

		- Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall - Learners use a limited range of specialist terms as appropriate. No marks awarded - The learner writes nothing - The learner's response does not relate to the question - The learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.	
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Section B

Qu	Pt	Marking guidance	Total marks
02	1	Using Figure 6, which one of the following statements is true? One mark for the correct answer: C. Moles eat beetles No credit if two or more statements are shaded. AO4 – 1 mark	1
02	2	Suggest what would happen in the food web shown in Figure 6 if foxes became extinct. One mark for each basic point or two marks for developed suggestion. Possible increase in the number of some primary and secondary consumers (1), particularly moles/rabbits (d) (1) There would be fewer predators (1) Increase in number of moles/ rabbits (1) However the number of beetles might eventually decrease (1) Possible fewer plants as numbers of primary consumers / rabbits increase (1) Fewer beetles means fewer mice / tawny owls (1). AO3 – 2 marks	2
02	3	State one role of decomposers in an ecosystem. Decomposers help to return nutrients/energy to the soil (1) They break down dead plants and animals/organic waste or excreted material (1) They release energy from a plant or animal so that it can be recycled. (1) AO1 – 1 mark	1

02	4	Calculate the percentage loss in biomass between the primary consumer and secondary consumer levels. B. 97.5% No credit if two or more statements are shaded. A04 – 1 mark	1
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02	5	Give two reasons why the biomass changes between each level in the food chain. E.g. (Loss of energy through) respiration (1) (Loss of energy through) movement (1) (Loss of energy through) excretion (1) (Loss of energy through) digestion (1) Energy loss through heat (1) Energy is used for life processes (1) Faeces and remains are passed to decomposers (1) The entire organism is not consumed or digested / Parts such as roots, woody stems, bones, scales, feathers aren't eaten. (1) AO1 – 2 marks	2
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02	6	Using Figure 8, which part of the rainforest matches the following description? An almost continuous layer of branches and leaves between 15 and 30 metres high. B. Upper canopy No credit if two or more statements are shaded. AO4 – 1 mark	1
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02	7	Using Figure 8, describe one characteristic of the base of the taller trees. Buttressed roots (1) The base is wider than the rest of the trunk (as roots extend into the ground) (1) Wide base (1) AO4 – 1 mark	1
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02	8	Give one effect of deforestation on the soils of the rainforest. They become less fertile (1) They become drier (as there is less protection) (1) They are eroded/washed away (as roots no longer hold them in place) (1) They lose their nutrients/rainwater may cause leaching (1) They turn red/they may have a reddish colour due to presence of iron oxide (1) AO1 – 1 mark	1
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02	9	‘Plants and animals adapt in order to survive in a hostile environment.’ Explain this statement. Use either Figure 9 or Figure 10 and your own understanding. <table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>3 (Detailed)</td><td>5–6</td><td>AO2 Shows thorough geographical understanding of the ways that plants and animals survive in a hostile environment. AO4 Demonstrates relevant and effective use of photographic evidence of plant and animal adaptations.</td></tr><tr><td>2 (Clear)</td><td>3–4</td><td>AO2 Shows some geographical understanding of the ways that plants and/or animals survive in a hostile environment. AO4 Demonstrates reasonable use of photographic evidence of plant and/or animal adaptations.</td></tr><tr><td>1 (Basic)</td><td>1–2</td><td>AO2 Shows limited geographical understanding of the ways that plants and/or animals survive in a hostile environment. AO4 Demonstrates limited use of photographic evidence of plant and/or animal adaptations.</td></tr><tr><td></td><td>0</td><td>No relevant content</td></tr></table> • Level 3 (detailed) responses will be developed. Appropriate use of Figure 9 or 10 (direct or inferred) and specific own understanding. • Level 2 (clear) responses are likely to be linked statements with some elaboration. Some use of Figure 9 or 10 (direct or inferred) and/or own understanding. • Level 1 (basic) responses are likely to consist of simple statements, with limited use of subject vocabulary. May only use information derived from Figure 9 or 10.	Level	Marks	Description	3 (Detailed)	5–6	AO2 Shows thorough geographical understanding of the ways that plants and animals survive in a hostile environment. AO4 Demonstrates relevant and effective use of photographic evidence of plant and animal adaptations.	2 (Clear)	3–4	AO2 Shows some geographical understanding of the ways that plants and/or animals survive in a hostile environment. AO4 Demonstrates reasonable use of photographic evidence of plant and/or animal adaptations.	1 (Basic)	1–2	AO2 Shows limited geographical understanding of the ways that plants and/or animals survive in a hostile environment. AO4 Demonstrates limited use of photographic evidence of plant and/or animal adaptations.		0	No relevant content	6
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		• Responses should refer to one or both photographs in Figure 9 or Figure 10 (directly or inferred) to access Level 3. • Both plant and animal adaptation(s) are required to access Level 3 <u>Indicative content</u> • The command word “explain” is used, which means to provide a reasoned account of the ways that animals and plants adapt to either a hot desert or cold environment. Hot desert environment (based on Figure 9) • Understanding of hot desert as a hostile environment. Rainfall less than 250mm per year, high daytime temperatures (up to 50 °C) but cool at night. Plants and animals have developed adaptations which allow them to survive in hot and dry conditions. Very little biodiversity in hot deserts because of the harsh climate. • Understanding of plant adaptations. These include: ○ No leaves or small seasonal leaves that only grow after it rains - this helps reduce water loss during photosynthesis. ○ Many plants have long root systems – these spread out wide or go deep into the ground to absorb water. ○ Short life cycles - some plants germinate in response to rain, grow, flower, produce new seeds and die over a short period. ○ Leaves with hair - these help shade the plant, reducing water loss. Other plants have leaves that turn throughout the day to expose a minimum surface area to the heat. ○ Waxy coating on stems and leaves - this helps to reduce water loss. ○ Many plants are slower growing – this requires less energy. The plants don't have to make as much food and therefore do not lose as much water. • Use of Figure 9. Cacti are well adapted for survival in the desert. They have: ○ Stems that can store water. ○ Spines instead of leaves. These minimise the surface area and so reduce water loss. The spines may also protect the cacti from animals that might eat them. ○ Thick waxy skin to reduce water loss through pores. • General density of vegetation is low. Plants are spread out across the landscape so they can draw in water without competition from other plants. Photo shows thorny shrubs with few leaves. Prickly pear cactus in background, storing water in its pads. • Understanding of animal adaptations. Animals may have large ears to give off heat (e.g. Fennec fox), produce little urine to save water, are active only at night to avoid heat (e.g. cottontail rabbit).	
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- **Use of Figure 9**

