GCSE
GEOGRAPHY
8035/2

Paper 2 Challenges in the human environment

Mark scheme

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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

No student should be disadvantaged on the basis of their gender identity and/or how they refer to the gender identity of others in their exam responses.

A consistent use of 'they/them' as a singular and pronouns beyond 'she/her' or 'he/him' will be credited in exam responses in line with existing mark scheme criteria.

Further copies of this mark scheme are available from aqa.org.uk

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Point marked questions marking instructions

The mark scheme will state the correct answer or a range of possible answers, although these may not be exhaustive. It may indicate how a second mark is awarded for a second point or developed idea. It may give an indication of unacceptable answers.

One mark questions will not need ticks or crosses or NC (no credit). 2 and 3 mark questions will require ticks to show where credit is being awarded. The number of ticks must equal the mark awarded. You do not need to use crosses to indicate answers that are incorrect.

Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor is linked to the Assessment Objective(s) being addressed. The descriptor for the level shows the average performance for the level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

All levels marked questions will have the level awarded at bottom left of response, which might be on an additional page. Creditworthy parts of an answer can (optionally) be highlighted.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

Assessment of spelling, punctuation, grammar and use of specialist terminology (SPaG)

Accuracy of spelling, punctuation, grammar and the use of specialist terminology will be assessed via the indicated 9 mark questions. In each of these questions, three marks are allocated for SPaG as follows:

- **High performance** – 3 marks
- **Intermediate performance** – 2 marks
- **Threshold performance** – 1 mark

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.

Assessing SPaG when students use a scribe or word processor

Students using a scribe or word processor can access some, or all, of the marks available for SPaG provided there is sufficient evidence that it is their work. The JCQ scribe cover sheet attached to their scripts must show what was dictated or which facilities were disabled on the word processor.
Students using a scribe can access marks for SPaG as follows:

Students who dictate their answers are eligible for marks awarded for grammar. This is a third of the total marks awarded for SPaG.

Students who dictate their answers and indicate punctuation are eligible for marks awarded for punctuation and grammar. This is two thirds of the total marks awarded for SPaG. The cover sheet must indicate that both punctuation and grammar were dictated.

Students who dictate their answers, indicate punctuation and spell out every word are eligible for all SPaG marks. The cover sheet must indicate that spelling, punctuation and grammar were dictated.

General guidance

- Mark schemes should be applied positively. Examiners should look for qualities to reward rather than faults to penalise. They are looking to find credit in each response they mark. Unless the mark scheme specifically states, candidates must never lose marks for incorrect answers.
- The full range of marks should be used. Examiners should always award full marks if deserved, ie if the answer matches the mark scheme.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked unless the candidate has replaced it with an alternative response.
- Do NOT add ticks to level-marked questions – use the highlight tool/brackets to signify what is relevant.
- Sometimes there are specific "triggers" in the mark scheme that enable higher level marks to be awarded. For instance, an example or case study may be required for Level 3 if it is stated within the question.
- Where a source, such as a photograph or map, is provided as a stimulus it should be used if requested in the question, but credit can often be given for inferred as well as direct use of the source.
- Always be consistent – accept the guidelines given in the mark scheme and apply them to every script.

- If necessary make comments to support the level awarded and to help clarify a decision you have made.
- Examiners should revisit standardised script answers as they apply the mark scheme in order to confirm that the level and the mark allocated is appropriate to the response provided.
- Mark all answers written on the examination paper.

Section A

Qu	Pt	Marking Guidance	Total marks
01	**1**	**What is urbanisation?** The increasing proportion / percentage of the population living in towns and cities. Accept 'in urban areas' for towns and cities. No credit for increasing number or size of city or population. AO1 – 1 mark	**1**
01	**2**	**Which continent is expected to have the most new megacities in 2050?** One mark for the correct answer. **B** Asia No credit if two or more statements are shaded. AO4 – 1 mark	**1**
01	**3**	**What is the expected percentage growth of Nairobi 2022–2050?** One mark for the correct answer. **B** 100% No credit if two or more statements are shaded. AO4 – 1 mark	**1**

01	**4**	**Suggest how natural increase and migration affect growth of LIC/NEE cities.** **Use Figure 2 and your own understanding.**	**4**

