

<b>Name:</b>		<b>Index Number:</b>		<b>Class:</b>	
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## CATHOLIC HIGH SCHOOL

### Preliminary Examination

### Secondary 4 (O-Level Programme)

## GEOGRAPHY

**2236/01**

Paper 1

**30 Aug 2022**

**1 hour 40 minutes**

Additional Materials: 1 Insert

### READ THESE INSTRUCTIONS FIRST

Write your name, index number and class on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any rough working.

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

### Section A

Answer Question 1

### Section B

Answer **one** question

For examiner's use only:

Question 1	/ 25
Question 2 <b>OR</b> 3	/ 25
<b>Total</b>	<b>/ 50</b>

1. Write all answers on this booklet.
2. You may use the additional pages at the back of this booklet, where necessary.
3. The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **16** printed pages.

**[Turn Over**

## Section A

**This question is compulsory.**

- 1 A group of students wanted to find out whether there is a relationship between the size of beach sediments and the number of tourist accommodation located nearby.

They decided to carry out their study on northeast of Bintan (Fig. 1 in Insert), an island in Indonesia. They identified two beaches at Bintan – Trikora One Beach along the east coast, and Pasir Panjang Beach located at the north coast.

At each beach, the students collected data on the size of the beach sediments. They divided each beach into ten transects and collected 20 beach materials along each transect, of 20m apart, to calculate the average size of beach sediments there.

Their results are shown in Fig. 2 below.



**Fig. 2**

- (a) Suggest a suitable hypothesis for their study.

.....  
.....[1]

- (b) (i) Explain the safety precautions the students should take when collecting data on the size of the beach sediments at the beaches.

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.....  
.....[2]

- (ii) Identify the sampling method they used and comment on the suitability of the method.

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.....[3]

- (iii) Describe the steps the students could have taken to measure the average size of beach sediments shown in Fig. 2.

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.....[4]

**[Turn Over**

- (c) (i) Identify the data representation method used in Fig. 2 and explain its usefulness in helping the students make conclusions for their study.

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.....[3]

- (ii) Use information from Fig. 1 (Insert) and Fig. 2 to make conclusions on the hypothesis suggested in **1(a)**.

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.....[5]

- (d) (i) As an extension to their study, the students also wanted to find out if locals are depending on tourism as their main source of income in Bintan.

Suggest a guiding question for this study.

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.....[1]

(ii) Fill in the boxes below.

Design one **key** closed and one **key** open-ended question in the questionnaire survey and explain the rationale for each. [4]

Questionnaire	Rationale										
<p>Hypothesis: People living in northeast Bintan depend on tourism for their living.</p>											
<p>1. Which age group are you in?</p> <table border="1"> <tr> <td>25 and under</td> <td>26 to 34</td> <td>35 to 45</td> <td>46 to 58</td> <td>59 and over</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	25 and under	26 to 34	35 to 45	46 to 58	59 and over						To ensure a wider coverage of people of different age groups.
25 and under	26 to 34	35 to 45	46 to 58	59 and over							
<p>2. Do you live in Bintan?</p> <p>Yes _____ No _____</p>	To ensure that we are interviewing the locals and not others living outside Bintan.										
<p>3.</p>											
<p>4.</p>											

[Turn Over

**(iii)** Describe how students may check the validity of their data collected in **1(d)(ii)**.

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.....[2]

**Section B**

**Answer one question from this section.**

- 2** Study the photograph in Fig. 3, which shows coastal landforms.



