

# Oxford Revise | Geography | Answers

## Chapter 13 Why do tropical rainforests matter?

All exemplar answers given are worth full marks.

(a)

(i) emergent layer

(ii) they break through the canopy to get more light

(iii) forest floor

(iv) The vegetation is limited to ferns, woody plants, and younger trees because of the lack of light.

(v) Their waxy texture helps them shed water quickly and efficiently. This stops mould building up in the humid conditions. The drip tips allow the water to drip off and so there is less chance of the leaves being pulled off the tree. There is rain throughout the year, so the trees do not lose all their leaves at the same time.

(vi) The lush vegetation grows very rapidly in the hot, wet, humid conditions all year round – so there is an abundant food supply.

(b) The equatorial climate has high temperatures, averaging 27 C throughout the year, and very high humidity. Rainfall is also high, usually over 2 000 mm a year, with the only likely variation being a distinct wet season of intense rainfall when temperatures are highest.

(c) Plants: Trees grow very tall because of the ideal growing conditions in their attempt to reach the most sunlight. The leaves have flexible bases so they can turn and face the sun. Many leaves have a drip tip to allow heavy rain to drip off.

Animals: Many animals are camouflaged so they blend into the vegetation and so protect themselves from predators and conceal themselves from their prey. Some species have adapted to living in the treetops. Sloths have long arms and curved feet with long claws to help grip tree trunks and branches.

(d) Nutrient cycling is the movement of nutrients between the living plants which make up the biomass, the soil, and the litter made up of dead and decaying matter. Most nutrients are stored in the trees and plants of the biomass. When the leaves die, they fall to the ground to become the litter store. Few nutrients are stored as litter, due to the rapid decomposition by fungi and bacteria which thrive in the hot wet conditions. Also, few nutrients are stored in the soil. This is because of the rapid take-up by plants and leaching. Leaching is the washing away of the nutrients by the heavy rainfall. The hot wet climate means that the nutrients are rapidly recycled through the different stores.

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(a) C

(b)

(i) stores

(ii) transfers

(iii) biomass

(iv) precipitation

(v) weathered material

(vi) leaching

- (c) Some animals have camouflaged fur or skin, enabling them to blend into the natural environment, concealing themselves from potential prey. Some survive by limiting their diets, e.g. toucans only consuming fruits that other birds and animals cannot access. Sloths, with long arms and claws, are adapted to living in treetops. Some spiders and snakes use their bright colours and poisons to warn predators to avoid them.

### Questions referring to previous content

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- (a) A community of plants and animals and the physical environment in which they live and interact.  
(b) They break down dead plant and animal material to add to nutrients to the soil.