Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- In Section A answer all questions.
- In Section B answer either question 4 or 5.
- Answer the questions in the spaces provided – there may be more space than you need.

Information

- The total mark for this paper is 69.
- The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.
- Questions labelled with an asterisk (*) are ones where the quality of your written communication will be assessed – you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.
- The marks available for spelling, punctuation and grammar are clearly indicated.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.
SECTION A – THE PHYSICAL WORLD

Answer ALL questions in this section.

Some questions must be answered with a cross in a box ☒ If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Topic 1: Coastal Landscapes

1. (a) Study Figure 1a.

Figure 1a
Coastal landforms

(i) Draw an arrow in the box on Figure 1a to show the direction of longshore drift. (1)

(ii) Which one of the following is a depositional landform? (1)

☐ A stack
☐ B headland
☐ C cliff
☐ D spit
(iii) Which one of the following best describes when deposition occurs?

- A Waves lose energy.
- B Waves gain energy.
- C Waves produce stronger backwash.
- D Waves get bigger.

(b) Complete the following sentences which describe and explain the formation of a bar.

Use some of the words in the box below.

<table>
<thead>
<tr>
<th>sediment</th>
<th>boulders</th>
<th>headland</th>
<th>cave</th>
<th>cliff</th>
</tr>
</thead>
<tbody>
<tr>
<td>lagoon</td>
<td>deposited</td>
<td>spit</td>
<td>flood</td>
<td>weathered</td>
</tr>
</tbody>
</table>

Longshore drift transports ........................................................... along the coastline.

When there is a change in the direction of the coastline, this material is ........................................................... .

If the ........................................................... continues to grow across a bay it will form a bar.

The bar may block the bay and form a ........................................................... behind it.
(c) Outline how fetch and weathering processes can affect cliff recession.

Fetch

Weathering processes

(d) Study Figure 1b (photograph) in the Resource Booklet.

Explain how geology influences the formation of different coastal landforms.

(Total for Question 1 = 15 marks)
Topic 2: River Landscapes

2 (a) Study Figure 2a.

Figure 2a
A map showing areas affected by the flooding near Chichester

(i) Which road has the greatest distance in the flooded area?

☐ A  A27
☐ B  A259
☐ C  A285
☐ D  A380

(ii) Which one of the following best describes the approximate size of the flooded area in Figure 2a?

☐ A  4km²
☐ B  40km²
☐ C  400km²
☐ D  4000km²
(iii) Which one of the following is the best definition of river flooding?

- [ ] A  When discharge is less than the channel capacity.
- [ ] B  The amount of load in the river increases.
- [ ] C  The river freezes over in winter.
- [ ] D  When discharge is greater than the channel capacity.

(iv) Complete the following sentences that describe and explain how rock type affects flooding on the map shown in Figure 2a. Use some of the words in the box below.

**water  runoff  bigger  wider  weather**

**clay  chalk  ice  interception  smaller**

The flooded area is .............................................. on the chalk than on the clay.

Chalk allows .............................................. to pass through it because it is permeable.

Chichester is more likely to flood as it is found on ...............................................

Flooding happens when there is less infiltration and greater ...............................................
(b) Study Figure 2b (photograph) in the Resource Booklet.

River courses are divided into three stages.
Which stage of the Virgin River is shown in Figure 2b?

Outline two reasons to support your choice.

Chosen stage .................................................................

1 ....................................................................................

2 ....................................................................................

(c) Using examples, describe how the effects of flooding can be reduced through planning and education.

Planning

Education

(Total for Question 2 = 15 marks)
3  (a) Study Figure 3a.

Figure 3a
A sketch map showing the distribution of fault lines in Long Valley, California

(i) Which one of the following best describes the direction of most fault lines?

☐ A  East to west.
☐ B  North to south.
☐ C  North east to south west.
☐ D  North west to south east.

(ii) Which one of the following best describes the distribution of the fault lines?

☐ A  Most are found along Highway 395 (road).
☐ B  The fault lines are evenly spread.
☐ C  Most are found within the crater (caldera).
☐ D  They are all around the Bloody Mountain.
(b) Which one of the following is the main reason why earthquakes occur?

☐ A  Movement on a fault line.
☐ B  Building of large reservoirs.
☐ C  Rapid rates of erosion.
☐ D  Large volcanic eruptions.