Camels are well adapted and can cope with wind-blown sand and cold at night. They have:

- Thick fur on the top of the body for shade, and thin fur elsewhere to allow easy heat loss.
- Large surface area which maximises heat loss.
- Large, flat feet to spread their weight on the sand.
- Ability to go for a long time without water – they lose very little through urination and sweating.
- A fatty hump which provides energy in times of food shortages.
- Ability to tolerate body temperatures up to 42°C.
- Slit-like nostrils and two rows of eyelashes to help keep the sand out of their eyes.

Cold environments (based on **Figure 10**)

- Understanding of cold hostile environments. Credit reference to polar and/or tundra landscapes. These ecosystems have long cold winters and short cool summers. The tundra has low precipitation (less than 200 mm per year) and dry winds. These conditions make the Arctic tundra a desert-like climate. Ground consists of permafrost, with thin active layer in summer. Very short growing season.

- Understanding of plant adaptations. Plants in the tundra have adapted in a variety of ways;

Plants grow close together, low to the ground and they remain small.

Soils are often waterlogged because of the permafrost underneath, so only hardy plants like moss can cope with seasonal drought and waterlogging. Some plants have a waxy, hairy coating which helps to shield them from the cold and the wind, and protects plant seeds.

They have small leaves, which helps the plants to retain moisture. Only the top layer of soil thaws out, therefore plants have very shallow root systems. Plants like lichens and moss can survive on bare rock with a bit of moisture. Most plants don't die off in the winter; they have long life cycles to help with the short growing season. This means photosynthesis can begin immediately once the sunlight is strong enough as plants don't need to regrow leaves.

- **Use of Figure 10**

Harsh environment means that very little vegetation grows. Some plants like arctic poppy flower quickly, even whilst the snow is still melting. They also have cup shaped flowers that face the sun to capture as much sunlight as possible. They appear to grow in clumps in stony soil that absorbs the sun's heat and provide shelter for the roots.