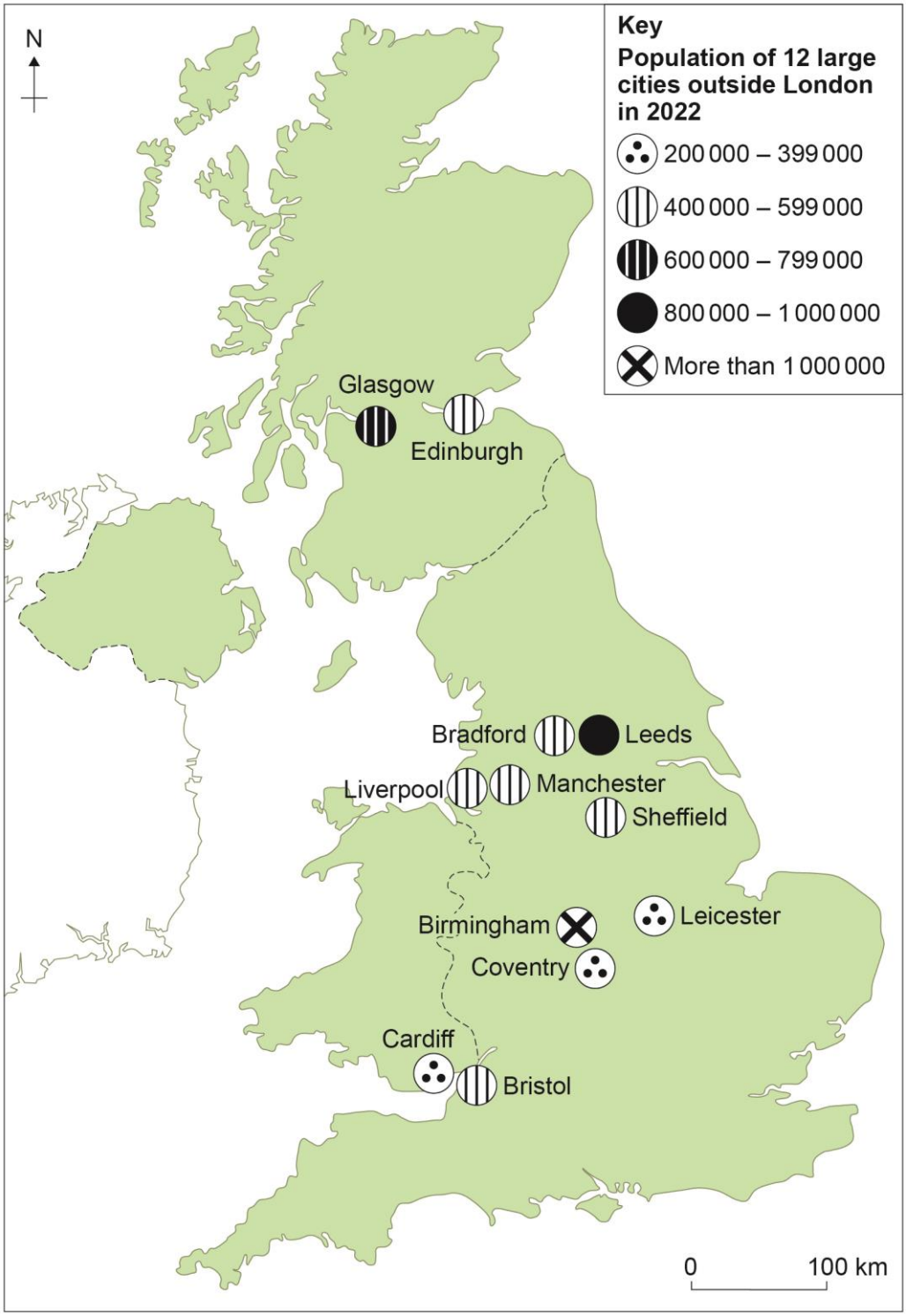
Level	Marks	Description
2 (Clear)	3–4	AO2 – Shows clear understanding of how natural increase and / or migration affect growth. AO3 – Shows clear analysis of **Figure 2** in relation to high urban growth rates.
1 (Basic)	1–2	AO2 – Shows limited understanding of how natural increase and / or migration affect growth. AO3 – Shows limited analysis of **Figure 2** in relation to high urban growth rates.
	0	No relevant content.

- **Level 2 (clear) responses** will show clear understanding of how natural increase and migration affect urban growth with some reference to the figure.
- **Level 1 (basic) responses** will show basic understanding of how natural increase and/or migration affect urban growth by using simple geographical understanding and/or the figure.
- **Max Level 1 without reference to figure 2.**

<u>Indicative content</u>

- Answers should make use of **Figure 2** which may be clear through reference to specific points shown in the figure or more implicit through reference to low median ages in the cities and/or high rates of migration which is shown by the use of a weekly growth figure.
- Development need not be through use of a named place but use of an example may add clarity and should be credited.
- From **Figure 2**: low median age, increase in size of many thousands per week, cities named are expected to be megacities (provide in **Figure 1**).
- Own understanding shown with explanation of how these are typical of many cities in areas that are rapidly urbanising: low median age will mean young people of reproductive age, so larger numbers of children swelling the population; weekly figure shows rapid growth; credit those who manipulate this figure further to show understanding of the scale to give, eg daily total as evidence of the rapidity.
- Credit answers which refer to the effects of a growing population on economic or social issues for the city e.g. a youthful population provides a supply of workers in factories, rapid population growth creates resource and housing pressure
- Credit comments relating to urban sprawl/growth of informal settlements.

AO2 – 2 marks
AO3 – 2 marks

01	**5**	**Complete Figure 3 using the following data.** One mark for each correct shading of the circle according to the key.  AO4 – 2 marks	**2**

01	**6**	**Describe the importance of a named UK city for the rest of the UK.** Credit any reasonable description of importance in relation to the named city. One mark for an initial overall comment or single relevant statement, eg • London is the UK capital (1). • Bristol has many big industries (1). • Liverpool is an important city in the North West (1). Second mark for developing the comment or second separate statement, eg • Birmingham has five universities (1) and is an important transport hub (1). • Bristol has many big industries (1) such as the second biggest concentration of silicon chip manufacturers outside California (1). • Liverpool is an important city in the North West (1) the largest port for imports and exports in that region of the UK (1). No credit for non UK city. AO1 – 2 marks	**2**

01	**7**	**Outline one impact of national migration on a named UK city.** Credit any statement of importance in relation to the named city. Credit any UK city even if different from that named in **01.6**. One mark for an initial overall comment or single relevant statement, eg • Migration means cities have got bigger (1). • Birmingham is the most popular UK city for people leaving London (1). • Many students have migrated to Manchester (1). Second mark for developing the comment, eg • Bristol has got much bigger with migration (1) particularly with educated people, creating a skilled workforce (d)(1). • Birmingham is the most popular UK city for people leaving London (1) which has led to high house prices (d)(1). • Many students have migrated to Manchester (1) meaning that locals feel excluded from some parts of the city (d)(1). No credit for international migration. Credit migration within the British Isles. AO1 – 2 marks	**2**