(c) Complete the following sentences that describe how the use of specialist instruments helps scientists study earthquakes.

Use some of the words in the box below.

Earthquakes are measured using a ............................................................................................. .

These instruments detect the ............................................................................................. released during an earthquake.

They help scientists ............................................................................................. the earthquake.

This information is used to reduce the ............................................................................................. of earthquakes.
(d) Outline two ways that planning and education can reduce the impact of earthquakes.

(e) Study Figure 3b (photograph) in the Resource Booklet.

Describe how volcanoes are formed on convergent plate boundaries.

(Total for Question 3 = 15 marks)
SECTION B – ENVIRONMENTAL ISSUES

Answer EITHER Question 4 or Question 5.

Topic 4: A Wasteful World

Spelling, punctuation and grammar will be assessed in 4*(f).

If you answer Question 4 put a cross in the box ☐ .

4 (a) (i) Which one of the following best describes the term recycle?

☐ A To repair items.
☐ B To throw items away.
☐ C To use items again.
☐ D To use items only once.

(ii) Which one of the following is a benefit of recycling?

☐ A More raw materials are used.
☐ B Less landfill space is needed.
☐ C More waste is incinerated.
☐ D More waste is produced.

(iii) Which one of the following is an example of a white good?

☐ A digital radio
☐ B car
☐ C mobile phone
☐ D washing machine
(b) Study Figure 4a.

Figure 4a

A cartoon about waste

Describe the message shown in the cartoon in Figure 4a.

(3)
(c) Study Figure 4b.

![Figure 4b](http://catalystreview.net/wp-content/uploads/2010/04/Garbage-Contribution-580.png)

**Figure 4b**

*Average waste contributions from businesses in a 6 hour period*

(i) Which one of the following produces less than an average of 280kgs of waste?

- [ ] A theme park
- [ ] B mainline train station
- [ ] C fast food restaurant
- [ ] D cinema

(ii) Suggest one reason for the high waste production in fast food restaurants.
(d) Describe one method a High Income Country (HIC) uses to dispose of its waste. 

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(e) Describe how energy is wasted by households. 

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*(f)* Explain how the development of one renewable energy source has an impact on the environment.

Chosen renewable energy source ............................................................................................
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(Total for spelling, punctuation and grammar = 4 marks)
(Total for Question 4 = 24 marks)
Topic 5: A Watery World

Spelling, punctuation and grammar will be assessed in 5*(e).

If you answer Question 5 put a cross in the box ☐.

5 (a) (i) What is groundwater?

☐ A Rainfall collected on the surface in lakes.
☐ B Water found underground in soil and rock.
☐ C Rainfall collected in reservoirs.
☐ D Water in a river channel.

(ii) Which one of the following is a benefit of reservoirs?

☐ A They never run out of water.
☐ B The water supply can be easily managed.
☐ C The removal of water leads to unstable land.
☐ D They require energy to pump the water.

(iii) Which one of the following is an example of using water for leisure?

☐ A watering crops
☐ B treating sewage
☐ C watering golf courses
☐ D car manufacture
(b) Study Figure 5a (photograph).

Figure 5a
Water Supply at Boulder City, Arizona

Describe the water supply method shown in Figure 5a.

(Source: © Michael Aw / Getty Images)
(c) Study Figure 5b.

![Figure 5b](image)

**Figure 5b**
**Total annual fresh water use for selected countries**

(i) Which country uses more than 600 km$^3$/yr of fresh water per year?

- [ ] A China
- [ ] B India
- [ ] C Russia
- [ ] D USA

(ii) Suggest one reason for high fresh water use in High Income Countries (HICs) such as the USA.

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(iii) Describe one problem of water supply in HICs.

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(d) Outline how water is managed in households. (4)
(e) Using examples, explain how appropriate technology is used for water supply in small communities in Low Income Countries (LICs).

(Total for spelling, punctuation and grammar = 4 marks)  
(Total for Question 5 = 24 marks)
Instructions

This Resource Booklet contains resources needed for use with the Unit 2: The Natural Environment examination. This Resource Booklet is for use with both Foundation and Higher tier papers.
Figure 1b
The Oregon coastline
Figure 2b
The Virgin River in Zion National Park

Figure 3b
Mount St. Helens is a volcano that was formed on a convergent plate boundary