	• Understanding of animal adaptations. Animals need shelter and insulation in tundra and polar regions. They tend to have thicker and warmer feathers and fur. Many of them have larger bodies and shorter arms, legs and tails which helps them retain their heat better and prevent heat loss. Many birds have two coats of feathers to help keep them warm. Animals often have feet lined with fur to help keep them warm. Many also migrate to warmer climates during the harsh winter months. Some animals (bears, marmot, arctic squirrels) hibernate for the winter and others will burrow (lemmings, ermine). Many insects spend entire life buried in the soil, rocks or plants which acts as a shelter. • Use of Figure 10 Polar bears have thick fur, an insulating layer of fat, with a black nose and footpads to absorb sunshine. Front feet are large, flat and oar-like, making them excellent swimmers. Sharp claws and teeth are ideal for catching and eating prey, and small ears reduce heat losses. • Credit idea of adaptation to climate change – forcing some animals to migrate longer distances, to forage more widely eg polar bears and arctic foxes. AO2 – 3 marks AO4 – 3 marks	
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02	10	Either To what extent is human activity the cause of desertification in areas on the fringes of hot deserts? or To what extent are cold environments at risk from economic development and therefore in need of protection? <u>Hot deserts</u> <table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>3 (Detailed)</td><td>7–9</td><td>AO1 Demonstrates detailed knowledge of threats from human activities in environments on the fringe of hot deserts. AO2 Shows thorough geographical understanding of the interrelationships between places, environments and processes in the context of environments on the fringe of hot deserts. AO3 Demonstrates application of knowledge and understanding in a coherent and reasoned way in evaluating the extent to which human activity poses a risk to environments on the fringe of hot deserts.</td></tr><tr><td>2 (Clear)</td><td>4–6</td><td>AO1 Demonstrates clear knowledge of threats from human activities in environments on the fringe of hot deserts. AO2 Shows some geographical understanding of the interrelationships between places, environments and processes in the context of environments on the fringe of hot deserts. AO3 Demonstrates reasonable application of knowledge and understanding in evaluating the extent to which human activity poses a risk to environments on the fringe of hot deserts.</td></tr><tr><td>1 (Basic)</td><td>1–3</td><td>AO1 Demonstrates limited knowledge of threats from human activities in environments on the fringe of hot deserts. AO2 Shows slight geographical understanding of the interrelationships between places, environments and processes in the context of environments on the fringe of hot deserts. AO3 Demonstrates limited application of knowledge and understanding in evaluating the extent to which human activity poses a risk to environments on the fringe of hot deserts.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table>	Level	Marks	Description	3 (Detailed)	7–9	AO1 Demonstrates detailed knowledge of threats from human activities in environments on the fringe of hot deserts. AO2 Shows thorough geographical understanding of the interrelationships between places, environments and processes in the context of environments on the fringe of hot deserts. AO3 Demonstrates application of knowledge and understanding in a coherent and reasoned way in evaluating the extent to which human activity poses a risk to environments on the fringe of hot deserts.	2 (Clear)	4–6	AO1 Demonstrates clear knowledge of threats from human activities in environments on the fringe of hot deserts. AO2 Shows some geographical understanding of the interrelationships between places, environments and processes in the context of environments on the fringe of hot deserts. AO3 Demonstrates reasonable application of knowledge and understanding in evaluating the extent to which human activity poses a risk to environments on the fringe of hot deserts.	1 (Basic)	1–3	AO1 Demonstrates limited knowledge of threats from human activities in environments on the fringe of hot deserts. AO2 Shows slight geographical understanding of the interrelationships between places, environments and processes in the context of environments on the fringe of hot deserts. AO3 Demonstrates limited application of knowledge and understanding in evaluating the extent to which human activity poses a risk to environments on the fringe of hot deserts.		0	No relevant content.	9
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	0	No relevant content.																

		• Level 3 (detailed) responses will be well developed. Reasoned examination of a range of causes of desertification with some evaluation of extent to which human activity is responsible. • Level 2 (clear) responses will have linked or elaborated statements and some accurate use of geographical terms. May outline several causes of desertification. May start to make an evaluation of the extent to which human activity is responsible. • Level 1 (basic) responses are likely to consist of simple statements, with limited use of subject vocabulary. Might be limited to generic statements, or a list of risks to the environment without development. May be limited to a single cause of desertification. May make a limited evaluation. <u>Indicative content for hot deserts</u> • The command “to what extent” means that responses may state the degree to which human activity causes desertification, with some support for the view expressed. E.g. The statement may be completely untrue, true to some extent (partly but not completely true), to a great extent, or completely true. • Knowledge of areas affected by the process. 20% of the world’s population, in over 60 countries, have to cope with the threat of desertification. For instance, the Sahara has advanced over 250km southwards in the past 100 years. • Understanding of how desertification occurs – the process of fertile land changing into desert typically as a result of deforestation, drought, or improper/inappropriate agriculture. Causes which link to human activity include: • Population growth – more people needing more food which puts pressure on the land. • Migration- leads to greater population pressure. Drought and desertification in one region will displace people to another fragile environment. • Overgrazing – too many goats, sheep, cattle can destroy the vegetation. Nomadic groups are now restricted in movement and this places more pressure on land resources. The soil may turn to dust and become infertile. • Overcultivation – growing too much without allowing the soil to recover means it becomes exhausted. • Deforestation – trees are cut down for fuel and building. The loss of roots makes the soils more fragile. They are exposed to wind and the rain, leading to gully erosion. • War – many sub-Saharan countries have suffered for years from civil war, where crops and animals have been destroyed, leading to famine. Millions of people have been forced to move into desert fringe areas by armed conflicts. Some become refugees. The resources in and around the cities and camps where these people settle come under severe	
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pressure.