01	**8**	**What is the approximate area of the village of Saxilby?** One mark for the correct answer. 1.5 km^2 (allow 1.2–1.8 km^2) AO4 – 1 mark	**1**

01	**9**	**What is the straight line distance from the railway station to the level crossing at 884758?** One mark for the correct answer. Allow any figure between 0.9km and 1.0km / 900m and 1000m AO4 – 1 mark	**1**

01	**10**	**Suggest how the growth of a commuter settlement has impacts on the rural-urban fringe.** **Use Figure 4 and Figure 5 and your own understanding.**	**6**

Level	Marks	Description
3 (Detailed)	5–6	AO2 – Shows detailed understanding of the impacts of a commuter settlement on the rural-urban fringe. AO3 – Demonstrates thorough application of knowledge and understanding in interpreting the figures to suggest impacts.
2 (Clear)	3–4	AO2 – Shows clear understanding of the impacts of a commuter settlement on the rural-urban fringe. AO3 – Demonstrates reasonable application of knowledge and understanding in interpreting the figures to suggest impacts.
1 (Basic)	1–2	AO2 – Shows basic understanding of the impacts of a commuter settlement on the rural-urban fringe. AO3 – Demonstrates limited application of knowledge and understanding in interpreting the figures to suggest impact(s).
	0	No relevant content

- **Level 3 (detailed) responses** will cover the figure(s) and well-developed geographical interpretation and understanding and provide detailed suggestions of the impacts arising.
- **Level 2 (clear) responses** will show reasonable interpretation and understanding using the figure(s) and clear geographical understanding or more considered interpretation for just the figure or own understanding used.
- **Level 1 (basic) responses** will show simple interpretation and/or understanding using the figure and/or simple geographical understanding, or may simply assert the impact(s).
- Max Level 2 if no use of figure(s)

<u>Indicative content</u>

- Candidates may demonstrate their geographical understanding through use of a named example, although this is not explicitly asked for in the question.
- Allow a broad interpretation of rural-urban fringe to be both the commuter settlement and its surroundings and the wider urban hinterland.
- Understanding may just as well be demonstrated through explanation of the relevant geography.

		• **Figure 4** indicates: housing is being developed into remaining greenfield areas in and around the village; clear cul-de-sac street pattern suggesting previous estate growth; surrounded by farmland; railway station/A57 proximity to Lincoln showing transport links for commuters. • Credit grid references for use of **Figure 4**, though accurate description will also serve. • **Figure 5** indicates: housing developing right up to the edge of the village with trees and visible in distance of photos; large number of cars; lack of character/sense of place with 'identikit' housing; swales for drainage. • Reference to **Figure(s) 4/5** may be inferred even if not explicitly stated through comment on the above aspects in relation to the impacts of commuter settlements. • 'Suggest' allows a broad range of valid responses which may include: loss of habitats/greenfield/farmland; loss of rural or unique character; increase in air pollution/congestion with increased number of cars; increasingly busy branch line train services; impact on drainage with additional tarmac; credit those who refer to the swales as evidence this is an issue. • Credit any valid impacts which show an understanding of urban/rural geography. AO2 – 3 marks AO3 – 3 marks	

01	**11**	**Discuss how urban growth in LIC/NEE cities has created social and economic opportunities.** **Use Figure 6 and a case study.**	**9**

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 growth can create opportunities in LICs/NEEs. AO3 – Demonstrates thorough application of knowledge and understanding through discussion/detailed figure analysis
2 (Clear)	4–6	AO1 – Demonstrates reasonable knowledge of places and processes in urban environments. AO2 – Shows clear understanding of how urban growth can create opportunities in LICs/NEEs. AO3 – Demonstrates reasonable application of knowledge and understanding through discussion and/or clear figure analysis
1 (Basic)	1–3	AO1 – Demonstrates limited knowledge of places and processes in urban environments. AO2 – Shows limited understanding of how urban growth can create opportunities in LICs/NEEs.

		AO3 – Demonstrates limited application of knowledge and understanding through discussion or simple figure analysis
	0	No relevant content.

- **Level 3 (detailed) responses** will show detailed discussion of opportunities supported with precise knowledge.
- **Level 2 (clear) responses** will show clear discussion of opportunities, supported with either precise or generically accurate knowledge.
- **Level 1 (basic) responses** will show simple discussion/description of opportunities and may state their existence without support.
- **Max level 2** if no LIC city named or if HIC city used but the comments could still be relevant.
- **Max Level 2** if no use of figure

<u>Indicative content</u>

- An example is required with likely examples being: Mumbai, Rio de Janeiro, Lagos.
- Discussion can be either social vs economic opportunities and/or comment on the scale of these opportunities.
- Opportunities arise principally due to the rate of urbanisation being linked to the rate of industrial and economic change in such countries which is much more concentrated in cities than rural areas.
- A range of opportunities exist and might be mentioned such as:
  - Rapid growth leading to construction jobs, eg Eko Atlantic, Lagos
  - An emerging middle class concentrated in the cities fuels demands for goods and services, eg Bollywood cinema in Mumbai
  - Industrialisation demands financial and other support which all provide jobs, eg banking and government departments leading to higher incomes, eg Rio incomes significantly higher than the Brazil average.
- Even if much employment in these cities is in the informal sector it is at least there, eg 85% of the population in Dharavi, Mumbai are in employment.
- Infrastructure is generally better provided in cities than rural areas, creating social and economic opportunities, eg 90% of children in Lagos attend primary school vs 60% in rural areas.
- Sanitation is better in urban areas than rural, eg 50% / 30% respectively in India.
- Health provision is more easily accessed in urban areas than rural leading to higher life expectancies.

