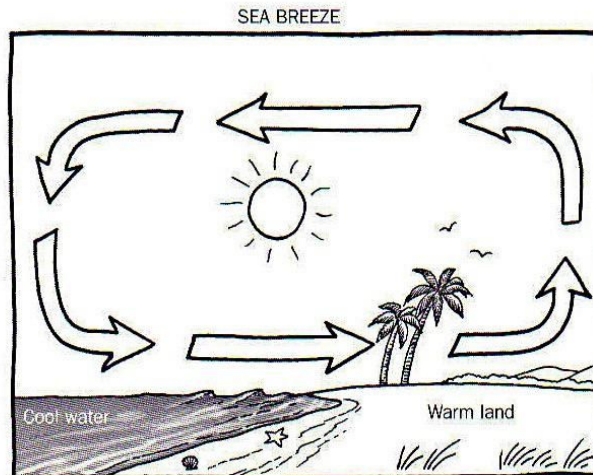


Fig. 3

Using Fig. 3, explain how coastal temperatures are moderated by the sea breeze in the day. [4]

Sea breeze and land breeze will bring about a smaller diurnal temperature range. (compulsory)	1
Sea breeze is wind that blows from the sea to the land and the breeze is blowing from the cooler sea so it brings the cooler air from the sea	1
During the day, the land heats up faster than the sea.	1
As a result, the air pressure over the land is lower than the sea.	1
Since air moves from an area of high pressure to an area of low pressure, warmer wind blows from the sea to the land during the day to form a sea breeze	1
When wind blows, it also helps to transfer heat from a lower air pressure region to a higher air pressure region. (compulsory)	1
[2 compulsory points and 2 other points – 4m]	

Study Fig. 4, which shows the climograph of a Mangalore, India.

(b)

Climograph of Mangalore, India

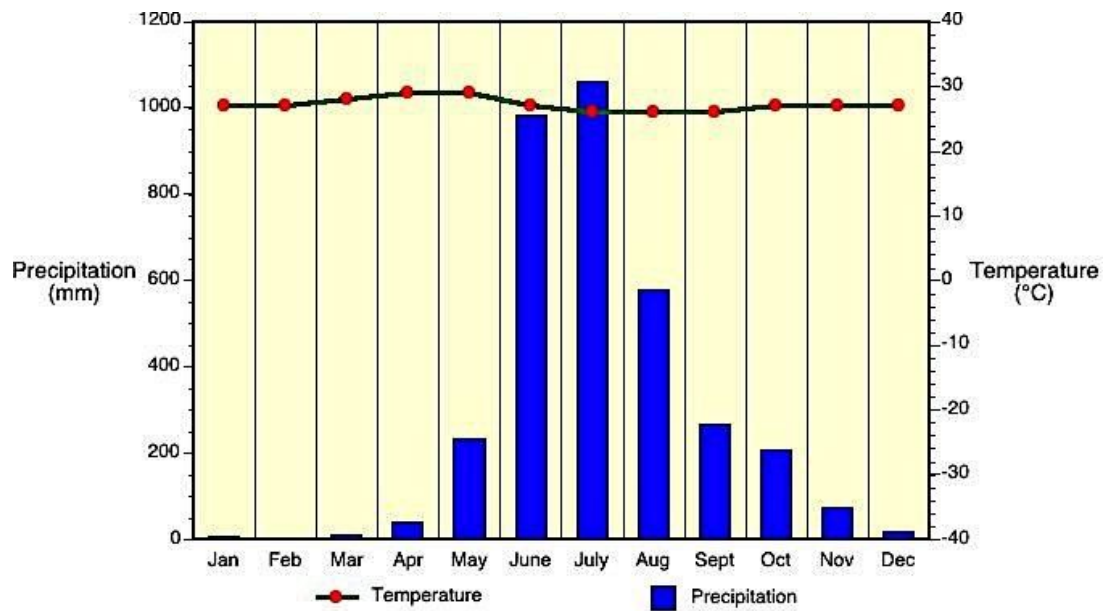


Fig. 4

Identify the climate type shown in Fig. 4 and give reasons for your answer. [4]

• Monsoon climate	1
• High average temperature (>25°C)	1
• Distinct wet and dry seasons	1
• High rainfall (>2000 mm)	1
• Small temperature range (around 6°C)	

- 2(c)** Study Figs. 5a and 5b, which shows the profile of a volcano before and after an eruption.