- Enhanced greenhouse effect, partially caused by human activity globally, may contribute to increased risks of drought and higher temperatures in areas on fringe of hot deserts.
- Other threats include extraction of mineral resources and fossil fuels and high impact tourism in vulnerable areas such as the edge of the Thar desert and in East Africa.
- Understanding of natural factors leading to desertification. Less rainfall, higher temperatures which lead to increased evaporation/drought, or rainfall becoming more irregular, which means that vegetation dies and soils dry out and are removed by soil erosion. Climate is changing; this is part of a natural cycle of climate change as ocean currents and patterns of winds change. Human and physical factors may be linked.
- Credit examples of desertification e.g. In Kenya, nomadic Masai farmers have been forced onto marginal land. Traditional migration patterns have been affected and they have been forced to use smaller areas of land for their cattle. Overgrazing has resulted from this, leading to soil erosion by wind and water.
- Evaluation of extent to which human activities pose a risk. E.g. although climate change, as part of a natural cycle, may contribute to desertification, there is little doubt that human misuse of the land poses a major threat. Desertification is a huge environmental problem affecting many countries on the edge of hot deserts, which to a great extent is driven by human factors.

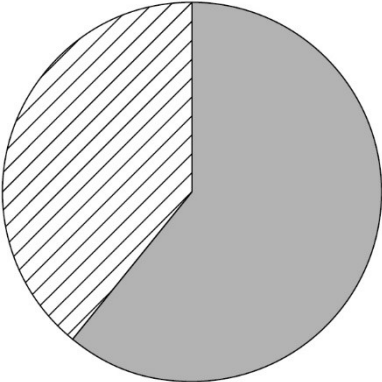
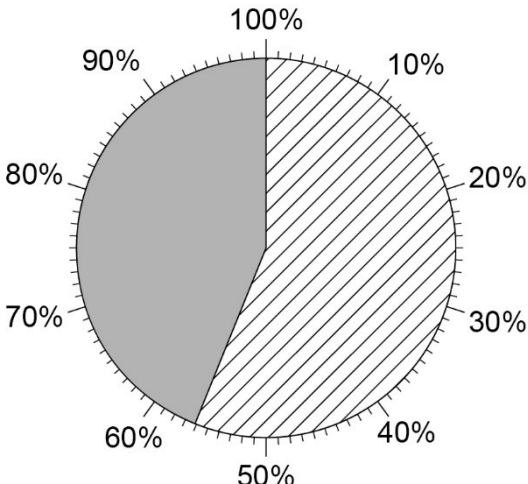
Cold environments

Level	Marks	Description
3 (Detailed)	7–9	AO1 Demonstrates detailed knowledge of threats from human activities in cold environments. AO2 Shows thorough geographical understanding of the interrelationships between places, environments and processes in the context of cold environments. AO3 Demonstrates application of knowledge and understanding in a coherent and reasoned way in evaluating the extent to which human activity poses a risk to cold environments and the consequent need for protection.
2 (Clear)	4-6	AO1 Demonstrates clear knowledge of threats from human activities in cold environments. AO2 Shows some geographical understanding of the interrelationships between places, environments and processes in the context of cold environments. AO3 Demonstrates reasonable application of knowledge and understanding in evaluating the extent to which human activity poses a risk to

			cold environments and the consequent need for protection.	
	1 (Basic)	1-3	AO1 Demonstrates limited knowledge of threats from human activities in cold environments. AO2 Shows slight geographical understanding of the interrelationships between places, environments and processes in the context of cold environments. AO3 Demonstrates limited application of knowledge and understanding in evaluating the extent to which human activity poses a risk to cold environments and the consequent need for protection.	
		0	No relevant content.	
	• Level 3 (detailed) responses will be well developed. Reasoned examination of a risk(s) to cold environments with some evaluation of extent to which protection is needed. • Level 2 (clear) responses will have linked or elaborated statements and some accurate use of geographical terms. May outline several risks to cold environments. May start to make an evaluation of the extent to which environmental protection is needed. • Level 1 (basic) responses are likely to consist of simple statements, with limited use of subject vocabulary. Might be limited to generic statements, or a list of risks to the environment without development. May be limited to a single risk caused by human activity. May make a limited evaluation. • Max L2 if answer does not refer to the need for protection of cold environments <u>Indicative content for cold environments.</u> • The command “to what extent” means that responses may state the degree to which human activity poses a risk to cold environments. E.g. the statement may be completely untrue, true to some extent (partly but not completely true), to a great extent, or completely true. • Cold environments are fragile and they can be easily damaged by human activities. Tundra vegetation takes a very long time to grow. Relatively minor developments such as constructing a footpath can have serious long-term effects. Tyre tracks can be seen for many years after they were made. When the Sun hits the ruts it causes the permafrost to melt; this causes erosion and the ruts get bigger, and eventually the ruts turn into gullies. • Mining - mines have opened up resources, such as gold and diamonds, under the land in tundra regions, e.g. Arctic Canada. Roads, housing and supply bases are built. This increases the number of vehicles in the			