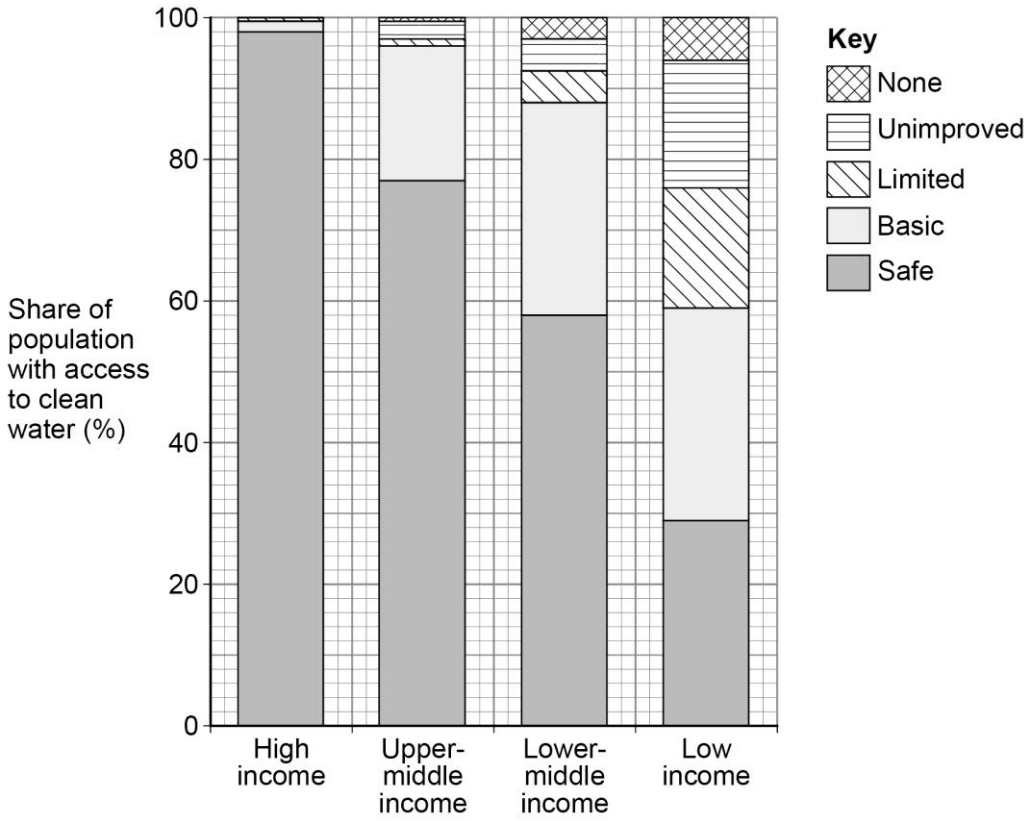
Credit any valid opportunities, the list above is not exhaustive.

Challenges may be credited if used to quantify scale of opportunities.

AO1 – 3 marks
AO2 – 3 marks
AO3 – 3 marks

		Spelling, punctuation and grammar (SPaG) **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**

Section B

Qu	Pt	Marking Guidance	Total marks
02	1	**Complete Figure 7 below using the following data for low income countries.** One mark for both dividing lines correctly drawn. Second mark for all segments correctly shaded or labelled. Allow one mark if lines and segments mathematically correct and shaded but in the wrong order. Allow 1 mark if 2 segments are correctly plotted and shaded.  AO4 – 2 marks	2

02	2	**What is the difference in access to safe water supply between high income and lower-middle income countries?** One mark for correct answer. 40% AO4 – 1 mark	1

02	**3**	**Outline the limitation(s) of one social measure of development such as access to clean water.** One mark for an initial overall comment or single relevant statement, eg • Death rate can be an unreliable measure (1). • Number of people per doctor is not always a good measure of quality of life (1) • Access to safe water as % might not give a full picture of water supply (1). Second mark for developing the comment or a separate point related to the same measure. • Death rate can be an unreliable measure (1) because it increases in many advanced economies as their populations age (1). • Number of people per doctor is not always a good measure of quality of life (1) There are more doctors in some parts of the country than others (1) • Access to safe water as % might not give a full picture of water supply (1) as time may still be spent collecting it / or it may not be stored safely once collected (d)(1). Credit any reasonable statement and then subsequent development which makes a link to a social aspect of people's lives. Accept a wide range of indicators, which need not be named. No credit for GNI as purely economic. No credit for saying what one indicator doesn't measure. AO1 – 2 marks	**2**

