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## Answers

# Quiz: Deserts and desertification

This short quiz could be used as an introduction to the theme of deserts and the issue of desertification. It could be used as a bit of fun at the start or end of a lesson. It is designed to help students start thinking about the location and geography of deserts as well as the desertification threat. The correct answers are given below, along with some additional information.

## Answers

- 1 The correct answer is B, 250 mm or less. These are truly arid areas. Semi-arid areas/semi-deserts are those with between 250–500 mm or precipitation. This definition holds for hot deserts such as the Sahara and cold deserts (polar deserts).
- 2 The correct answer is C, 33%. Of this one third of the land area around 20% is hot desert and the rest is polar desert.
- 3 The correct answer is C, 20–35° North/South. These are locations dominated by high air pressure and low rainfall, caused by subsidence between the Hadley and Ferrel atmospheric cells. This part of the atmospheric circulation forms discontinuous deserts belts at the tropics.
- 4 The correct answer is B, 2 billion. Less than 2% of the world's population live in true deserts, but the wider drylands definition (about 40% of land area) includes around 2 billion people or 25% of global population. For an overview of drylands see: <https://www.fao.org/dryland-assessment/en/>
- 5 The correct answer is D, xerophytes. These plants either store water for later use (cacti, succulents) and/or limit water loss by having very small leaves and reflective surfaces. The other 'phytes' are those adapted to living in water (hydrophytes), are salt-water tolerant (halophytes) or get their moisture and nutrients from the air (epiphytes).
- 6 The correct answer is D, Africa. It has around 13 million square km of hyper-arid and arid areas i.e. true deserts. Asia has the next largest area at around 10.5 million square km. Using the broader definition of drylands, Asia has the largest area followed by Africa. There are virtually no arid/hyper-arid areas in Europe.
- 7 The correct answer is B, land degradation. This focusses on the decline in biological productivity of land as soil fertility declines due to increased activity. It can be caused by climate change (global warming) as well as a complex range of other natural and human factors. It often leads to soil erosion as vegetation cover declines.
- 8 The correct answer is A, the Gobi Desert in China. The southern fringes of the desert (which is overall a cold desert) are expanding into grassland areas at the rate to 3,000-4,000 square km per year. This is degrading farmland and leading to major dust storms.

9 All four answers are correct. Desertification usually has multiple, complex causes and is rarely caused by a single factor. Poor land management (overgrazing, irrigation leading to salinisation of the soil, deforestation), population pressure, climate change and extreme weather (longer, more frequent drought and flooding) all contribute.

10 The correct answer is C, 500 million. This number is likely to grow significantly by 2050 as a result of global warming. Areas already affected will become increasingly less habitable as desertification intensifies, unless land management improves. See:

<https://www.unccd.int/land-and-life/desertification/overview>

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