		tundra creating noise and air pollution. • Pollution from mining and oil drilling has contaminated the air, lakes and rivers. Burst pipes have spilt hundreds of thousands of gallons of crude oil in Alaska and Siberia. Oil spills have caused serious water pollution. Some animals' movements to traditional feeding and nesting grounds have been disrupted by oil pipelines. E.g. Alaska- Prudhoe Bay to Valdez raised pipeline. • Natural gas is extracted from gas fields e.g. in western Siberia. Natural gas is pumped from beneath the permafrost and piped across the tundra. Risk of rupture to pipelines and pollution. • Pesticides have been used to control the masses of insects. Migrating birds feed on the insects and are poisoned or die due to their food source being removed. • Problems with melting of permafrost where buildings and roads not constructed properly. • Illegal hunting and fishing is threatening the numbers of certain species, e.g. whales. Species of animals such as polar bears are highly specialised so find it difficult to adapt to change. • Tourism impacts are increasing – the rise in visitor numbers threatens animal breeding patterns and passenger boats affect the marine environment. • Threats to environment resulting from human induced climate change. Polar ice caps are melting because of an increase in global warming. As the tundra melts, the plant matter decomposes and returns carbon dioxide to the atmosphere, causing further warming. Rising sea levels, increased risks of flooding in some low-lying coastal areas. • Understanding the need for protection of fragile cold environments. Reasons for protection: indigenous people live traditional lives, depending on wildlife; many species of birds and animals are threatened; areas are important for scientific research; snow reflects sunlight and helps regulate temperatures; permafrost contains methane, which if released could worsen global warming. Role of sustainable management, appropriate technology, international agreements, conservation strategies to protect cold environments. • Evaluation of risk to environment from human activity. The tundra environment is among the least disturbed ecosystems in the world. However, that is changing with the discovery of large reserves of raw materials. Any damage to the tundra landscape is slow to recover. The greatest threat may be the impact of human-induced climate change. AO1 – 3 marks AO2 – 3 marks AO3 – 3 marks	
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Section A

Qu	Pt	Marking Guidance	Total marks
01	1	Complete Figure 1 below using the following data. One mark for correctly drawing the sectors. Second mark for correct shading, to match key, or clear labelling of sectors. Segments can be drawn in any order. 1980  Key Rural Urban 2020  AO4 – 2 marks	2
01	2	Using Figure 1, which of the following statements is true? One mark for the correct answer. B - decreased by 17% No credit if two or more statements are shaded. AO4 – 1 mark	1

01	3	Give two push factors that encourage people to leave rural areas in LICs/NEEs. One mark for each correct answer. Credit any reasonable factor which states or implies a negative aspect of the rural area eg food shortages, poor access to education/health care, limited job opportunities, low wages, conflict, natural disasters. Credit comparative statements eg 'poorer access to healthcare than in urban area'. No credit for pull factors. AO1 – 2 marks	2															
01	4	Give one way a major city in a LIC/NEE is nationally important. Credit any reasonable statement in relation to the named city. eg Mumbai – the main financial centre for India/has HQ of important banks/stock exchange. Rio de Janeiro – home to universities/research centres. Lagos – home to 80% of Nigeria's industry/responsible for 30% of Nigeria's GDP. Capital city - if relevant to named city. No credit for naming country. No credit for HIC city. AO1 – 1 mark	1															
01	5	To what extent is managing environmental issues, such as waste disposal, a challenge in cities in LICs/NEEs? Use Figure 2 and your own understanding. <table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>3 (Detailed)</td><td>5–6</td><td>AO2 – Shows detailed understanding of the environmental issues in cities in LICs/NEEs. AO3 – Demonstrates thorough application of knowledge and understanding in evaluating the extent to which environmental issues can be managed.</td></tr><tr><td>2 (Clear)</td><td>3–4</td><td>AO2 – Shows clear understanding of the environmental issues in cities in LICs/NEEs. AO3 – Demonstrates reasonable application of knowledge and understanding in evaluating the extent to which environmental issues can be managed.</td></tr><tr><td>1 (Basic)</td><td>1–2</td><td>AO2 – Shows basic understanding of the environmental issues in cities in LICs/NEEs. AO3 – Demonstrates limited application of knowledge and understanding in evaluating the extent to which environmental issues can be managed.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table>	Level	Marks	Description	3 (Detailed)	5–6	AO2 – Shows detailed understanding of the environmental issues in cities in LICs/NEEs. AO3 – Demonstrates thorough application of knowledge and understanding in evaluating the extent to which environmental issues can be managed.	2 (Clear)	3–4	AO2 – Shows clear understanding of the environmental issues in cities in LICs/NEEs. AO3 – Demonstrates reasonable application of knowledge and understanding in evaluating the extent to which environmental issues can be managed.	1 (Basic)	1–2	AO2 – Shows basic understanding of the environmental issues in cities in LICs/NEEs. AO3 – Demonstrates limited application of knowledge and understanding in evaluating the extent to which environmental issues can be managed.		0	No relevant content.	6
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	0	No relevant content.																