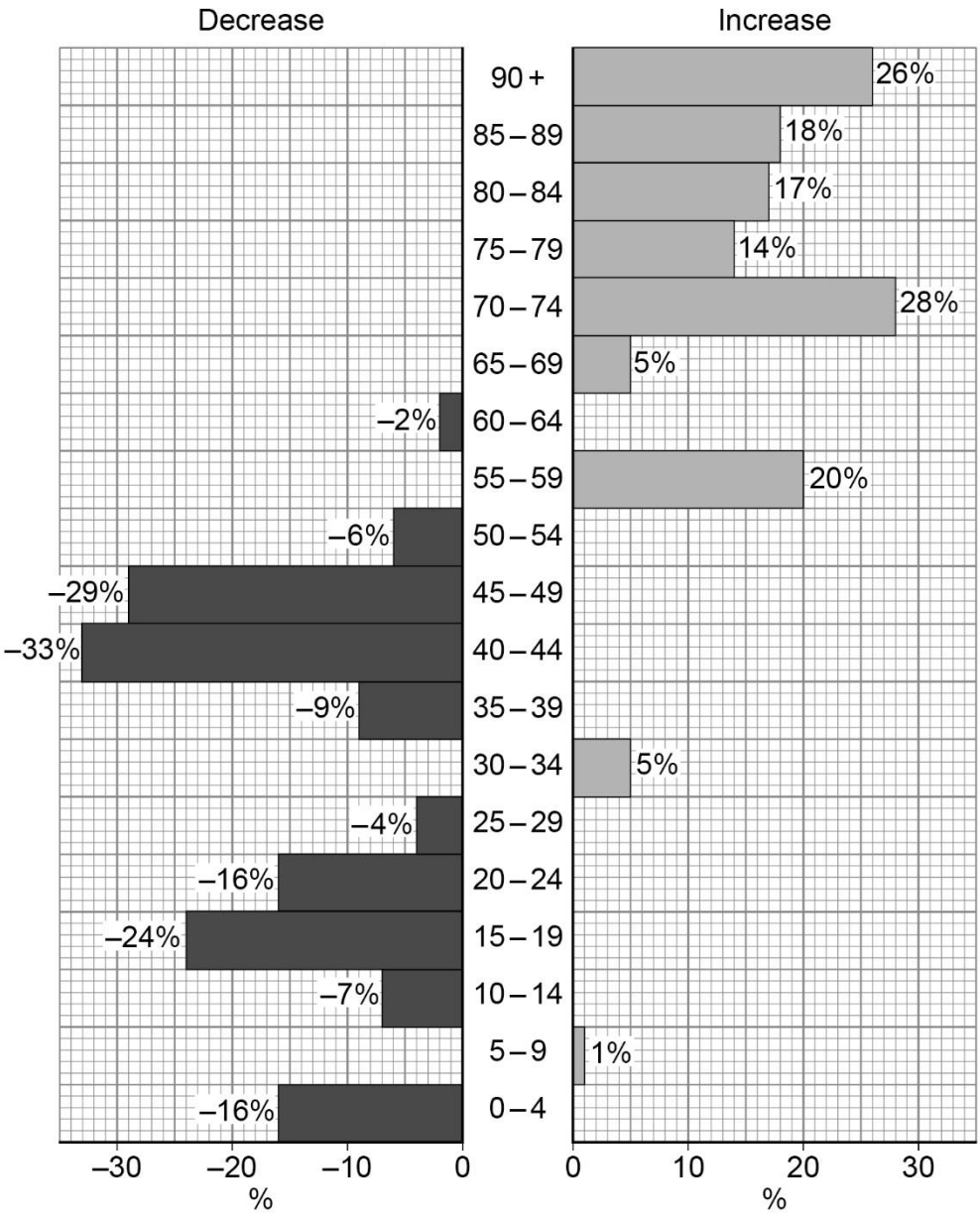
02	**4**	**Explain one or more causes of uneven development.**	**4**

Level	Marks	Description
2 (Clear)	3–4	AO1 – shows clear knowledge of factor(s) and the development process. AO2 – Shows clear understanding of factor(s) and the link to the development process.
1 (Basic)	1–2	AO1 – shows basic knowledge of factor(s) and the development process. AO2 – Shows limited understanding of factor(s) and the link to the development process.
	0	No relevant content.

- **Level 2 (clear) responses** will link geographical knowledge and understanding to present a reasoned explanation.
- **Level 1 (basic) answers** will be simplistic, perhaps simply descriptive, with limited reasoning.

<u>Indicative content</u>

		• Development need not be through named places but use of an example is likely to add clarity. Development may also be found in explanation of processes of development. • One factor well developed and explained can achieve full marks. • It is likely that answers will focus on the negative but it would be legitimate to offer and answer focussed on positive aspects of development factors for those countries which have greater levels of economic development and / or an answer of contrasting fortunes. • Landlocked countries will struggle to trade goods easily without ports. Transport costs are higher as goods must travel longer distances over land, often across several international borders. • Natural hazards may limit economic growth as infrastructure will be damaged, limiting industrial output and trade and funds will be needed for repairing damage rather than new development which would allow progress. • Climate related diseases and pests. Malaria is a serious health issue in some tropical areas that affects productivity. It causes frequent illness, leading to missed work, and financial hardship for communities. Irregular rainfall will limit water supply, essential for settled farming. This is the least secure physical and developmental link. • Trade is dominated by HICs, particularly Europe and the USA, who will control the process for their benefit, eg through the operation of the WTO. • HICs and TNCs pay as little as possible for their commodities and raw materials and LICs are further vulnerable to world market fluctuations. • Many LICs are trapped in primary product dependency and rely for a large % of their income on a single primary product, eg Zambia 60% GDP from copper. • Processing of raw materials takes place in HICs so LIC/NEEs are unable to add value to their products, eg Cocoa Ivory Coast vs HIC chocolatiers. • A legacy of colonialism has held back development in the formerly colonised countries both in terms of the exploitative relationships established and an often difficult process of independence such as civil wars. • Conflict and corrupt government mean money is spent on things other than development. Credit any reasonable factor linked to development Credit comments about uneven development within countries e.g. urban/rural differences, North-South divide in the UK AO1 – 2 marks AO2 – 2 marks	