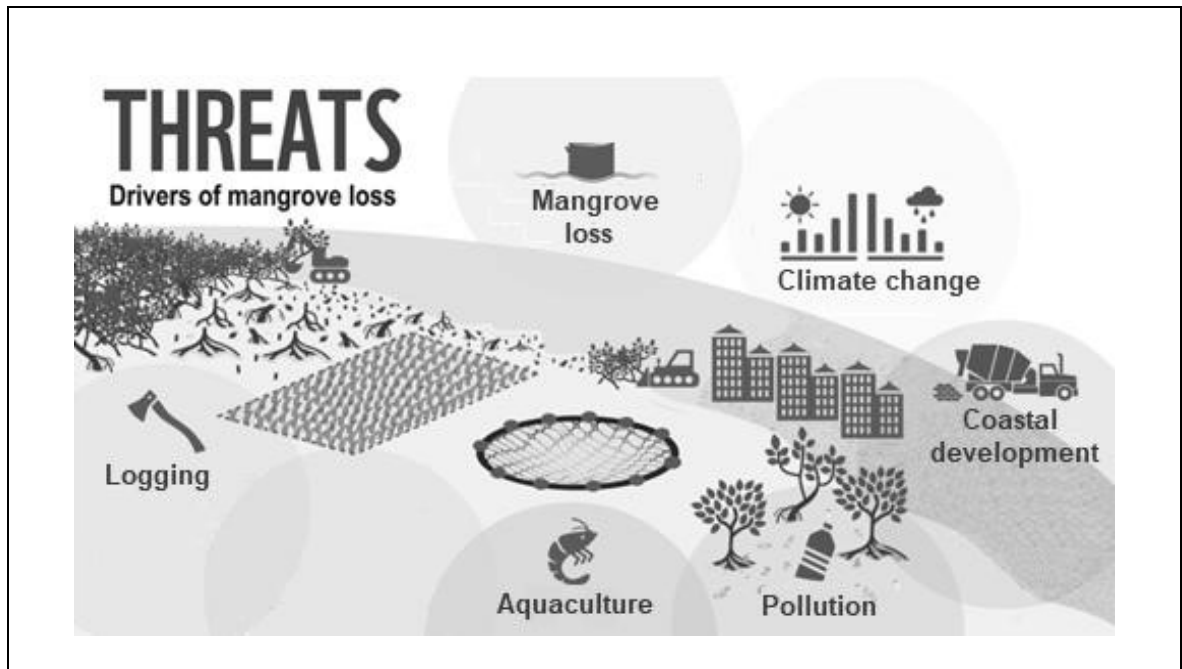
**Fig. 3**

- (a)** Draw a field sketch of the view shown in Fig. 3. Annotate your sketch to identify and describe the coastal features shown at A & B. [6]

A large, empty rectangular box with a thin black border, intended for a student to draw a field sketch of the coastal scene shown in Fig. 3. The box is currently blank.

**[Turn Over**

**(b)** Study Fig. 4, which shows the threats to mangrove forests.



**Fig.4**

With reference to Fig. 4, describe the pressures on mangrove forests.

[6]



- (c) Define heritage tourism and describe its advantages with the use of located examples.

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.....[5]

- (d) 'The involvement of local communities has been more effective than non-governmental organisations (NGOs) in protecting tourist areas.'

How far do you agree with the statement? Explain your answer with the use of relevant examples.

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[Turn Over



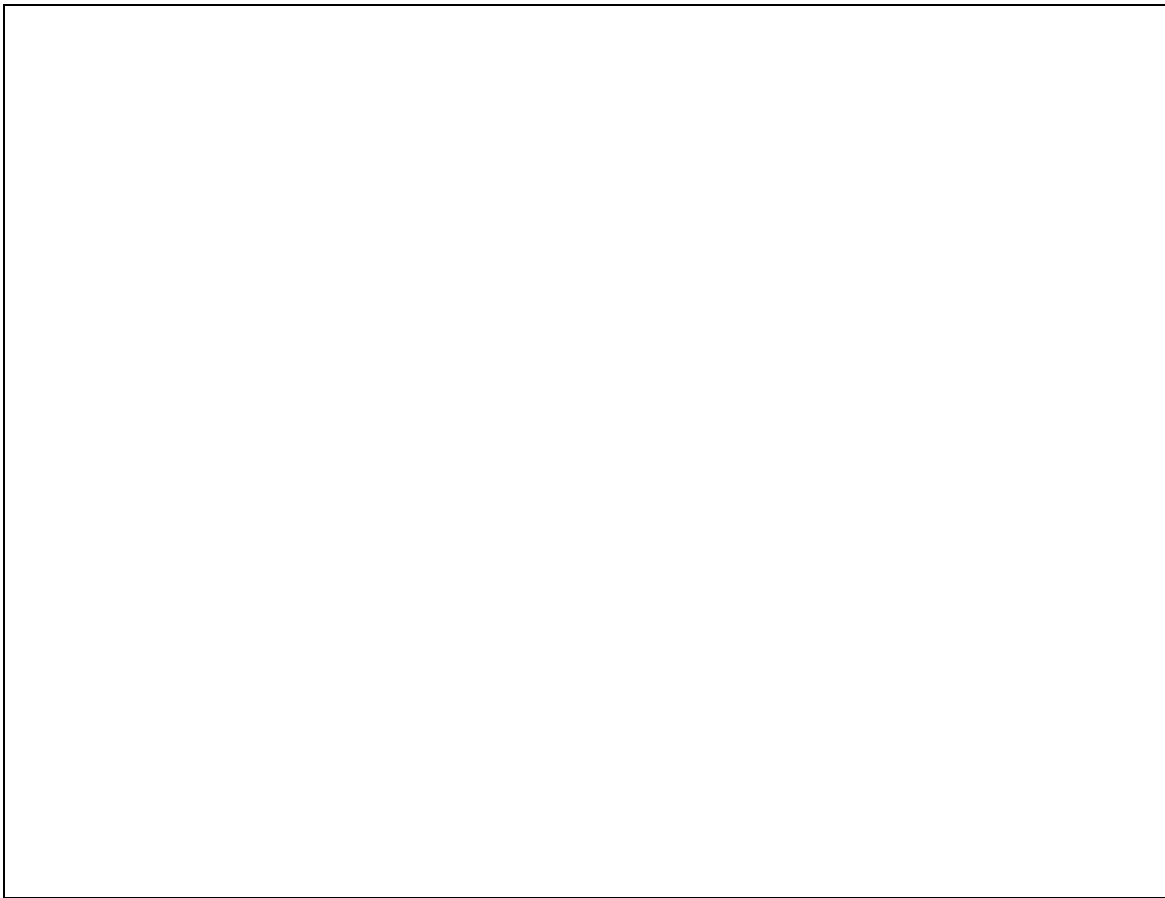
- 3 (a) Study Fig. 5, which shows a coastal landform.



