

Oxford Revise | Geography | Answers

Chapter 12

All exemplar answers given are worth full marks.

- 1.1** Tundra environments are found in a band stretching east to west at high latitudes in northern Europe, Russia, Canada, and Alaska. At low latitudes, they are found in southern South America and along the coasts of the Antarctic ice sheet.
- 1.2** A and E
- 1.3** Precipitation in Fairbanks is quite low throughout the year. The highest precipitation is in **August**, when there is **50** mm of precipitation. The temperature varies considerably with a low of -25°C in December and a high of 16°C in **July**.
- 1.4** July
- 1.5** 16°C
- 1.6** 10°C

Working:

Temperature values in ascending order: $-9, -7, -7, -6, -5, -3, -1, -1, 3, 4, 6, 7$

Median: $(-3 + -1) \div 2 = -2$

Median of upper half: $(3 + 4) \div 2 = 3.5$

Median of bottom half: $(-7 + -6) \div 2 = -6.5$

Inter-quartile range: $-6.5 - 3.5 = -10^{\circ}\text{C}$

- 1.7** 28.1 mm or 28 mm
- 1.8** 337 mm
- 1.9** Polar environments have low precipitation because there is high atmospheric pressure due to sinking air. Sinking air means there are few clouds, resulting in low precipitation.
- 2.1** Tundra environments are cold with winter temperatures falling to as low as -20°C .
- Accept other suitable answers.**
- 2.2** Soils in tundra environments are permanently frozen (permafrost). In summer months, the top layer thaws, meaning they are often waterlogged. The soils are acidic and not very fertile.

2.3 This question is level-marked:

Level	Marks	Description
2 (clear)	3–4	<ul style="list-style-type: none"> • Sound, organised and relevant throughout, using supporting evidence and examples • Communicates good knowledge and understanding • Communicates using developed statements and ideas (e.g. uses connectives) • Uses geographical terms and vocabulary
1 (basic)	1–2	<ul style="list-style-type: none"> • Basic throughout with limited supporting evidence and/or examples • Communicates limited knowledge and understanding • Explanations are partial • Little or no use of geographical terms and vocabulary
	0	No relevant content

Example answer: *Soils in the tundra have few nutrients, so plant life is limited and not very diverse because plants depend on the nutrients in the soil. The animal diversity is also low because the limited vegetation means there are limited food sources for herbivores. Similarly, the number and variety of carnivores is low because they depend on the limited diversity of herbivores. However, each element depends on each other. The animals feed off the plants and when they die, they return nutrients to the soil, which helps support plant growth. When plants die, they also return nutrients to the soil that allows new plant growth, providing food for animals.*

2.4 This question is level-marked:

Level	Marks	Description
2 (clear)	3–4	<ul style="list-style-type: none"> • Sound, organised and relevant throughout, using supporting evidence and examples • Communicates good knowledge and understanding • Communicates using developed statements and ideas (e.g. uses connectives) • Uses geographical terms and vocabulary
1 (basic)	1–2	<ul style="list-style-type: none"> • Basic throughout with limited supporting evidence and/or examples • Communicates limited knowledge and understanding • Explanations are partial • Little or no use of geographical terms and vocabulary
	0	No relevant content

Example answer: *Polar environments are very cold with low amounts of precipitation. Winter temperatures can be as low as -50°C . The ground is permanently frozen and covered in ice with no exposed soil, so there is very little plant life except for the lichens and mosses that grow on rocks. The very cold temperatures and very limited plant growth means that there are few animals that can survive in this environment. Polar bears and penguins live on the fringes of the ice.*

2.5 This question is level-marked:

Level	Marks	Description
2 (clear)	3–4	<ul style="list-style-type: none"> • Sound, organised and relevant throughout, using supporting evidence and examples • Communicates good knowledge and understanding • Communicates using developed statements and ideas (e.g. uses connectives) • Uses geographical terms and vocabulary
1 (basic)	1–2	<ul style="list-style-type: none"> • Basic throughout with limited supporting evidence and/or examples • Communicates limited knowledge and understanding • Explanations are partial • Little or no use of geographical terms and vocabulary
	0	No relevant content

Example answer: *In cold environments like polar and tundra, temperatures are too cold and precipitation too low to give good conditions for plant growth. In polar environments, the soil is permanently covered in ice so plants like moss can only grow on exposed rock. In tundra environments, soils have few nutrients so only a small range of plants are able to survive. So, precipitation and temperature are two factors leading to low biodiversity in cold environments. When there are few plants, this creates a further factor leading to low biodiversity because there is limited food for insects and animals.*

2.6 Polar bears have adapted to cold environments by having thick fur. This means they are able to stay warm in extreme temperatures that can get as low as -50°C .