02	**5**	**Complete Figure 8 using the following data.** One mark for correct completion. Bar need not be shaded or labelled.  AO4 – 1 mark	**1**

02	**6**	**What is the range between the largest percentage increase and largest percentage decrease in population shown on Figure 8?** One mark for correct answer. Ignore any minus sign. 61% AO4 – 1 mark	**1**

02	**7**	**Calculate the mean population change in the 65+ age groups shown on Figure 8.** One mark for correct answer. 18% AO4 – 1 mark	**1**

02	**8**	**Suggest how population decline can lead to social and economic changes in the rural landscape in the UK.** **Use Figure 9 and your own knowledge.**	**6**

Level	Marks	Description
3 (Detailed)	5–6	AO2 – Shows detailed understanding of population decline and the resulting effects in rural areas. AO3 – Demonstrates thorough application of knowledge and understanding to offer precise interpretation of the information provided and the link with social and economic changes.
2 (Clear)	3–4	AO2 – Shows clear understanding of population decline and the resulting effects in rural areas. AO3 – Demonstrates some application of knowledge and understanding to offer clear interpretation of the information provided and the link with social and / or economic changes.
1 (Basic)	1–2	AO2 – Shows limited understanding of population decline and the resulting effects in rural areas. AO3 – Demonstrates limited application of knowledge and understanding to offer basic interpretation of the information provided and / or simply asserts the link with social and / or economic changes.
	0	No relevant content.

- **Level 3 (detailed) responses** will cover the figure and well-developed geographical understanding and provide a considered interpretation of the link.
- **Level 2 (clear) responses** will show reasonable understanding of the link using interpretation of the figure or more considered explanation of the link using just their own understanding.
- **Level 1 (basic) responses** will show simple understanding of the link with basic use of the figure and / or simple assertion of a connection.

<u>Indicative content</u>

- **Figure 9** shows decline in both social infrastructure in the school closure, with the 'mainland' indicating a more remote island and also in economic infrastructure with shop closures.

		• Additionally, the use of the term 'lifeline' suggests a social aspect to the provision of rural shops in their service to communities. • Candidates may make use of **Figure 8** in their answer, though that should not be credited as reference to the Figure as it is **Figure 9** that is required by the question. • An example is not required as development may be shown through developed geography, but is likely to add clarity. • Likely examples are: Outer Hebrides (accept Lewis / Harris), South Lakeland, Mid Wales. Any rural area is acceptable. Social changes such as: • Younger people leave in search of opportunities elsewhere, leaving a higher proportion of older residents, resulting in school closures and a less vibrant / varied community. • This may also present issues with social / health care with an ageing population. Economic changes such as: • There is an increasing cost to local / national government to provide services in these areas as smaller populations reduce economies of scale. • A reduced / less varied population makes businesses less viable, therefore having a negative effect on the local economy. • **Max L2** if answer uses **Figure 9** or own understanding only. • **Max L2** if social or economic changes only. AO2 – 3 marks AO3 – 3 marks	

02	**9**	**Use Figure 10 to suggest how economic development affects peoples' quality of life.** **Figure 10** shows the involvement of the president in improving water supplies and sanitation in Peru. Credit any reasonable explanation or development of point, eg • Economic development increases wages (1) and therefore tax receipts for the government (1) which can be spent on better sanitation (1). • Quality of life improves (1) because the government improves infrastructure (1) which means they may be more likely to succeed (1). • Better sanitation (1) will reduce disease/ people will be healthier (1) and more productive at work / happier as a result (1). • Improved sanitation will reduce infant / maternal mortality (1) which will help to reduce the need to have children / the birth rate (1) so overall rates of mental health / nutrition / illness will reduce (1). • Accept answers which argue negatively i.e. that a lack of development will decrease quality of life. 1×3, 3×1, or (1+1)+1 Max 1 mark if no reference can be seen or inferred to **Figure 10**. AO3 – 3 marks	**3**

02	**10**	**Evaluate the impacts of a transnational corporation (TNC) on a host country.** **Use a case study of a LIC/NEE.**	**9**

Level	Marks	Description
3 (Detailed)	7–9	AO1 – Demonstrates detailed knowledge of the operations of a TNC in a named LIC/NEE. AO2 – Shows a thorough understanding of how a TNC causes different impacts. AO3 – Demonstrates thorough application of knowledge and understanding in evaluating the relative impact of changes caused by a TNC.
2 (Clear)	4–6	AO1 – Demonstrates clear knowledge of the operations of a TNC in a named LIC/NEE. AO2 – Shows a reasonable understanding of how a TNC causes different impacts. AO3 – Demonstrates reasonable application of knowledge and understanding in evaluating the relative impact of changes caused by a TNC.
1 (Basic)	1–3	AO1 – Demonstrates basic knowledge of the operations of a TNC in a named LIC/NEE. AO2 – Shows a limited understanding of how a TNC causes different impacts. AO3 – Demonstrates limited application of knowledge and understanding in evaluating the relative impact of changes caused by a TNC.
	0	No relevant content.

- **Level 3 (detailed) responses** will provide specific detail of a named TNC and country with well-reasoned evaluation of the impacts resulting from the TNCs operation.
- **Level 2 (clear) responses** will either provide specific detail of a named TNC and implicit evaluation of the impacts or well-reasoned evaluation of the impacts for a generic country / TNC.
- **Level 1 (basic) responses** will give basic link(s) between a TNC and the impacts that result or merely assert a connection between them.