**Fig. 5**

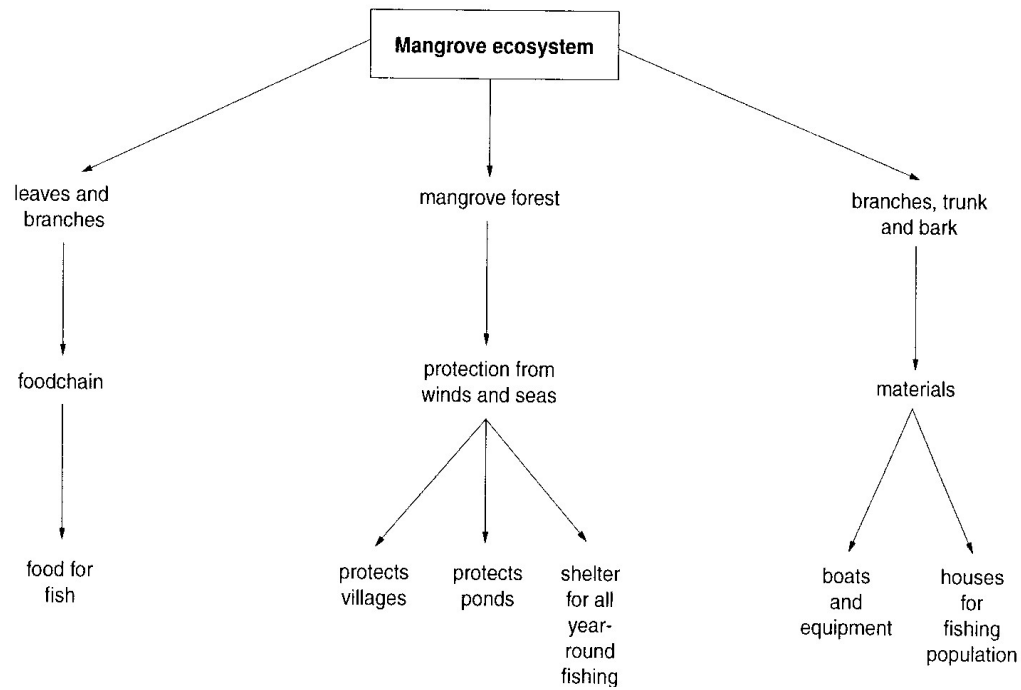
With the help of an annotated diagram, describe the characteristics and explain the formation of the landform shown in Fig. 5.

[6]



[Turn Over

**(b)** Study Fig. 6 which describes aspects of a mangrove ecosystem.



**Fig. 6**

Using information from Fig. 6, explain why it is important to conserve the mangrove ecosystem.

[6]

- (c) Describe gabions and comment on their effectiveness in protecting coastal areas.

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- (d) 'Coastal developments place the greatest pressure on coral reef ecosystems.'

To what extent do you agree with the statement? Explain your answer using examples.

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[Turn Over



## Additional page

If you use the following lined pages to complete the answer(s) to any question(s), the question number(s) must be clearly shown.

This image shows a full page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook or legal stationery. There are no margins, text, or other markings on the page.





<b>Name:</b>		<b>Index Number:</b>		<b>Class:</b>	
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**CATHOLIC HIGH SCHOOL**  
**Preliminary Examination**  
**Secondary 4 (O-Level Programme)**

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**GEOGRAPHY**

**2236/01**

Paper 1

**30 Aug 2022**

INSERT

**1 hour 40 minutes**

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**READ THESE INSTRUCTIONS FIRST**

This Insert contains Fig.1 for Question 1.