01	3	Give one way in which a major city in an LIC/NEE is regionally important. Credit any reasonable statement in relation to the named city. Allow wide interpretation of 'regional' as both supra and intra-national. Eg Lagos – a main financial centre (for West Africa). Rio de Janeiro – Cultural capital for Brazil / Olympic host city. Mumbai – major port/ Bollywood No credit for HIC city. AO1 = 1 mark	1
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01	4	Explain how urban planning is improving quality of life for the urban poor. Use Figure 2 and an LIC/NEE example you have studied. <table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>3 (Detailed)</td><td>5–6</td><td>AO2 – Shows detailed understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates thorough application of knowledge and understanding to offer analysis of the example provided and / or the link in broader terms.</td></tr><tr><td>2 (Clear)</td><td>3–4</td><td>AO2 – Shows clear understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates some application of knowledge and understanding through some analysis of the example provided and / or the link in broader terms.</td></tr><tr><td>1 (Basic)</td><td>1–2</td><td>AO2 – Shows limited understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates limited application of knowledge and understanding through basic analysis of the example provided and / or the link in broader terms.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> • Level 3 responses will cover the figure and either a named example or well-developed geographical knowledge and provide a considered analysis of the link. • Level 2 responses will show reasonable understanding of the link using the figure and an example / clear geographical knowledge or more considered analysis for just the figure or example used. • Level 1 responses will show simple understanding of the link using the figure and / or a named example / simple geographical knowledge. • Max top L2 if only appropriate example or Figure 2 covered. • Max top L2 if no example. • Max L1 for HIC example	Level	Marks	Description	3 (Detailed)	5–6	AO2 – Shows detailed understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates thorough application of knowledge and understanding to offer analysis of the example provided and / or the link in broader terms.	2 (Clear)	3–4	AO2 – Shows clear understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates some application of knowledge and understanding through some analysis of the example provided and / or the link in broader terms.	1 (Basic)	1–2	AO2 – Shows limited understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates limited application of knowledge and understanding through basic analysis of the example provided and / or the link in broader terms.		0	No relevant content.	6
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1 (Basic)	1–2	AO2 – Shows limited understanding of the relationship between urban planning and quality of life for poorer people. AO3 – Demonstrates limited application of knowledge and understanding through basic analysis of the example provided and / or the link in broader terms.																
	0	No relevant content.																

	<u>Indicative content</u> • Full specification requires an example of urban planning in the context of an LIC/NEE to be studied and candidates should use this. Credit references to schemes which have been planned even if the word planning is not stated. • Answers should make use of both Figure 2 and a named city in a LIC/NEE, balance is not required. • Reference to Figure 2 may be inferred even if not explicitly stated through comment on improvements to infrastructure relating to quality of life. • Figure 2 shows how living conditions, notably water and sanitation, can be improved but that governments need to be involved also. Clearly clean water and better sanitation will reduce incidence of disease and more durable housing helps residents feel settled and more secure, both of which improve quality of life. • The command ‘explain’ requires a link to be established between the planning / actions taken and how the quality of life is improving as a result. • Specific examples may be used such as the Favela-Barrio scheme in Rio or more general approaches such as improving traffic infrastructure in Lagos. • eg Favela-Barrio: day care centres provide adult education classes to improve job prospects so that employment is more secure; poorly built houses are replaced with brick structures and ownership rights are granted so danger of eviction and therefore stress are reduced. • eg Lagos has developed a Bus Rapid Transit and light railway system to carry more people into the city which will improve access to employment and thereby increase pay and quality of life. AO2 = 3 marks AO3 = 3 marks	
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01	5	Suggest how developments such as this can help urban areas to become more sustainable. Use Figure 3 and your own understanding. <table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>2 (Clear)</td><td>3–4</td><td>AO2 – Shows clear understanding of urban areas and the concept of sustainability. AO3 – Uses Figure 3 effectively and offers development to interpret the link between the developments shown and sustainability.</td></tr><tr><td>1 (Basic)</td><td>1–2</td><td>AO2 – Shows limited understanding of urban areas and the concept of sustainability. AO3 – Uses Figure 3 OR own knowledge to begin to interpret the link between the developments shown and sustainability.</td></tr><tr><td></td><td>0</td><td>No relevant content.</td></tr></table> • Level 2 responses will apply geographical knowledge and understanding in combination with the figure to present a reasoned interpretation. • Level 1 responses will show simplistic interpretation or simply assert a cause / effect link • No credit for description of urban sustainability in isolation. <u>Indicative content</u> • Answers should make use of Figure 3 which should be clear through reference to specific developments shown in the figure or more implicit through reference to sustainable transport developments. • Development need not be through use of a named place but use of an example may add clarity and should be credited. Development may also be found in explanation of urban sustainability and how it might be achieved. • From Figure 3: bus routes promote public transport which reduces fuel consumption and congestion thereby reducing emissions with both environmental and social benefits; clear separate cycle lanes will make cycling easier and safer for people; solar panels use renewable energy and reduce fossil fuel dependency and greenhouse gas emissions; LED lighting will reduce energy consumption; adding green roofs creates green space and will increase wildlife habitats with environmental benefits; recycling concrete for the base of the shelter saves both the primary resources and the energy used in concrete manufacture. • All aspects of urban sustainability are valid ie environmental, social, economic and political and full marks may be obtained for full development of one aspect. • Expect to see: BedZed, Freiburg, Greenhouse Leeds and Curitiba as popular examples. • Own knowledge will vary based on the aspects or example chosen but is likely to cover similar ideas with other possible themes from the specification that are not shown in the figure being: water conservation and waste recycling. AO2 = 2 marks AO3 = 2 marks	Level	Marks	Description	2 (Clear)	3–4	AO2 – Shows clear understanding of urban areas and the concept of sustainability. AO3 – Uses Figure 3 effectively and offers development to interpret the link between the developments shown and sustainability.	1 (Basic)	1–2	AO2 – Shows limited understanding of urban areas and the concept of sustainability. AO3 – Uses Figure 3 OR own knowledge to begin to interpret the link between the developments shown and sustainability.		0	No relevant content.	4
Level	Marks	Description													
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	0	No relevant content.													