- **Max top L2** if no named country or TNC.
- **Max top L2** if HIC country but comments could still apply.
- **Max L2** if no evaluative comments.

		<u>Indicative content</u>
		
		• Candidates are likely to have studied a range of TNCs and countries, with likely textbook examples being Unilever in India and Shell in Nigeria.
		• Using the latter as an example:
		• Answers could suggest positive impacts such as:
		  ○ Direct employment for 65 000 Nigerians and a further 250 000 indirectly.
		  ○ 91% of Shell contracts go to Nigerian companies.
		  ○ Shell makes significant contributions to Nigeria's tax coffers and thereby increases national wealth.
		  ○ Credit development of the above to show how they increase security of employment and thereby disposable income, increase government revenue to allow funding of infrastructure and social provision, and create multiplier effects which have wider benefits.
		• Answers should also address the need to evaluate and therefore may show negative impacts such as:
		  ○ Oil spills, particularly in the Bodo region, cause conflict and resentment and ruin fishermen's livelihoods.
		  ○ Oil flaring is still used, increasing greenhouse emissions and air pollution.
		  ○ Oil wealth has provoked armed conflict and new terrorist groups such as the Niger Delta Avengers who cause loss of life and revenue for the government.
		• Answers should be brought to a conclusion, or at least have evaluative comments in their text, perhaps with an overall judgement of whether the positives outweigh the negatives or vice versa. Either view is perfectly acceptable.
		• An updated version of a textbook has provided revised figures regarding the numbers of workers employed by Shell and who work in the oil industry in Nigeria. Give credit to responses which correctly use figures provided above or those that suggest Shell provides direct employment for 2700 people and 9000 contractors, of whom 97 per cent are Nigerian.
		• Examiners should be aware of updated figures for a range of case studies.
		
		AO1 – 3 marks
		AO2 – 3 marks
		AO3 – 3 marks	

Section C

Qu	Pt	Marking Guidance	Total marks
03	1	**Calculate the median well-being score for the nine lowest scoring countries shown.** **Answer to two decimal places.** 3.51 Award 2 marks if answer correct even if no visible working. 1 mark for working if correct but answer not. Correct working involves sorting the data for 9 numbers and identifying the middle value, either with written list or annotation on map figures. AO4 – 2 marks	2
03	2	**Suggest one reason for higher well-being scores in a country.** Credit any reasonable suggestion such as: HICs / have high standards of living; most are N Europe with temperate climate / few hazards / stable democracies; (almost) all are conflict free. Answers do not have to refer to figure 11. AO3 – 1 mark	1
03	3	**Explain how changing demand for food has affected organic farming in the UK.** One mark for a basic statement, eg • Demand for organic food has gone up (1). • People are more concerned about the effect of food on their health (1). • People can't afford organic food anymore (1). Two marks for a development or expansion perhaps through and example, eg • Demand for organic food has gone up (1) so more farmers have responded by farming organically (d)(1). • People are more concerned about the effect of food on their health (1) and organic food is seen as healthier so there is more demand (d)(1). • People can't afford organic food anymore (1) so organic sales and the number of organic farmers in the UK have reduced (d)(1). Credit both positive and negative effects (see examples above). No credit for comments not related to demand. AO2 – 2 marks	2

03	**4**	**'Managing water quality and water pollution in the UK is a significant challenge.'** **To what extent do you agree with this statement?** **Use Figure 12 and your own understanding.**	**6**

Level	Marks	Description
3 (Detailed)	5–6	AO2 – Shows detailed understanding of the challenges around water quality and pollution in the UK. AO3 – Demonstrates detailed application of knowledge and understanding by using the resource thoroughly and effectively evaluating the issues arising.
2 (Clear)	3–4	AO2 – Shows some understanding of the challenges around water quality and pollution in the UK. AO3 – Demonstrates some application of knowledge and understanding by using the resource with some effectiveness with some evaluation of the issues arising.
1 (Basic)	1–2	AO2 – Shows limited understanding of the challenges around water quality and pollution in the UK. AO3 – Demonstrates limited application of knowledge and understanding through simple use of the resource with limited evaluation of the issues arising.
	0	No relevant content.