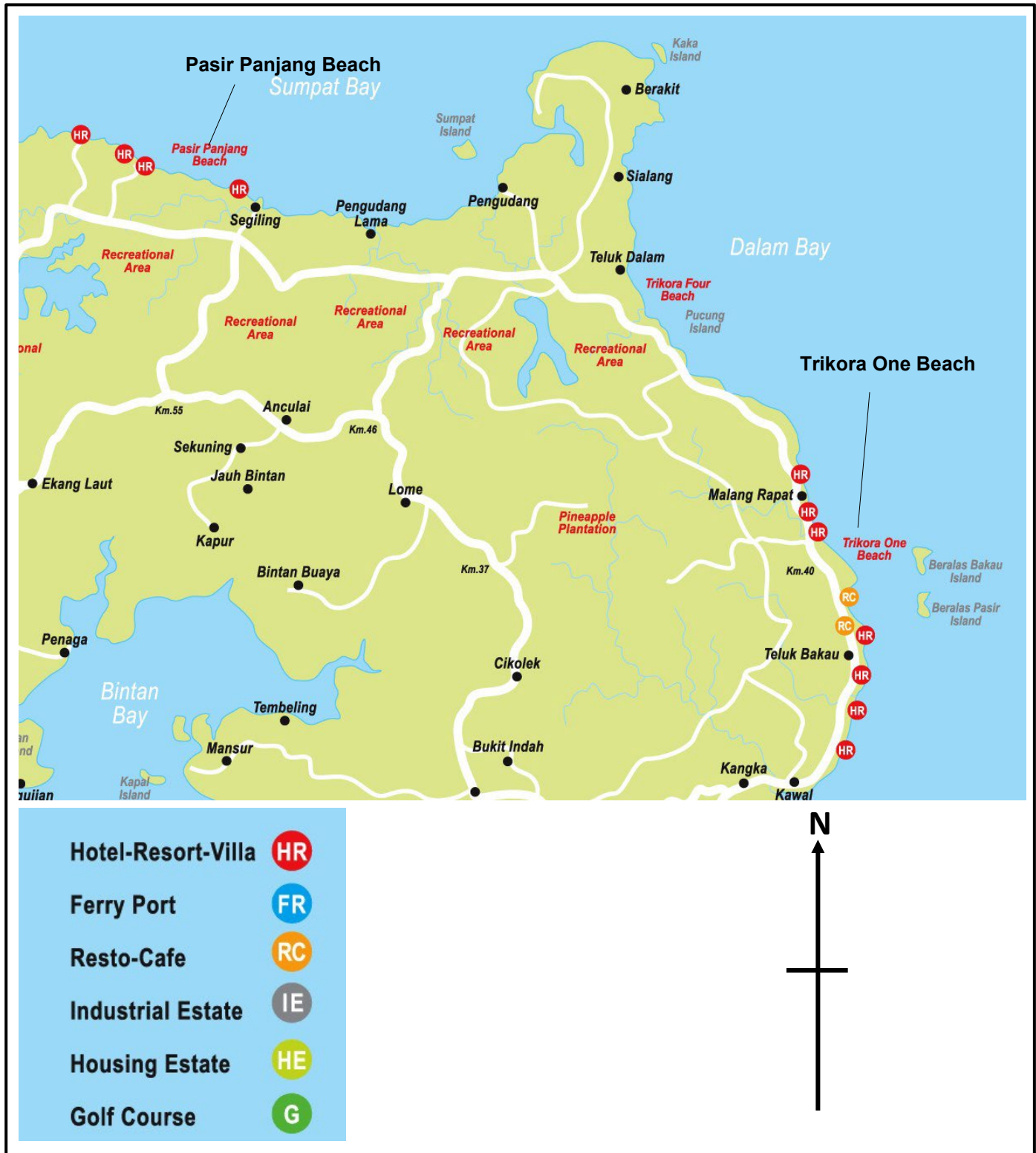
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This document consists of **2** printed pages.

**[Turn Over**

Fig. 1 for Question 1

Tourist map of northeast Bintan island, Indonesia



**Answer Scheme Prelim Paper 1 2022 Sec 4 Core Geog**

**1 (a)** Suggest a suitable hypothesis for their study. [1]

The finer/ smaller/ larger the beach materials, the more tourist accommodations located nearby.