01	6	Complete Figure 4 using the following data. One mark for correct completion of graph. 0.1% lower than Luton to the immediate left. Width can be ignored, shading not needed Population growth rate (%) 2011 – 2036 (projected) <table><tr><th>Urban area</th><th>Population growth rate (%) 2011 – 2036 (projected)</th></tr><tr><td>Cardiff</td><td>32.7</td></tr><tr><td>Coventry</td><td>30.8</td></tr><tr><td>Milton Keynes</td><td>29.3</td></tr><tr><td>Aberdeen</td><td>28.7</td></tr><tr><td>Edinburgh</td><td>28.4</td></tr><tr><td>London</td><td>28.1</td></tr><tr><td>Crawley</td><td>28.0</td></tr><tr><td>Luton</td><td>26.6</td></tr><tr><td>Swindon</td><td>26.5</td></tr><tr><td>Peterborough</td><td>24.1</td></tr></table>	Urban area	Population growth rate (%) 2011 – 2036 (projected)	Cardiff	32.7	Coventry	30.8	Milton Keynes	29.3	Aberdeen	28.7	Edinburgh	28.4	London	28.1	Crawley	28.0	Luton	26.6	Swindon	26.5	Peterborough	24.1	1
Urban area	Population growth rate (%) 2011 – 2036 (projected)																								
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		AO4 = 1 mark																							

01	7	Calculate the range of population growth rate (%), 2011–2036 (projected) for the urban areas shown in Figure 4. One mark for the correct answer. C – 8.6% No credit if two or more answers are shaded. AO4 = 1 mark	1
01	8	Compare the distribution of the 10 highest and 10 lowest urban areas shown in Figure 5. One mark for an initial overall descriptive comment or single relevant descriptive statement eg • Most of the highest in the south and east / lowest in the north (1). • All of the lowest growing ones are in England / 7 of the highest ones (1). • Most of the lowest growing are on the coast / most of the highest are inland (1). Second mark may be a second separate point <u>or</u> developed point for further descriptive clarity, eg • Highest in the south and east / lowest in the north (1) with all the lowest in England / three of the highest not in England (d)(1). • All of the lowest growing ones are in England / 7 of the highest ones (1) so the highest growing cities are more widely distributed / the 2 furthest north actually amongst the highest growing (d)(1). • Most of the lowest growing are on the coast (1) but most of the highest are inland (d)(1). Credit reference to 'Midlands' for 10 lowest in UK context. AO4 = 2 marks	2

01	9	Outline how international migration has affected a UK city you have studied. Credit one migration and consequent change only. One mark for a basic statement, eg • Migration means cities have got bigger (1). • Migration from other countries means some cities have areas dominated by the new population (1). • People from other countries bring shops and building styles that are different from what was there before (1). Two marks for a developed idea, eg • Migrants from other countries will often live near to each other for support (1) and so they will become the majority population in the area, meaning you are as likely to hear the migrant language spoken on the street as you are English (d) (1). • The clustering of many migrants from China in one place in London has led to the development of Chinatown (1) where many buildings are in Chinese style and there are a number of Chinese supermarkets (d) (1). Max 1 mark if city not named or clearly able to be inferred or non-UK city. Max 1 if the migration is not international, at least implicitly. Allow named area of a city AO1 = 2 marks	2
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01	10	Assess the challenges created by urban change in a UK city you have studied.	9												
<table><tr><th>Level</th><th>Marks</th><th>Description</th></tr><tr><td>3 (Detailed)</td><td>7–9</td><td>AO1 – Demonstrates detailed knowledge of places and processes in urban environments. AO2 – Shows a thorough understanding of how urban change in the UK creates challenges. AO3 – Demonstrates thorough application of knowledge and understanding to make thorough assessment of the challenges in a UK city.</td></tr><tr><td>2 (Clear)</td><td>4–6</td><td>AO1 – Demonstrates reasonable knowledge of places and processes in urban environments. AO2 – Shows clear understanding of how urban change in a UK city creates challenges. AO3 – Demonstrates reasonable application of knowledge and understanding to make partial assessment of the challenges in a UK city.</td></tr><tr><td>1 (Basic)</td><td>1–3</td><td>AO1 – Demonstrates limited knowledge of places and processes in urban environments. AO2 – Shows limited understanding of how urban change in a UK city creates challenges.</td></tr></table>				Level	Marks	Description	3 (Detailed)	7–9	AO1 – Demonstrates detailed knowledge of places and processes in urban environments. AO2 – Shows a thorough understanding of how urban change in the UK creates challenges. AO3 – Demonstrates thorough application of knowledge and understanding to make thorough assessment of the challenges in a UK city.	2 (Clear)	4–6	AO1 – Demonstrates reasonable knowledge of places and processes in urban environments. AO2 – Shows clear understanding of how urban change in a UK city creates challenges. AO3 – Demonstrates reasonable application of knowledge and understanding to make partial assessment of the challenges in a UK city.	1 (Basic)	1–3	AO1 – Demonstrates limited knowledge of places and processes in urban environments. AO2 – Shows limited understanding of how urban change in a UK city creates challenges.
Level	Marks	Description													
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1 (Basic)	1–3	AO1 – Demonstrates limited knowledge of places and processes in urban environments. AO2 – Shows limited understanding of how urban change in a UK city creates challenges.													