Profile of a volcano before an eruption



Figure 5a

Profile of a volcano after an eruption



Figure 5b

- (i) Identify the type of volcano shown in Figs. 5a and 5b and give reasons for your answer [3]

• Stratovolcano	1
And any 2 points below:	1
• Steep-sides/narrow-summit	1
• Explosive gases and rocks	1
• Crater blown off	

- (ii) With the aid of a labelled diagram, describe the formation of a volcano. [6]

Diagram (two labels – 1m):	3
• Cone	
• Lava	
• Ash and rock fragments	
• Crater	
• Pipe	
• Vent	
• Magma chamber	
• Magma from the magma chamber rises to the surface through the vent as lava.	1
• Lava builds up around the vent, solidifying to form a volcano. New eruption of lava builds up the volcano.	1
	1

• Volcanoes can be found at convergent oceanic-oceanic, convergent oceanic-continental boundaries where there is subduction and at divergent boundaries.	
--	--

- (c) “We can never be fully prepared for an earthquake.” Explain your answer with the use of relevant examples.

[8]

Candidates at each level will show the following characteristics:

Level 1 [1 – 3 marks]

- At this level answers will be generalized or with minimal support if any stand were given at all.
- Reasoning rather weak and expression may be unclear.
- A basic answer that has little development.

Level 2 [4 – 6 marks]

- Both success and limitations are considered, but support is patchy so that the answer is not full.
- Higher mark for examples given.
- Good reasoning and logic in parts of the answer with good expression in places.

Level 3 [7 – 8 marks]

- At this level answers will be supported by sound knowledge.
- Both success and limitations are considered and well supported.
- Reasoning is clear and logical with good expression of language.
- Meaningful conclusion

Candidates may include the following material:

Even though people are not able to prevent earthquakes, they are able to implement measures that would prepare them and respond to the impacts of earthquakes.

Preparedness Measures

Emergency drills

A form of preparedness measure where people practice the steps to take when an earthquake occurs. This creates awareness among the population and reduces levels of panic and irrational behaviour during an event. People take part in emergency drills by moving to safe locations, listening to instructions given by trained personnel and practising first aid. Every year since 1960, Japan conducts emergency drills on 1 September to commemorate Disaster Prevention Day. People from all over Japan are involved in the annual Disaster Prevention Day, where an earthquake of high magnitude is simulated. The intention is to prepare the people mentally on how to react to a disaster. Main roads are blocked to create the possible road conditions in the event of an earthquake. Emergency vehicles have to then seek alternative routes to reach affected areas.

However, emergency drills are often designed based on the most serious earthquake ever recorded in the area in the past. As the earthquake that occurred

in Tohoku, Japan, in 2011 was on a scale never experienced before in Japan, emergency drills and evacuation plans were inadequate to prevent the devastation of the areas affected by the earthquake. Moreover, emergency procedures are only effective if there is enough time for people to evacuate. Often, there is insufficient time for evacuation as earthquakes are hard to predict.

Technological devices

Monitoring and warning systems allow scientists to warn people of potential hazards so that they can evacuate. Studying the history of when and where earthquakes have occurred can monitor earthquakes. This provides an estimation of the frequency and magnitude of earthquakes at particular fault lines. In this way, earthquakes can be predicted.

Seismic maps, which show the likelihood of locations at risk from earth movements or liquefaction, are produced from such studies. However, these studies can only give a general indication of the frequency and magnitude of earthquakes. The maps do not provide precise information about the time, location and magnitude of future earthquakes.

Installing earthquake sensors in earthquake-prone zones helps monitor the frequency of vibrations and detect possible developments of an earthquake. Earthquake motion data is gathered from hundreds of observation stations installed on bridges and roads in Japan. These stations monitor ground motion and enable the occurrence of an earthquake to be predicted. Earthquake sensors are also used to quickly estimate damage to bridges, railways and other infrastructure.

However, monitoring and warning systems have the following limitations:

- Earthquake sensors are expensive to obtain, install and LDCs might not be able to afford them
- An earthquake usually occurs seconds after any warning is sounded and thus warnings may not provide sufficient time for an evacuation
- Noise, lighting or device failure may interfere with the seismograph and result in false warnings being given
- It is difficult to give accurate warnings when multiple earthquakes occur close to each other.

Building design

Effective building design can reduce the collapse of buildings and minimise the damage caused by an earthquake.

- Steel and reinforced concrete are able to withstand earthquakes better than more brittle materials such as non-reinforced concrete. Taipei 101, a building in Taiwan, is made of steel and reinforced concrete.
- Damping devices act as shock absorbers for some of the seismic energy released during an earthquake. Damping devices also act as counterweights, which move in the direction opposite to the motion of an earthquake. They prevent a building from swaying too much and collapsing. A damping device was installed in Taipei 101.