*Accept any possible hypothesis in line with scenario that allows data to be collected.*

**1 (b) (i)** Explain the importance of safety precautions the students should take when collecting data on the size of the beach sediments at the beaches. [2]

*Award 1 mark for each valid safety precaution suggested.*

- check weather forecast to ensure fine/ clear weather on fieldwork day
- minimise going into water/ not go further than knee-high water depth
- wear covered shoes on the beach to minimise injury from stepping on sharp rocks/ objects deposited on beach
- wear gloves when picking beach sediments to minimise injury from sharp/ contaminated objects picked up from beach
- use tools eg spatula to dig sand/ collect beach sediments to minimise injury from sharp rocks/ deposits on beach

**1 (b) (ii)** Identify the sampling method they used and comment on its suitability. [3]

*Award 1 mark for identifying sampling method correctly.*

*Award 1 mark for a valid explanation of how identified sampling method impacts reliability.*

- systematic sampling
- data collected at regular intervals of 20m allows pattern on size of beach sediments to be more easily established
- eliminates problem of clustered selection of data – concentrating only on a small area of beaches and conclude only based on a small portion of the beaches under study

OR

- spread out data collection/ gather data over a larger area, of over 200m, for greater reliability of findings
- not every segment of the beach could have been sampled

**1 (b) (iii)** Describe the steps the students should have taken to obtain data on the average size of beach sediments shown in Fig. 2. [4]

*Award 1 mark for each valid step described.*

1. Use quadrat to pick up a beach sediment in 20 random squares along a transect
2. Measure the longest length of the beach sediment using the Vernier Calliper / Micrometer Screw Gauge, note on recording sheet
3. Add total and divide by 20 to obtain average size of beach sediments along the transect
4. Repeat along other transects at same distance from water edge (Steps 1-3)

**1 (c) (i)** Identify the data representation method used in Fig. 2 and explain its usefulness in helping the students make conclusions for their study. [3]

*Award 1 mark for identifying data representation correctly.*

*Award 1 mark for each valid explanation on usefulness, to a maximum of 2 marks.*

- scatter graph
- **lays out information from 2 variables** (location of transect on beach, average length of beach sediments at that transect) on the graph area → condenses information from large scale (site) to small scale (graph area)
- allows students to easily see/ **compare average size** of beach sediments not just along one transect but in comparison to other transects on the same beach → make conclusions of the size of beach sediments on 1 beach
- allows students to make comparisons of average size of beach sediments between 2 beaches

**1 (c) (ii)** Use information from Fig. 1 (Insert) and Fig. 2 to make conclusions on the hypothesis suggested in **1(a)**. [5]

*Award 1 mark for valid observations on average size of beach sediments on 2 beaches, supported by evidence from Fig. 1.*

*Award 1 mark for valid observations on frequency of tourist accommodations, supported by evidence from Fig. 2.*

*Award 1 mark for valid conclusions on hypothesis suggested in 1(a).*

*Award 1 mark for valid explanation of irregularities or other observations made, supported by evidence from Fig. 1 or/ and Fig. 2.*

*Award up to 2 marks for valid conclusion unsupported by data from Fig. 1 and Fig. 2.*

#### SEDIMENT SIZE

- at Pasir Panjang Beach, beach sediments collected are smaller/ finer, ranging between 0.09mm to 0.13mm
- while those at Trikora One Beach are bigger/ coarser at between 0.28mm to 0.40mm

#### HOTEL RESORTS (HR)

- at Pasir Panjang Beach, there are 4 hotel-resort-villas nearby in comparison
- Trikora One Beach, which has 7 such establishments

#### CONCLUSION

- Conclusion – hypothesis is not accepted as Pasir Panjang Beach has finer beach sediments compared to Trikora One Beach, yet has lesser tourist accommodations nearby
- irregular data at Pasir Panjang Beach, where at 180m and 200m transect, beach sediments are far larger at 0.35mm and 0.385mm respectively, compared to other transects which are consistently finer at 0.09mm to 0.13mm

**1 (d) (i)** Suggest a guiding question for this study. [1]

- Why is Tourism the largest source of income for businesses in Bintan?

(DNA) Is Tourism is the main source of income for people living in Bintan?