		AO3 – Demonstrates limited application of knowledge and understanding to make limited assessment of the challenges in a UK city.
	0	No relevant content.

- **Level 3 responses** will provide a more considered assessment with conclusion of the extent / scale of challenges, supported with precise knowledge.
- **Level 2 responses** will provide specific knowledge with implicit assessment of challenge(s) or generically accurate knowledge with well-reasoned assessment of challenge(s).
- **Level 1 responses** will show simple understanding of whether or not challenge(s) result.
- **Max level 2** if no assessment of the challenges.
- **Max Level 2** if no named city / non-UK city with relevant comments
- No credit for discussion of the opportunities.

Indicative content

- The question specifies challenges only but a wide range are available for comment, depending on the city chosen.
- Answers must refer to a named UK city. Likely examples are Liverpool, Bristol, London, Birmingham.
- Credit any significant urban area even if not technically a city eg Teesside, Gateshead.
- The command 'assess' requires some appraisal of the degree to which changes in urban areas in the UK create challenges. There should be an effort to link the change to the resulting issues which are as follows:

Social and economic inequalities in...

- Housing: Poor quality housing in inner city areas is slow to be redeveloped eg £1 houses, Granby Four Streets, Liverpool.
- Education: Students in Filwood, Bristol gained much lower GCSE scores than the Bristol Average (P8 = -0.6 vs -0.1)
- Health: Life expectancy in Aston, Birmingham is only 76, below UK average and lower than areas such as Four Oaks at 85.
- Employment: 9% of adults in Anfield are unemployed.
- All of the above indicating high levels of deprivation eg Filwood, Bristol in the top decile for deprivation nationally and can be linked to the processes of industrial decline.
- Break up of communities, particularly in recent past, due to large scale clearance of unfit housing.
- Maintaining mixed communities as many new developments are dominated by one housing type and therefore one or two social groups eg city centre flats and suburban 'executive' estates.

Environmental...

- Dereliction: see above re £1 houses as they were in such poor condition they couldn't be sold otherwise.
- Building on greenfield and brownfield sites: whilst the former may be cheaper they reduce areas of green space eg Croxteth Park, Liverpool, but the latter require significant investment as they can be contaminated which is

	slow to arrive from private companies eg Urban Splash, Park Hill Flats, Sheffield. • Waste disposal: an increasing problem as city populations grow. • The challenge of maintaining green space as cities grow and unused space is infilled. Urban sprawl on the rural-urban fringe... • See above re greenfield sites, including out-of-town shopping developments eg New Mersey shopping park. • Growth of commuter settlements which lose character and become too expensive for most eg Shenstone, N of Birmingham. • Pressure to develop on the greenbelt. • Ensuring a viable mix of retail / leisure / housing as many new developments become 'commuting ghettos'. Full marks may be achieved for thorough assessment of one or two challenges. AO1 = 3 marks , AO2 = 3 marks, AO3 = 3 marks	
	Spelling, punctuation and grammar (SPaG) Responses with SPaG marks that gain a mark of 0 for the content/skills of the question can still be awarded SPaG marks if the response is judged to be a genuine attempt to answer the question. High performance • Learners spell and punctuate with consistent accuracy. • Learners use rules of grammar with effective control of meaning overall. • Learners use a wide range of specialist terms as appropriate. Intermediate performance • Learners spell and punctuate with considerable accuracy. • Learners use rules of grammar with general control of meaning overall. • Learners use a good range of specialist terms as appropriate. Threshold performance • Learners spell and punctuate with reasonable accuracy. • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. • Learners use a limited range of specialist terms as appropriate. No marks awarded • The learner writes nothing. • The learner's response does not relate to the question. • The learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.	3 2 1 0