- | | |
|--|--|
| <ul style="list-style-type: none"> • Constructing buildings with wide and heavy bases decrease the likelihood of these buildings from collapsing. For example, heavy metal bars reinforce the foundation of Taipei 101. | |
|--|--|

Base isolation bearings made of rubber or cushion can be placed between the ground and the building. These bearings act as a buffer to prevent the building from shaking too much during an earthquake. When an earthquake occurs, base isolation bearings absorb the force of the earthquake and reduce the movement of the building. For example, lead rubber bearings are used at the Sabiha Gokcen Airport in Istanbul. However, constructing buildings that can withstand potential earthquakes adds to the cost of construction and maintenance of buildings. It may also be expensive to convert existing buildings to include earthquake-resistant features. If the conversion is too expensive, buildings would be demolished and rebuilt. This was a policy adopted by the local government of Beijing, China, in 2011.	
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Infrastructure development

Infrastructure needs to be developed with advanced engineering to withstand the vibration associated with an earthquake. This includes

- Roads and bridges and dams can be built to resist the shaking of the ground so that they do not collapse, or can be easily repaired if they collapse.
- Homes, office buildings and factories can be fitted with trip switches that ensure all electrical points are switched off in the event of an earthquake. This measure prevents fires from breaking out. In Japan, machines in many factories automatically shut down when they sense earthquake vibrations.
- Large underground water tanks are emergency reservoirs for possible fire fighting after an earthquake. Underground water tanks are found in Tokyo, Kyoto and Kobe in Japan.
- Adherence to strict building codes which specify the minimum acceptable level of safety for infrastructure such as houses.

Developing infrastructure to resist earthquakes is more costly. Although reinforced infrastructure remains untested until an earthquake occurs, past earthquake events in Chile, Japan and California have demonstrated the benefits of reinforced infrastructure. These benefits include fewer lives lost, faster rescue and evacuations, and less money spent on recovery for the affected areas.

Land use

Land use regulations are a set of rules implemented to restrict developments in certain areas. For example, in California, United States of America, all new building developments are not built across fault lines or areas at risk of liquefaction. Liquefaction occurs when vibrations from an earthquake cause saturated soil to flow like liquid. The ground becomes unstable and buildings should not be constructed in areas where it is unsafe.

Another land use regulation is the prohibition of constructing new buildings on low-lying land, which are vulnerable to tsunamis. Developments may be allowed only when protective barriers such as seawalls facing the ocean are constructed. These

regulations are commonly implemented along the coasts of Japan and North America where the Pacific Ring is located.

Conclusion (Factors affecting the intensity/extent of the impact)

Eg. With that being said, even though preparedness measures may be put in place and carried out to try and lessen the impacts of an earthquake, should the earthquake be of high magnitude or the distance from the epicentre be small or the earthquake happen in the middle of the night or there be loose and unconsolidated sediments, there will still be extensive damage. Yet it is still necessary for these measures to be in place as well as have swift responses be implemented to provide survivors with the basic necessities of food, shelter and water when an earthquake strikes.

Section B

Answer **one** question from this section.

3(a) Comment on the usefulness of daily calorie intake as an indicator of health for a country. [4]

• Energy from food is used for many different functions such as repairing cells and fighting diseases.	1
• A low calorie could indicate starvation or malnutrition which could mean that the citizens of the country are more prone to illnesses	1
	1

• A high calorie intake, on the other hand, does not mean that the population is healthier as excessive calorie intake could cause weight gain • which is associated with other health issues such as diabetes and heart diseases. • Furthermore, the amount of calories required by an individual varies according to the age, gender and type of daily activities and individual is involved and as such, • the optimum amount needed varies depending on the profile of the citizens.	1
	1
	1
[Any 4 points]	

- (b) Study Fig. 6 which shows how some people in the Less Developed Countries attempt to overcome inadequate food supply.



Fig. 6

With reference to Fig. 6, suggest the social and health concerns of food scavenging.

[4]

Social Concerns:	
• The food scavengers may face discrimination, social exclusion and may even be abused or harassed as they are perceived as a nuisance to the public	1
• They may be in dangerous or illegal situations when they trespass into private property or prohibited areas in search of food.	1
Health Concerns:	
• Food picked up in rubbish dumps could have been contaminated by bacteria and may cause the consumer to fall sick.	1
	1

- | | |
|--|--|
| <ul style="list-style-type: none">• There also face other health risks as they could consume food which have been poisoned due to contact with heavy metals such as mercury and lead from the rubbish. | |
|--|--|

- (c) Fig. 7 shows agricultural Production Index (PIN) per capita between 1950 and 2002.