*Accept any possible guiding question, that are open-ended, in line with scenario that allows data to be collected.*

**1 (d) (ii)** Design one **key** closed and one key open-ended question in the questionnaire survey below and explain the rationale for each. [4]

*Award 1 mark for each valid key question and rationale behind.*

- 'Do you work at Bintan?
- Rationale: To find out the proportion of people working in Bintan or outside Bintan for their living
- 'Estimate how much of your income comes from tourists spending'
- Rationale: To find out how much they rely on tourism for their living

*Note: accept any other plausible questions and appropriate rationales*

**1 (d) (iii)** Describe how may the students verify their data collected in **1(d)(ii)**? [1]

*Award mark for valid method.*

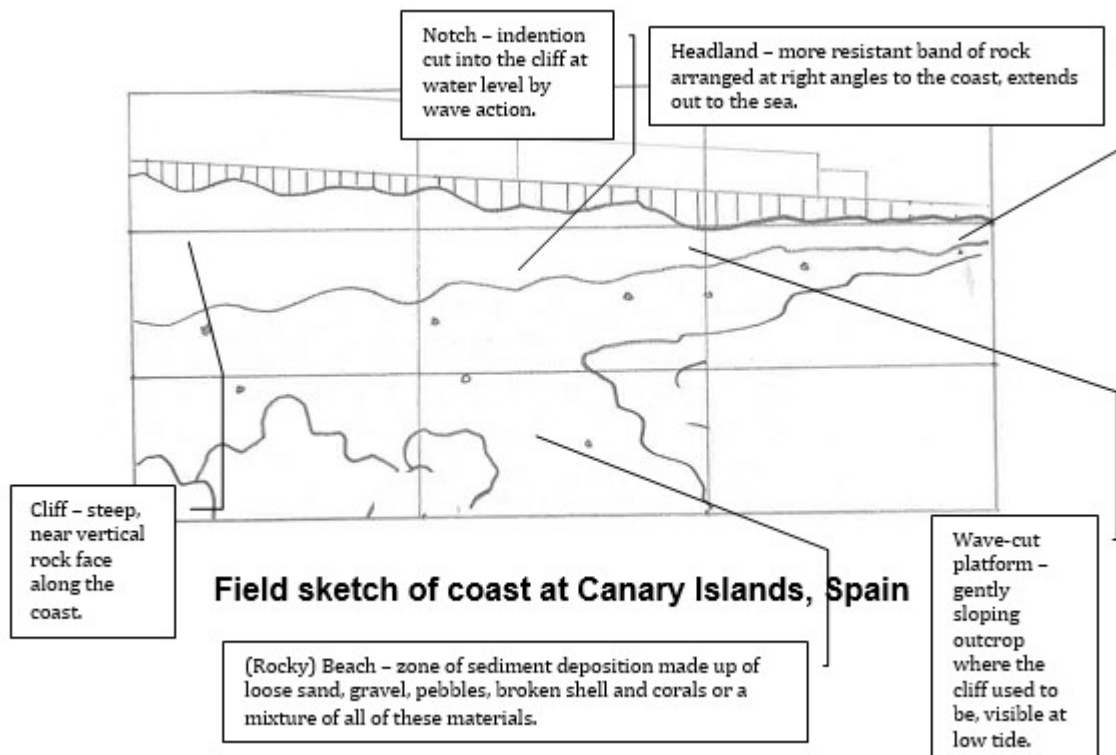
- Primary Source: write to/ carry out an in-depth interview with Bintan's mayor to check
- Secondary Source: check Indonesian government's website for reports on Bintan's economy

**2** Study the photograph in Fig. 3, which shows coastal landforms.



Fig. 3

- a Draw a field sketch of the view shown in Fig.3. Annotate your sketch to identify and describe the coastal features shown at A & B. [6]



- **A is a cliff**
- **B is a shore platform / Rocky Beach / Beach**
- **(A) Cliff – *steep and near vertical* rock face along the coast**
- **(B) Shore platform – *gently sloping* platform at the base**
- **(B) Rocky Beach / Beach/ Shore Platform – *zone of sediment deposition* made up of loose sand, gravel, pebbles, broken shells and corals or a mixture of these materials.**

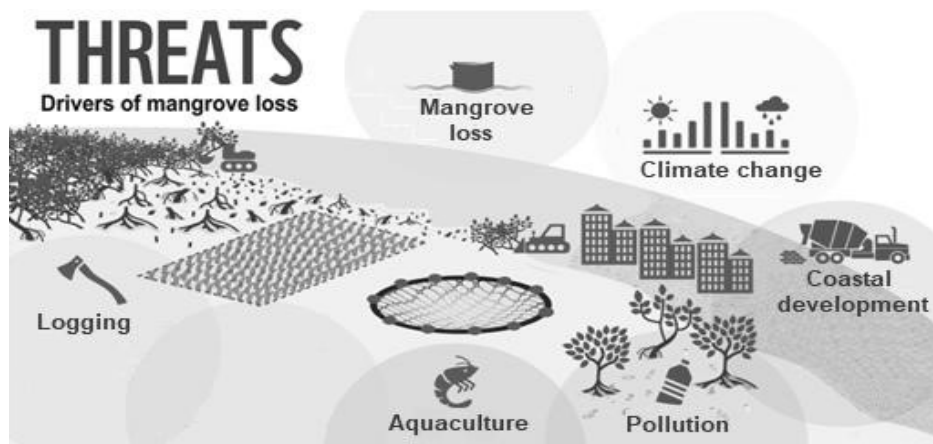
**2m – for correct identification of both A & B**

**3 marks for correct description of annotated features**

**1m – for proper sketch**

**-1mk when title is not included**

- b** Study Fig. 4 which shows the threats to the mangrove forests.



