

Answer questions from **two** different options.

Tropical environments

If answering this option, answer Question 1 and **either** Question 2 **or** Question 3.

- 1 Fig. 1.1 shows the nutrient cycle for a humid tropical (rainforest) ecosystem.
 - (a) Compare the size of the flows and stores in the nutrient cycle shown in Fig. 1.1. [4]
 - (b) Explain how deforestation is likely to affect the nutrient cycle shown in Fig. 1.1. [6]

- 2 Evaluate the view that chemical weathering is the most important influence on the formation of tropical karst landforms. [20]

- 3 For **one** type of tropical ecosystem, assess the role of climate in the development of soil types and profile characteristics. [20]

Coastal environments

If answering this option, answer Question 4 and **either** Question 5 **or** Question 6.

- 4 Fig. 4.1 shows level of risk to coral reefs in regions of the world.
 - (a) Compare the level of risk between the regions shown in Fig. 4.1. [4]
 - (b) Explain **two** reasons why the level of risk to coral reefs varies. [6]

- 5 'The erosion of coastal cliffs is the main source of sediment in coastal areas.'
How far do you agree? [20]

- 6 To what extent are the advantages of a hard engineering approach greater than the disadvantages for the sustainable management of coasts? [20]

Hazardous environments

If answering this option, answer Question 7 and **either** Question 8 **or** Question 9.

- 7** Fig. 7.1 shows the number of tornadoes and the number of tornado-related deaths, USA, 2012–18.
- (a) Describe the relationship between the number of tornadoes and the number of tornado-related deaths shown in Fig. 7.1. [3]
- (b) Suggest reasons for the relationship you described in (a). [7]
- 8** Evaluate the relative importance of hazards resulting from earthquakes. [20]
- 9** 'It is very difficult to prepare for the hazards from mass movements.'
- How far do you agree with this statement? [20]

Hot arid and semi-arid environments

If answering this option, answer Question 10 and **either** Question 11 **or** Question 12.

- 10** Fig. 10.1 is a photograph which shows a flash flood in a hot arid environment in Algeria.
- (a) Describe the characteristics of the flash flood shown in Fig. 10.1. [4]
- (b) Explain the role of flash floods in shaping landforms in a hot arid environment. [6]
- 11** 'Salt crystal growth is the most important weathering process in hot arid and semi-arid environments.'
- How far do you agree? [20]
- 12** Assess the variability of temperature and precipitation between hot arid and semi-arid environments. [20]

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