



Oxford Cambridge and RSA

**Tuesday 13 May 2025 – Morning**

**A Level Geography**

**H481/01 Physical systems**

**Time allowed: 1 hour 30 minutes**



**You must have:**

- the OCR 12-page Answer Booklet
- the Resource Booklet (inside this document)

**You can use:**

- a ruler (cm/mm)
- a scientific or graphical calculator

**INSTRUCTIONS**

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the Answer Booklet. The question numbers must be clearly shown.
- Fill in the boxes on the front of the Answer Booklet.
- Choose **one** option in Section A and answer **all** the questions for that option. Answer **all** the questions in Section B.

**INFORMATION**

- The total mark for this paper is **66**.
- The marks for each question are shown in brackets [ ].
- Quality of extended response will be assessed in questions marked with an asterisk (\*).
- This document has **8** pages.

**ADVICE**

- Try to answer every part of each question you choose.
- Read each question carefully before you start your answer.

## Section A

## Landscape Systems

Choose **one** option and answer **all** the parts of the question in your chosen option.

## Option A – Coastal Landscapes

1

- (a) Explain the influence of flows of energy in the formation of a salt marsh. [8]
- (b) Study **Table 1**, which shows cliff erosion rates on the East Yorkshire coast, UK.

**Table 1 Cliff erosion rates on East Yorkshire coast, UK**

Location	Rate of erosion (m/year)
Bridlington	1.00
Barmston	2.00
Hornsea	0.25
Mappleton	1.50
Aldbrough	0.80
Grimston	1.10
Tunstall	0.75
Withernsea	2.20
Out Newton	1.90
Spurn neck	3.10

- (i) Using **Table 1**, calculate the mean rate of erosion. Show your workings. [2]
- (ii) The standard deviation for the rate of erosion in **Table 1** is 0.8. State what this indicates about the dispersion (spread) of the data set. [2]
- (iii) Explain why standard deviation is a more accurate measure of dispersion (spread) than range **and** interquartile range. [2]
- (c) Study **Fig. 1**, a coastal landscape in Norway. With reference to **Fig. 1**, explain the influence of **one** geomorphic process in shaping landform **A** (fjord). [3]
- (d)\* 'Coastal landscape systems are influenced more by management strategies than by the unintentional impacts of economic development.'

To what extent do you agree with this statement? [16]

## Option B – Glaciated Landscapes

2

- (a) Explain the influence of flows of energy in the formation of a drumlin. [8]
- (b) Study **Table 2**, which shows valley erosion rates along a glacier in India.

**Table 2 Valley erosion rates along a glacier in India**

Location	Rate of erosion (m/year)
Zanskar 1	80
Jobri	30
Bilare Bhang	30
Drang Drung	90
Bhurpu	50
Hamtah	80
Nikarchu	90
Shankalpa	50
Pindari	64
Poting	50

- (i) Using **Table 2**, calculate the mean rate of erosion. Show your workings. [2]
- (ii) The standard deviation for the rate of erosion in **Table 2** is 21.7. State what this indicates about the dispersion (spread) of the data set. [2]
- (iii) Explain why standard deviation is a more accurate measure of dispersion (spread) than range **and** interquartile range. [2]
- (c) Study **Fig. 2**, a periglacial landscape in Iceland. With reference to **Fig. 2**, explain the influence of **one** geomorphic process in forming landform **B** (patterned ground). [3]
- (d)\* 'Periglacial landscape systems are influenced more by human activity than glacial landscape systems.'

To what extent do you agree with this statement? [16]

### Option C – Dryland Landscapes

3

- (a) Explain the influence of flows of energy in the formation of a linear dune. [8]
- (b) Study **Table 3**, which shows canyon erosion rates in a dryland landscape in China.

**Table 3 Canyon erosion rates in a dryland landscape in China**

Location	Rate of erosion (m/year)
Xi'an	3.5
Yinchuan	3.5
Milan	1.0
Hami	0.5
Turpan	2.0
Korla	3.0
Yinang	1.0
Kashi	0.7
Shache	2.8
Lhasa	1.6

- (i) Using **Table 3**, calculate the mean rate of erosion. Show your workings. [2]
- (ii) The standard deviation for the rate of erosion in **Table 3** is 1.11. State what this indicates about the dispersion (spread) of the data set. [2]
- (iii) Explain why standard deviation is a more accurate measure of dispersion (spread) than range and interquartile range. [2]
- (c) Study **Fig. 3**, a dryland landscape in Chad. With reference to **Fig. 3**, explain the influence of **one** geomorphic process in shaping landform **C** (nivation hollow). [3]
- (d)\* 'Dryland landscape systems are influenced more by human activity, due to water supply issues, than by economic activity.'

To what extent do you agree with this statement? [16]

**Section B****Earth's Life Support Systems****4**

**(a)** Study **Fig. 4**, which shows atmospheric carbon dioxide, 1960–2021.

**(i)** Identify **three** limitations of this graph. [3]

**(ii)** Suggest why it is important to identify and record changes to the global carbon cycle. [4]

**(b)** Examine the significance of the role of the cryosphere (ice) in linking the water and carbon cycles. [10]

**(c)\*** 'Improving forestry techniques protects the global water cycle more effectively than drainage basin planning.'

How far do you agree with this statement? [16]

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