**Fig.4**

With reference to Fig. 4, describe the pressures on the mangrove forests.

- Firstly, there is logging of mangrove forests for **their valuable resources** that they can provide such as **wood for construction**. **As a result, there is a complete wipe-out of the ecosystem if there is no replanting of mangrove saplings** [1].
- Secondly, mangrove forests are cut down to make way for aquaculture for **building of shrimp farms**. **Hence the coast is open to storm waves** [1].
- Thirdly, mangrove forests are also lost due to **pollution such as oil spill which suffocate and kill the mangrove trees** [1].
- **Coastal development for recreation or residential purposes** is also responsible for large areas of mangrove forests lost **to build houses or resorts, making the coast vulnerable** [1].
- Finally, the climate change which could see **a rise in sea level could also drown and kill the mangrove forests** [1].
- Rise in sea level also make it **difficult for mangroves to colonise inland** especially when land is in competition with other human activities.

**[Award 1 mark for each description up to a maximum of 6 marks. If students are unable to LINK to mangrove pressures, max 4mks]**

- c Define heritage tourism and describe its advantages with the use of located examples.
- Heritage tourism is when people travel to locations to **experience different cultures and to understand the history of places better** [1].
  - Heritage sites and activities help **reinforce national identities for domestic tourists** [1].
  - They also help **promote a country's identity, culture and history to international tourists** [1].
  - Examples of heritage sites and events include **museums, traditional festivals, and national and historical monuments** [1].
  - Kandy, Sri Lanka & Machu Pichu, Peru [1].
- d "The involvement of the local communities has been more effective in protecting tourist areas than that of the non-governmental organisations (NGOs)."

How far do you agree with the statement? Explain your answer with the use of relevant examples.

**Level 1: [1-3 m]**

- Brief description of the local community and/or NGOs
- Little or no explanation on how the local community and/or NGOs have been effective in protecting tourist areas
- No place-specific examples provided
- No conclusion

**Level 2: [4-6 m]**

- Some description of the local community and NGOs
- Some explanation on how the local community and NGOs have been effective in protecting tourist areas
- Some place-specific examples provided but brief in details
- Weak conclusion

**Level 3: [7-8 m]**

- Detailed description of the local community and NGOs
- Detailed explanation on how the local community and NGOs have been effective in protecting tourist areas
- Detailed place-specific examples provided
- Good and clear conclusion

Candidates may provide information about some of the following points



- 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.
- 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.
- Some local communities, especially disadvantaged ones, may face funding problems when setting up businesses or investing in vehicles to facilitate tourism in their area.
- 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 other organisations to provide skilled labour or training.
- Community-based tourism is tourism that has close contact with and mainly benefits, local communities.
- It may be done in partnership with a government or non-governmental organisation (NGO). An example of successful community-based tourism can be found in Candirejo Village, which is near Borobudur in Central Java, Indonesia.
- With support from the government, the villagers of Candirejo set up a cooperative in 2003 to manage and implement the community's tourism related programmes
- The villagers also participated in decision-making through discussions and consultations with the cooperative about the programmes to be carried out. These programmes included developing organic farms and organising local transport
- By 2004, the village had 22 *andong*s (local transports of horse-drawn carts). This was in contrast in 2002, when the village had only 5 *andong*s. The organic farms and the *andong*s help to conserve the environment as the farms ensure less chemicals are used while the horse drawn local transport does not emit any greenhouse gas.
- NGOs sometimes act as channels of communication between various stakeholders, such as between local communities and tour operators or between tour operators and planning authorities
- NGOs support the tourism management efforts of various stakeholders such as local communities and planning authorities. The support can come in the form of additional manpower, expertise or marketing campaigns.
- However, as NGOs often rely on donations, they may be hampered by the lack of financial resources.
- Since 1990, the International Ecotourism Society (TIES) has developed guidelines, conducted training courses, provided technical assistance and published research papers related to tourism and the environment.
- It works with numerous organisations, including travel associations and conservation groups in 124 countries.
- Groups such as TIES can be instrumental in achieving sustainable tourism and for protecting the environments frequented by tourists

