

**GEOGRAPHY**

**9696/21**

Paper 2 Advanced Physical Options

**May/June 2014**

**1 hour 30 minutes**

Additional Materials: Answer Booklet/Paper

**READ THESE INSTRUCTIONS FIRST**

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

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

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

**DO NOT WRITE IN ANY BARCODES.**

Answer **two** questions only. Each question answered **must** be from a different topic.

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

You should make reference to appropriate examples studied in the field or the classroom, even where such examples are not specifically requested by the question.

The Figures, the Table and the Photograph referred to in the questions are contained in the Insert.

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 **3** printed pages, **1** blank page and **1** Insert.

### Tropical environments

Only **one** question may be answered from this topic.

- 1 (a) Fig. 1 shows the position of the Inter Tropical Convergence Zone (ITCZ) and the mean pattern of winds in January and July.

Explain how the position of the ITCZ and the pattern of winds are important in tropical climates. [10]

- (b) Explain how vegetation in tropical rainforest and savanna areas has adapted to climate. To what extent does climate affect sustainable development in **one** tropical environment? [15]

- 2 (a) Describe the factors that affect the fertility of tropical soils. [10]

- (b) Describe the weathering processes that act upon granite in tropical areas and explain their impact upon the development of granite landforms. [15]

### Coastal environments

Only **one** question may be answered from this topic.

- 3 (a) Fig. 2 shows a cross section of a beach – dune – saltmarsh complex.

Describe the landforms shown on Fig. 2 and explain how they have been formed. [10]

- (b) Describe the marine and sub-aerial processes that affect coastal erosion. To what extent have these processes contributed to the landforms on a stretch of coastline you have studied? [15]

- 4 (a) Explain why sea level change is important in the development of coral reefs and atolls. [10]

- (b) Explain the factors that can make coastlines at risk from erosion. Using an example or examples, assess the extent to which these factors can be overcome. [15]

### Hazardous environments

Only **one** question may be answered from this topic.

- 5 (a) Table 1 shows a classification of tsunami in the Pacific Ocean.  
 Explain how tsunami are caused and why their intensities and hazardous effects vary in the Pacific Ocean. [10]
- (b) Explain why some volcanoes are more hazardous than others. [15]
- 6 (a) Describe **one** type of hazardous mass movement and explain how it is caused. Describe the nature of its hazardous effects. [10]
- (b) How are tornadoes formed? Explain the hazards that result from tornadoes and assess the extent to which their effects can be minimised. [15]

### Arid and semi-arid environments

Only **one** question may be answered from this topic.

- 7 (a) Photograph A shows some landforms in a hot arid area.  
 Using a diagram, identify and describe the landforms in Photograph A and explain how they have developed. [10]
- (b) Explain how plants and animals in hot arid areas are adapted to extreme temperatures and physical and physiological drought. [15]
- 8 (a) Describe and explain the similarities and differences between the climatic characteristics of arid and semi-arid areas. [10]
- (b) Using an example, explain the extent to which climate affects the sustainable development of **either** an arid **or** a semi-arid area. [15]

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*Copyright Acknowledgements:*

Question 1 Fig. 1           © P Smithson, K Addison & K Atkinson; *Fundamentals of The Physical Environment*; Routledge; 2002; ISBN: 0415232937.  
Question 3 Fig. 2           © Michael Raw; *AS/A-level Geography Exam Revision Notes*; Philip Allan; 2000; ISBN 0860034267.  
Question 7 Photograph A   © <http://wallpicshd.com/grand-canyon-hd-wallpaper-landscapes.html>

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