



Oxford Cambridge and RSA

A Level Geography

H481/01 Physical Systems

Monday 4 June 2018 – Morning
Time allowed: 1 hour 30 minutes



You must have:

- the Resource Booklet (inserted)
- the OCR 12-page Answer Booklet (OCR12 sent with general stationery)

You may use:

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

INSTRUCTIONS

- The separate Resource Booklet will be found inside this document.
- Use black ink. You may use an HB pencil for graphs and diagrams.
- Section A: Choose **one** option and answer **all** parts of the question in the option.
- Section B: Answer **all** questions.
- Write your answers in the Answer Booklet. The question number(s) must be clearly shown.
- Do **not** write in the barcodes.

INFORMATION

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

Section A – Landscape Systems

Answer **all** questions from **one** option.

Option A – Coastal Landscapes

1 (a) Explain how a sediment cell can be viewed as a system. [8]

(b) Study **Table 1** which shows mean rates of shoreline retreat for 9 east coast states in the USA.

| | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Mean rate of shoreline retreat (m/yr) | 0.4 | 0.5 | 0.9 | 1.0 | 1.5 | 4.2 | 0.6 | 2.0 | 0.1 |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Table 1: Mean rate of shoreline retreat for 9 east coast states in the USA

(i) Calculate the median for the data shown in **Table 1**.
You must show your working. [2]

(ii) Calculate the interquartile range for the data shown in **Table 1**.
You must show your working. [4]

(c) Study **Fig. 1**, Ediz Hook, Washington.

With reference to **Fig. 1**, explain the role of flows of materials in forming landform **A**. [3]

(d)* Using a case study, assess the relative importance of the different physical factors influencing the landscape of a high energy coastline. [16]

Option B – Glaciated Landscapes

- 2 (a) Explain how a glacier can be viewed as a system. [8]
- (b) Study **Table 2** which shows the mean rate of retreat for 9 glaciers in the Himalayas from 2000 to 2007.

S.R. Bajracharya and P. Mool, 'Glaciers, glacial lakes and glacial lake outburst floods in the Mount Everest region, Nepal', (2009) *A. Glaciol.*, 50 (53), 81-86. Adapted from original material from the *Annals of Glaciology* with permission of the International Glaciological Society. Item removed due to third party copyright restrictions

Table 2: Mean rate of retreat for 9 glaciers in the Himalayas (2000–2007)

- (i) Calculate the median for the data shown in **Table 2**.
You must show your working. [2]
- (ii) Calculate the interquartile range for the data shown in **Table 2**.
You must show your working. [4]
- (c) Study **Fig. 2**, Sierra Nevada, California.
- With reference to **Fig. 2**, explain the role of flows of materials in forming landform **B**. [3]
- (d)* Using a case study, assess the relative importance of the different physical factors influencing a landscape shaped by the action of ice sheets. [16]

Option C – Dryland Landscapes

3 (a) Explain how polar drylands can be viewed as a system. [8]

(b) Study **Table 3** which shows mean rate of desertification for 9 countries.

| | | | | | | | | | |
|---|-----|------|-----|------|-----|-----|-----|-----|-----|
| Mean rate of desertification (km²/yr) | 900 | 1350 | 154 | 1351 | 658 | 391 | 202 | 877 | 460 |
|---|-----|------|-----|------|-----|-----|-----|-----|-----|

Table 3: Mean rate of desertification for 9 countries

(i) Calculate the median for the data shown in **Table 3**.
You must show your working. [2]

(ii) Calculate the interquartile range for the data shown in **Table 3**.
You must show your working. [4]

(c) Study **Fig. 3**, Death Valley National Park, California.

With reference to **Fig. 3**, explain the role of flows of materials in forming landform **C**. [3]

(d)* Using a case study, assess the relative importance of the different physical factors influencing the landscape of a mid-latitude desert. [16]

Section B – Earth’s Life Support Systems

Answer **all** questions.

- 4 (a)** Study **Fig. 4**, precipitation totals across mainland USA in August 2016.
- (i) With reference to **Fig. 4**, suggest how variations in precipitation totals influence runoff processes in the water cycle. **[4]**
 - (ii) Explain **three** limitations of presenting rainfall data using choropleth maps. **[3]**
- (b)** Examine how feedback loops can affect the processes and stores within the carbon cycle. **[10]**
- (c)*** Assess the extent to which deforestation and farming affect the water and carbon cycles of a tropical rainforest. **[16]**

END OF QUESTION PAPER

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