2.7 This question is level-marked:

Level	Marks	Description
3 (detailed)	7–9	<ul style="list-style-type: none"> • Thorough, detailed, organised, and relevant throughout with supporting evidence and examples • Communicates detailed, clear knowledge and understanding • Communicates using developed statements and ideas (e.g. uses connectives to fully explore ideas) • Good use of geographical terms and vocabulary
2 (clear)	4–6	<ul style="list-style-type: none"> • Sound throughout with some supporting evidence and examples • Communicates some knowledge and understanding • Communicates using linked statements and ideas (e.g. uses connectives, but needs further development) • Some use of geographical terms and vocabulary
1 (basic)	1–3	<ul style="list-style-type: none"> • Basic throughout with limited supporting evidence and/or examples • Communicates limited knowledge and understanding • Communicates using simple statements that are not developed • Little or no use of geographical terms and vocabulary
	0	No relevant content

3-marks: SPaG (spelling, punctuation, grammar, and specialist terminology)

Marks	Description
3	<ul style="list-style-type: none"> • Accurate spelling and punctuation • Rules of grammar followed • Effective control of meaning • Uses wide range of specialist terms
2	<ul style="list-style-type: none"> • Generally accurate spelling and punctuation • Most rules of grammar followed • General control of meaning • Uses good range of specialist terms
1	<ul style="list-style-type: none"> • Reasonably accurate spelling and punctuation • Some rules of grammar followed – errors do not hinder meaning • Some control of meaning • Limited use of specialist terms
0	<ul style="list-style-type: none"> • Writes nothing • Does not relate to question • Basic grasp of spelling, punctuation, and grammar prevents clear meaning

Example answer: *Cold environments provide challenges to plants and animals due to their very cold temperatures, winds, and low precipitation. Animals like Arctic foxes have adapted to this environment by having thick fur to keep warm and black noses that help to absorb heat. These adaptations are also found in polar bears that are further adapted to the cold temperatures by having a thick layer of insulating fat.*

Biodiversity is low in cold environments, which means that animals have to travel long distances in search of food. Polar bears have adapted to this by having wide paws that mean they do not sink into the snow and their white coats are similar to Arctic foxes and provide camouflage from predators.

Plants like the bearberry plant have adapted by being very low growing which protects them against the strong winds. Their hairy stems retain heat while the leathery leaves help to keep moisture, which is scarce in this cold and dry environment. Other plants have adapted to the cold by being able to flower very quickly to take advantage of the short growing seasons. Overall, plants and animals have adapted in a variety of ways to the challenge posed by the very cold temperatures and low precipitation.

3.1 Rainforest ecosystems have high average temperatures and high rainfall.

Accept other suitable answers.

3.2 This question is level-marked:

Level	Marks	Description
2 (clear)	3–4	<ul style="list-style-type: none"> • Sound, organised and relevant throughout, using supporting evidence and examples • Communicates good knowledge and understanding • Communicates using developed statements and ideas (e.g. uses connectives) • Uses geographical terms and vocabulary
1 (basic)	1–2	<ul style="list-style-type: none"> • Basic throughout with limited supporting evidence and/or examples • Communicates limited knowledge and understanding • Explanations are partial • Little or no use of geographical terms and vocabulary
	0	No relevant content

Example answer: *Plants in tropical rainforests face a challenge of accessing light. The vegetation is so dense in the rainforest that the forest floor is very dark. Plants are therefore in a constant battle for light and rely on adaptations to survive. They must also survive in an extremely wet environment. This means their leaves might rot if the regular rainwater is left sitting on them. Adaptations like drip tip leaves can help them survive in this environment.*

3.3 Subsistence agriculture is when local people use land to grow food for themselves and their families. It is causing rainforest deforestation because of the large numbers of farmers clearing land to grow crops. As the soils quickly lose their nutrients, farmers must clear more land. Subsistence agriculture accounts for about 25% of deforestation in the Amazon.