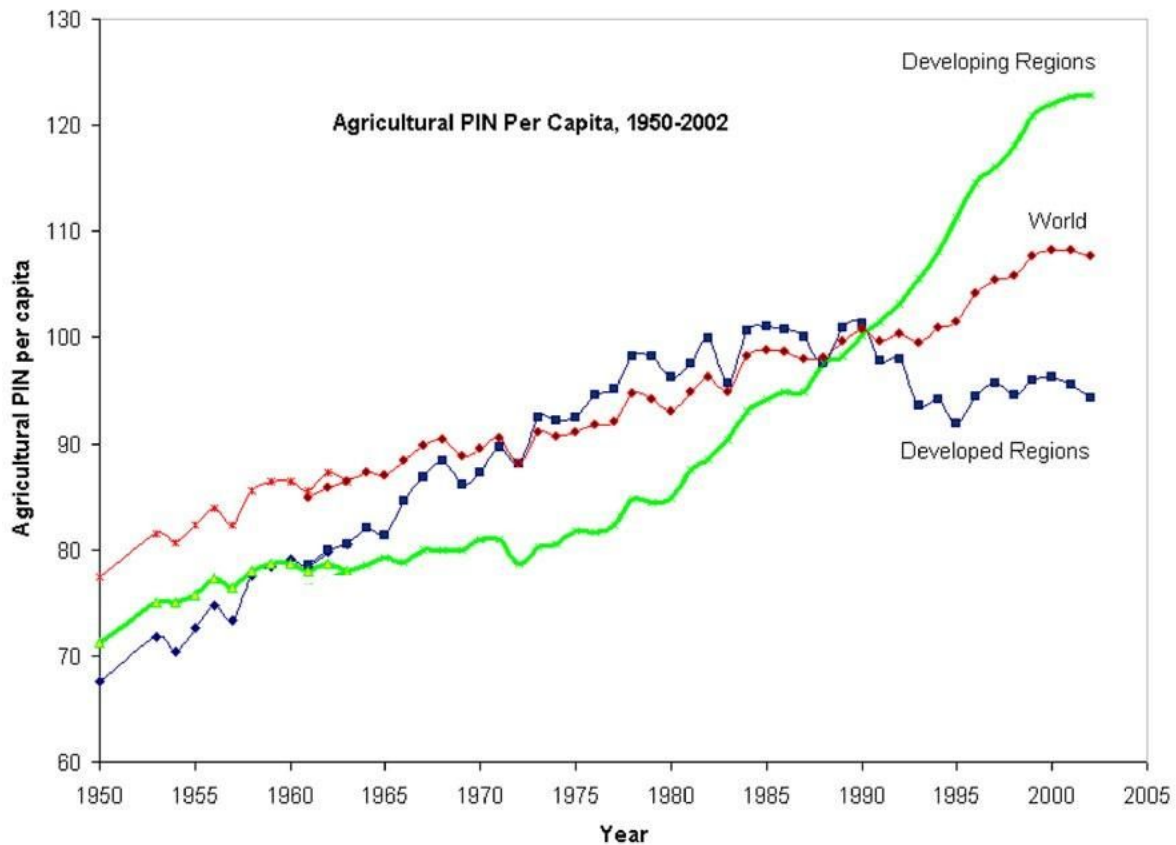


Fig. 7

- (i) Describe the trend in agricultural Production Index (PIN) per capita between 1950 and 2002 as shown in Fig. 7. [4]

• Agricultural PIN for the world has generally been increasing from around 78 units in 1950 to around 109 units in 2002.	1
• Rapid increase in Agricultural PIN in developing countries, especially between 1972 and 2000.	1
• Agricultural PIN increased irregularly between 1950 to 1990 but started to decrease between 1990 and 1995.	1
• It increased unsteadily again subsequently but the increase never reached the PIN recorded in 1990.	1
*Accept other significant trends highlighted.	