- 3 a With the help of an annotated diagram, describe the characteristics and explain the formation of the landform shown in Fig.5. [6]

DIAGRAM must show: **1mk**

- Longshore drift direction / Prevailing wind direction (either direction is acceptable)

FORMATION: **3mks**

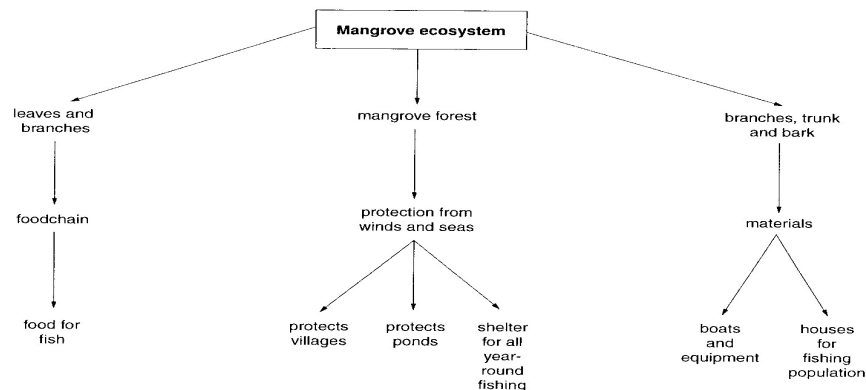
- The island in the north has formed a zone of calm water behind it by absorbing the wave energy and encourage the deposition of sediment due to the lower wave energy.
- Also, longshore drift may have possibly brought in additional sediments to be deposited to form the spit and
- Deposited accumulated materials rise above the water surface and eventually forms the tombolo when it connects to the other side/island

CHARACTERISTICS: **2mks**

- long, narrow ridge of sediments with both ends attached to land
- Usually made up of fine sediments

-1mk if there is no title: Formation of a Tombolo or any other acceptable title

- b Using information from Fig.6 only, explain why it is important to conserve the mangrove ecosystem. [6]



- Mangroves are an important source of food for marine animals. When leaves and stem litter fall into the shallow water, tiny organisms break them down to detritus which release minerals that shell fish, shrimps and small fish feed on.
- They are natural protection for the coast. They are a natural means of coastal defence reducing marine erosion as the roots trap sediments. They act as a buffer zone against incoming tides.
- It creates a sheltered area which forms a natural spawning area for fish crabs, birds. This encourages and support fishing throughout the year
- Mangroves also play a vital role in forming a sheltered area which protects organisms that live in the ponds that form in the shallow and sheltered waters

- Mangroves provide hardwoods which are durable and water resistant and are used for scaffolding, stilts for Malay houses & fish stakes for the fishing pop.
- The durable hardwoods, branches, trunks and barks of the mangrove also serve an important function in the construction of boats and fishing equipment

- c Describe gabions and comment on their effectiveness in protecting coastal areas. [5]

#### DESCRIBE

- Gabions are wire cages usually filled with crushed rocks.

#### STRENGTHS

- These cages are built along a shore or behind a beach to prevent or reduce coastal erosion by weakening wave energy.
- Gabions absorb wave energy better than seawalls. This is because the gaps between the rocks allow water to filter through. In this way, gabions prove to be successful defences against high energy waves.

However

- They are also costly as they need to be maintained regularly.
- Gabions are easily corroded by seawater and damaged by excessive trampling or vandalism.

DNA: the wire cages are unsightly

- d Coastal developments place the greatest pressures on coral reef ecosystems.'

To what extent do you agree with the statement? Explain your answer using examples. [8]

Students must be able to explain coastal developments (either recreational or commercial) and 1 other factor not related to development (natural/physical threats or others)

Students should not only explain the threat but also link to how coral reefs are stressed/threatened

#### Level 1: [1-3 m]

- Generalised statements that are **not supported**
- **Basic** answer with little or **no development**
- **Naming** of (factor or factors)
- **Brief** description(s)
- **Lacking** in detail
- **Too narrow** in scope of content/example

#### Level 2: [4-6 m]

- **Some** appropriate detail
- Answer is **not full**
- **Lack** some **relevant** detail

#### Level 3: [7-8 m]

- **Detailed** response
- **Comprehensive**
- Supported by **sound knowledge**
- Assessment of 'extent/how far'
- Assessment is **directly related to/relevant to factors**
- Support with located **places**
- Place-based/Located/Country example is given
- Reasoning is **clear**

Evaluation:

Coastal developments may have irreversible damages done to coral reefs (**TIME**)

Has taken place at an unprecedented rate in the past decades (**SCALE**)