(ii) Explain how economic factors could affect food production

[5]

Subsistence Farming – when subsistence agriculture is carried out, the output is likely smaller than commercial agriculture as the farmer is interested only in growing sufficient food for the family and is likely to use simple farming tools which are less efficient	1
Demand – When there is a demand for a particular crop, farmers will intensify the cultivation of the crop as farmers would like to maximise profits. Resources such as land may be directed into the cultivation of the crop in demand	1
Trade – when free trade is practiced, farmers may switch to the cultivation of selected crops for export thus increasing the production of these selected crops. (1) Local farmers may, however, be discouraged from cultivating crops as they are not able to compete with competitively priced exports thus leading to lower food production among local farmers.	1
Agribusiness – Agribusiness has a strong focus on research and development of food crops which may lead to greater productivity.	1
Agribusinesses are also more resilient and are able to continue cultivation through set-back such as floods or diseases that destroy food crops compared to small scale farmers and this contribute to a stable food production.	1
*Any 5 points.	

(d) Assess the effectiveness of international strategies to address food shortages. Explain your answer with the aid of examples.

[8]

Candidates at each level will show the following characteristics:	
Level 1 [1 – 3 marks] - At this level answers will be generalized or with minimal support if any stand were given at all. - Reasoning rather weak and expression may be unclear. - A basic answer that has little development.	
Level 2 [4 – 6 marks] - Both success and limitations are considered, but support is patchy so that the answer is not full. - Higher mark for examples given. - Good reasoning and logic in parts of the answer with good expression in places.	
Level 3 [7 – 8 marks] - At this level answers will be supported by sound knowledge. - Both success and limitations are considered and well supported. - Reasoning is clear and logical with good expression of language.	

Meaningful conclusion	
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International Strategies

	Strategy	Description	Successes	Limitations
U n i t e d N a t i o n s W o r l d F o o d P r o g r a m m e (U N W F P)	Responding to Emergencies	Provision of emergency food assistance during wars and natural disasters	Food was successfully delivered to 99.5% of targeted recipients during the 2011 Sudan food crisis	During such emergencies, food prices may be inflated, which results in high cost for the UNWFP. The extent of its assistance is also limited by how much funds they receive from donors.
	Cash and Voucher Scheme	Distribution of cash and vouchers in places where food is available but people are unable to afford it.	Cash and vouchers benefit the local economy because beneficiaries spend money in local market.	Over time, this may create a culture of dependency among beneficiaries.
	School Meals	Provision of school meals to provide nutrient for school children.	School feeding provides an incentive for enrolment and attendance and can help children learn more effectively.	The coverage of these programmes is uneven across countries. In low-income countries, only 18% of children receive a daily meal at school compared to nearly 49% of children in middle income countries.

W o r l d B a n k	Global Agriculture and Food Security Programme (GAFSP) (2010)	GAFSP provides financing to countries that need help in increasing agricultural productivity. GAFSP also provides assistance To improve food security in specific countries and regions.	GAFSP has helped 7.5 million people in 12 countries such as Togo, Rwanda and Nepal. In Rwanda, the GAFSP funded a project in 2010 to reduce soil erosion and improve productivity in hillside agriculture. This has increased potato yields by seven times and cereal yield by four times. In Togo, GAFSP projects have helped farmers increase corn and cassava productions.	As the GAFSP relies on funds from donors, these donors may influence how the funds are used to their advantage. The extent of its assistance may also be limited by how much funds they receive from donors.
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4(a) Study Fig. 8, which shows a slum area in India.

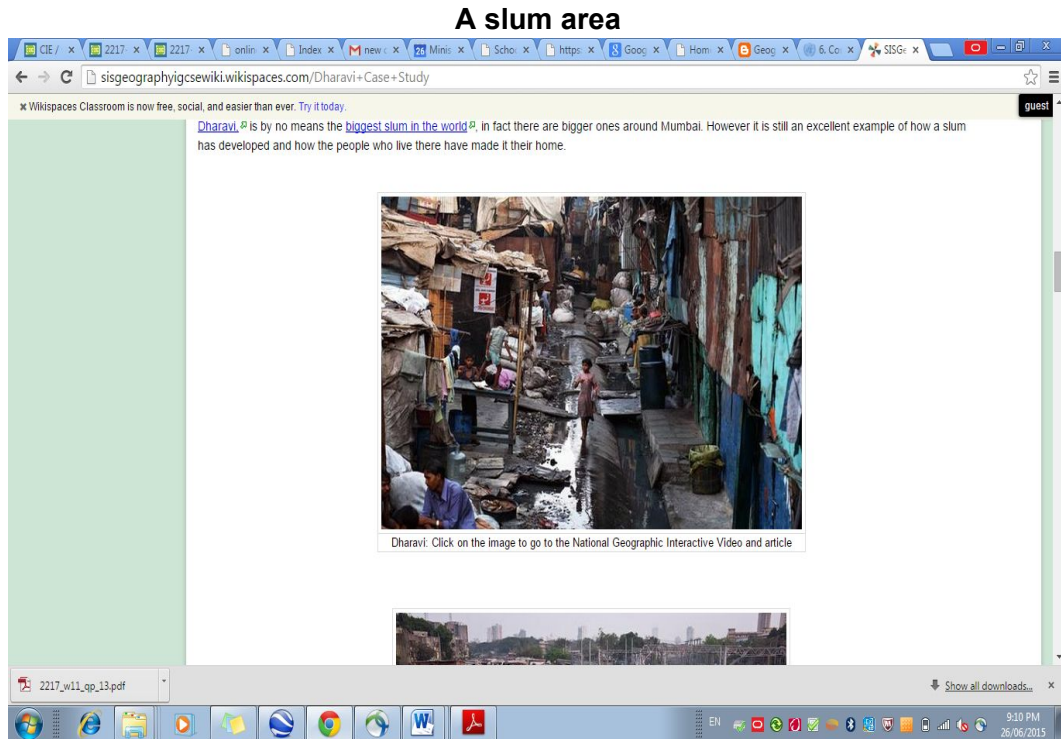


Fig. 8

With reference to Fig. 8, explain how the conditions in a slum lead to the spread of malaria. [4]

- | | |
|--|---|
| • The poorly secured structures, poor ventilation and overcrowding result in poor health and anybody in poor health would be vulnerable to disease attack. | 1 |
| • There is no proper drainage system so there are stagnant pools of waste or sewage water that would form breeding ground of mosquitoes | 1 |
| • There is a lack of materials that would shelter the residents from the mosquito | 1 |
| • Overcrowding in slum settlements means that mosquitoes can go easily from one person to another thus causing to the spread of malaria. | 1 |

(b) Study Fig. 9, which shows information on malaria.

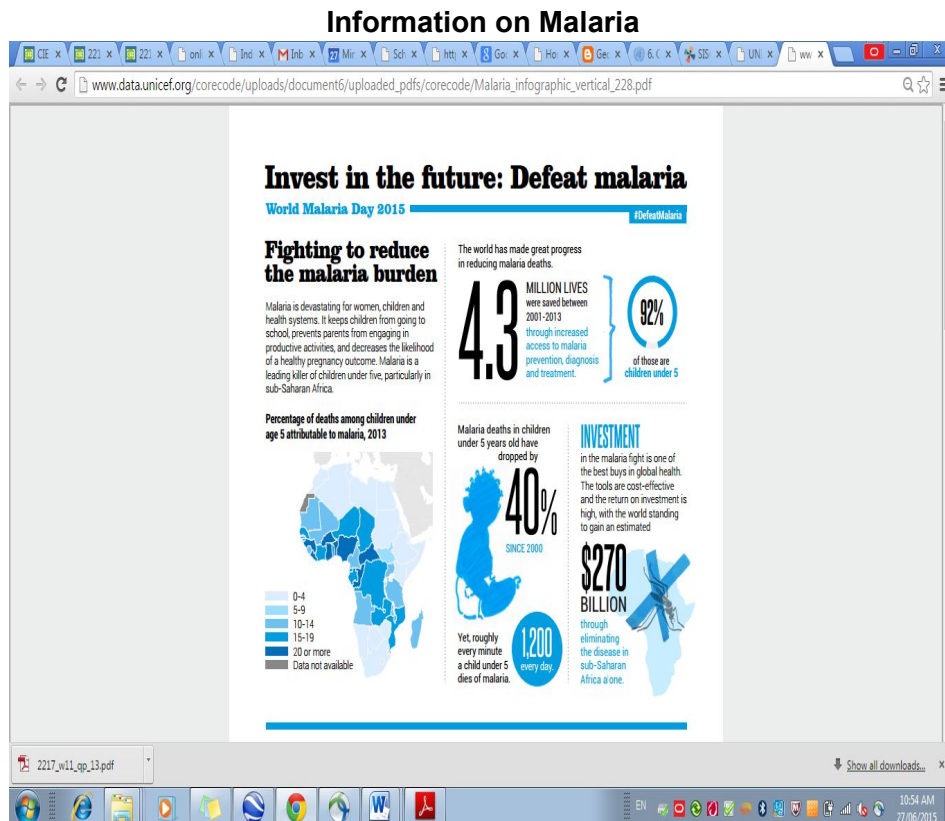


Fig. 9

With reference to Fig. 9 and your own studies, describe the impacts of malaria on the people and the country. [5]

<u>Impacts on the people</u>	
• High infant mortality rate as women who contracted malaria during pregnancy may infect the unborn child.	1
• Increase in death among children under 5 years old	1
<u>Impacts on the country</u>	
• Countries affected by malaria would need to set aside funds for the provision of health care to address the disease. The funds are for the building maintenance and investments in hospitals and clinics, and the purchase of medication and insecticide-treated nets.	1

● People infected with malaria might not be able to work due to their poor health and this results in loss of productivity for the workforce. Lower productivity results in slower economic growth. 1m for quoting figures to support answers.	1
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- (c) Study Fig. 10, which shows information on 2 factors that will contribute to the spread of HIV/AIDS.

Factors that contribute to the spread of HIV/AIDS



Fig. 10

With reference to Fig. 10 , account for the 2 factors that will contribute to the spread of HIV/AIDS.

[4]

● <u>Increase in mobility</u> will result in men who move to cities or mining areas in search of work often leave behind their families. They are separated from their families and may feel socially excluded.	1
● They may also get involved in risk-taking behaviours and put themselves at risk of being infected with HIV.	1
● <u>Lifestyle choice</u> such as drug injection or sharing needles will increase one's risk of being infected with HIV/AIDS. Drug abuse can put a person at risk of being infected with HIV/AIDS.	1
● Drug and alcohol intoxication affect judgement and can lead to unsafe sexual practices, which put people at risk for getting HIV or transmitting it to someone else.	1

(d) Describe the economic challenges in managing the spread of HIV/AIDS. [4]

• In some LDCs, the low education level, especially among women means that they usually can only find employment in jobs with low pay and no job security.	1
• They often resort to commercial sex work due to their lack of viable options. This causes them to be more vulnerable to HIV/AIDS.	1
• The development of modern transportation and tourism industry contribute to the spread of HIV/AIDS. This is because the development of airline transportation helped the disease to spread in a shorter period of time to reach more people and tourists often take risks that they would not take at home.	1
• Health care expenditures on treatment and research to control the spread of HIV/AIDS are very expensive and may not be affordable to LDCs.	1

(e) To what extent are the governments more effective than non-governmental organisations in managing the spread of infectious diseases. [8]

Candidates at each level will show the following characteristics:

Level 1 [1 – 3 marks]

- At this level answers will be generalized or with minimal support if any stand were given at all.
- Reasoning rather weak and expression may be unclear.
- A basic answer that has little development.

Level 2 [4 – 6 marks]

- Both success and limitations are considered, but support is patchy so that the answer is not full.
- Higher mark for examples given.
- Good reasoning and logic in parts of the answer with good expression in places.

Level 3 [7 – 8 marks]

- At this level answers will be supported by sound knowledge.
- Both success and limitations are considered and well supported.
- Reasoning is clear and logical with good expression of language.
- Meaningful conclusion

Government Strategies: Precautionary measures

	Strategy	Description of strategy	Successes	Limitations
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Singapore	Providing vaccinations against H1N1	Vaccinations are a useful way to increase the body's immunity to certain diseases. In 2009, Singapore began providing vaccinations for its population against the H1N1 influenza virus before it emerged in the country. To ensure that Singaporeans ready access to medical assessment and prompt treatment for mild cases of H1N1, more than 400 family clinics island-wide were stocked with H1N1 vaccines.	Most cases of H1N1 infection in Singapore were mild, although up to 18 deaths were reported in 2009. Singapore is in the process of developing its own vaccine for H1N1 flu vaccine has reached the first phase of clinical trials.	Vaccinations take up to two weeks to take effect. Individuals may choose not to receive vaccinations and risk being infected with influenza virus. The waiting period for imported vaccines would take up to 3 months.
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	Strategy	Description of strategy	Successes	Limitations
Thailand	Thermal fogging	Thermal fogging involves the distribution of insecticides by using fog produced by heat. Under the malaria control programme in Thailand, thermal fogging is applied during malaria outbreaks and in uncontrolled transmission areas. In principle, it is applied once a week for 4 consecutive weeks.	Thermal fogging kills adult mosquitoes found outdoors.	Thermal fogging is expensive and must be carried out on a regular basis in order to be effective The thick fog also causes reduced visibility and is a traffic hazard.

Government Strategies: Mitigation measures

	Strategy	Description of strategy	Successes	Limitations
Singapore	Control measures during the SARS outbreak in 2003	Detecting and isolating infected people in a dedicated hospital. A dedicated private ambulance service was	Government intervention to control the spread of the disease was prompt following	Some patients displayed symptoms not commonly associated with SARS. Some

		used to transport people suspected to be infected. Prevented and controlled spread within hospitals by closely monitoring the health of staff and by restricting visitors. Potential patients of the disease were subjected to home quarantine by law.	the early detection of the disease. The WHO medical officials praised Singapore's handling of the outbreak and its prompt and open reporting of cases. They encouraged other countries to learn from Singapore's handling of the SARS outbreak. The WHO medical officials said stringent measures taken by Singapore had contained the spread of the disease.	patients did not show any signs of SARS until much later. As a result, these patients infected people they came in contact with. This made the detection of the disease difficult and the disease harder to contain.
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Government Strategies: Mitigation measures

	Strategy	Description of strategy	Successes	Limitations
Singapore	Singapore's National Environment Agency (NEA)'s approach to vector control	The NEA has a five-pronged approach to vector control, as shown in Figure 3.89a. The NEA launched the 'Do the Mozzie Wipeout' on 28 April 2013 to prevent an outbreak of dengue fever. The campaign includes community outreach to raise awareness on prevention methods. Fig 3.89c shows the 'Colour Alert System', which indicates the	The WHO cited Singapore as a good role model in preventing and managing dengue cases and encouraged other countries to learn from Singapore. The number of cases with more dengue fever has decreased in recent years since the 2005	Most people are unaware or complacent about Aedes mosquitoes breeding at their place of residence. This posed difficulties in preventing the breeding of the mosquitoes. Due to climate change, mosquitoes breed faster at

		seriousness of the dengue situation through colour-coded banners. The colours indicate the corresponding preventive measures to take.	dengue fever outbreak.	higher temperatures. More people had been infected with Den-1, a new dominant virus. The new virus can make a mosquito ready to spread the disease just three to four days after it bites an infected person, compared to the usual seven days. The majority of the population has no immunity against the new virus.
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Non-Government Organisaton strategies: NGOs

	Strategy	Description of strategy	Successes	Limitations
International HIV/AIDS Alliance (HAA)	HIV, Health and Rights: Sustaining Community Action Strategy	The International HIV/AIDS (IHAA) is an innovative alliance of nationally based, independent, civil society organisations. Some of the ways in which the strategy responds to the HIV epidemic include:	Individual countries will take up more ownership in implementing the strategy. There are measurable goals for the Whole Alliance Organisations	The success of the strategy depends on the will of governments to better target their resources and work with civil society in their national HIV responses.

		- Increasing access to HIV and health programmes; - Supporting community-based organisations to be connected and supporting effective elements of health systems; and - Advocating for HIV, health and human rights	that work with IHAA will use this strategy – together with their own national plans – to shape their future strategies	Not all countries have the funds to implement the strategies. It depends on the goodwill of other countries or international organisations to provide funds for them.
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Non-Government Organisation strategies: NGOs

	Strategy	Description of strategy	Successes	Limitations
American Red Cross, United Nations Foundation, US Centres for Disease Control and Prevention (CDC), UNICEF and World Health Organisation (WHO)	Measles and Rubella Initiative (M&RI) since 2011	The M&RI is a global partnership committed to ensuring no child dies from measles or is born with congenital rubella syndrome. The strategy is carried out through: - Providing vaccination with two doses of measles and rubella containing vaccines through routine immunisation and campaigns; - Monitoring disease using effective surveillance and evaluating results to ensure progress; and - Fast response to outbreaks and manage cases	Since 2011, the initiative has supported 80 countries to deliver more than 1.1 billion doses of measles vaccine, helped to raise measles vaccination coverage to 84% globally, and reduced measles deaths by 71%. In the African region, deaths caused by measles decreased by an estimated 85 per cent between 2000 and 2010.	Many LDCs have limited funds to combat measles: hence they were not able to fully cooperate with the American Red Cross in the initiatives. For example, in 2008 and 2009, there was an outbreak of the disease and increase in deaths caused by the disease in the African region. In some cases, measles vaccination campaigns were not carried out routinely every two to four years. The gap in the vaccination caused an outbreak of the disease in the

				African region in 2008.
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COVER SHEET

Name: _____ ()

CLASS: _____

QUESTION	MARKS	COMMENTS
Section A		
Question No. _____		
Section B		
Question No. _____		
TOTAL		