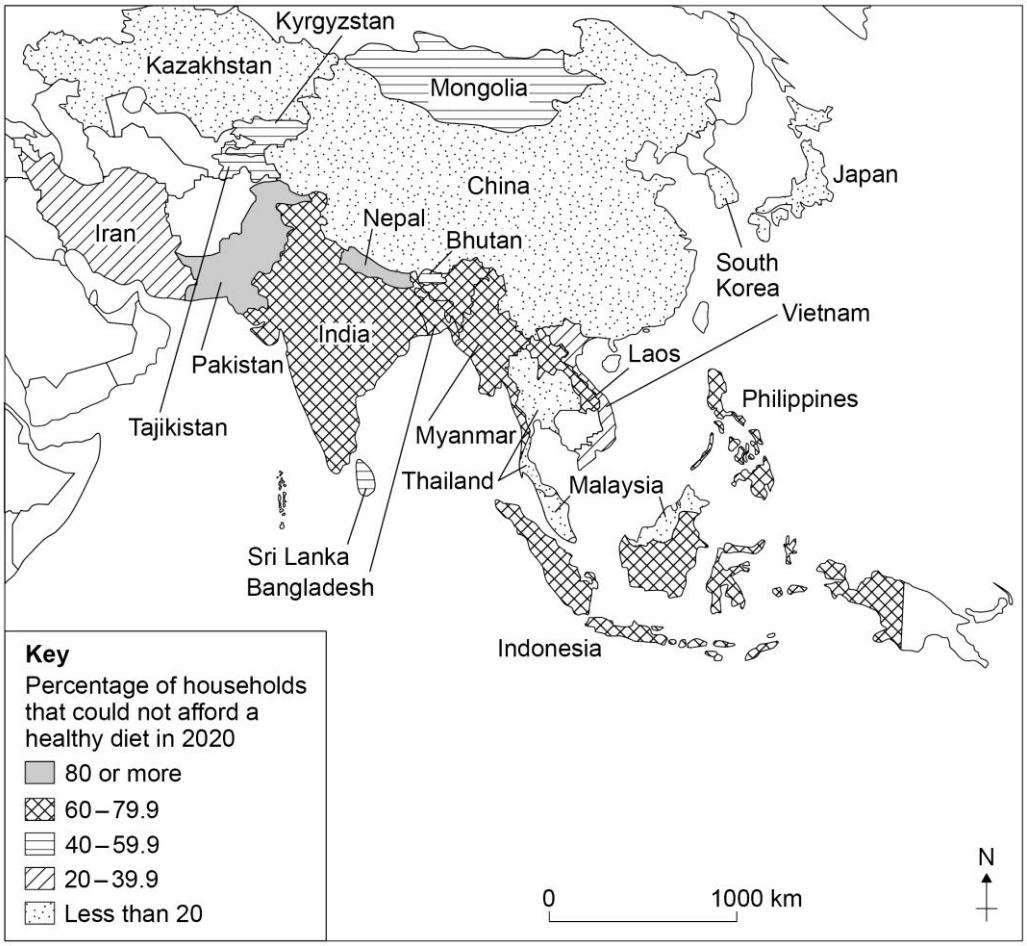
- **Level 3 (detailed) responses** will provide a well-reasoned use of the resource, supported with thorough understanding of the challenges.
- **Level 2 (clear) responses** will give a partially reasoned use of the resource supported with either thorough or generically appropriate evaluation of the challenges.
- **Level 1 (basic) responses** will show basic use of the resource with simple understanding of the challenges that result.

- **Max top L2** if **Figure 12** or own understanding only.

<u>Indicative content</u>

- **Figure 12** shows a range of challenges such as the types and sources of pollution and the resultant loss of biodiversity. It is noticeably entirely negative.
- A range of additional challenges could be identified such as:
  - Eutrophication from farm run-off.
  - Contamination of drinking water.
  - 'Wild swimming' can be dangerous just as it was growing in popularity post-pandemic.
  - Increasing fines for water companies for sewage discharges show they are exploiting legislation. (Frequent news item in recent years)
  - Microplastics becoming more of a concern as more are found

		○ Hotter summers mean water supply is lower along with river flow, this has the effect of concentrating any pollution. • Answers may also indicate the positive: ○ The legislation is (supposed to be – see above) strict to prevent pollution. ○ We have strict standards for water quality and it is never dangerous to health. ○ Awareness is increasing which is helping to reduce polluting incidents. • Allow answers that are entirely one-sided to full marks if there is evaluation in the comments. No credit for straight lifts from **Figure 12**. AO2 – 3 marks AO3 – 3 marks	

Qu	Pt	Marking Guidance	Total marks
04	1	**Complete Figure 13 using the following data.** One mark for each country correctly shaded.  AO4 – 2 marks	2
04	2	**Name one country where 60–79.9% of households could not afford a healthy diet in 2020.** One mark for any correctly named country: Bangladesh, India, Indonesia, Laos, Myanmar, Philippines AO4 – 1 mark	1

04	**3**	**How many of the countries shown in Figure 13 had less than 20% of households that could not afford a healthy diet?** One mark for the correct answer. **A** 6 (1 mark) No credit if two or more statements are shaded. **What percentage of the 21 countries for which data is shown had less than 20% of households that could not afford a healthy diet?** **Answer to one decimal place.** 28.6% (1 mark) Percentage sign not required. Answer must be to one decimal place. If the candidate has made a mistake in the first part then allow the corresponding answer to the second part of the question: **B** – 33.3%, **C** – 38.1%, **D** – 42.9% AO4 – 2 marks	**2**

04	**4**	**Outline one or more ways that physical factors can affect food supply.** Credit any reasonable statement where the factor is qualified or development of a point, eg • Flooding (1) may destroy crops (1). • Poor soils (1) may make it hard for crops to grow (1). • Limited rainfall (1) may lead to crop failure / animals dying (1) therefore decreasing food supply (1) • Climate change may increase the likelihood of higher temperatures (1) which may lead to increased desertification (1) therefore decreased food supply (1) • Some areas may suffer from pests (1) reducing farmer's yield (1) such as swarms of locusts in Kenya (1). • Volcanic ash can lead to fertile soil (1) which increases yields (1) • Credit relevant example for one mark No credit for human factors. Max 2 marks for list like statements with no development. 1×3, 3 x1 or (1+1)+1 AO2 – 3 marks	**3**

04	**5**	**Explain how seasonal food consumption and reducing food waste can lead to increased sustainability of food supply.**	**6**

Level	Marks	Description
3 (Detailed)	5–6	AO1 – Demonstrates detailed knowledge of seasonal food consumption and reducing food waste. AO2 – Shows thorough geographical understanding of how seasonal food consumption and reducing food waste can contribute to sustainability.
2 (Clear)	3–4	AO1 – Demonstrates clear knowledge of seasonal food consumption and/or reducing food waste. AO2 – Shows reasonable geographical understanding of how seasonal food consumption and/or reducing food waste can contribute to sustainability.
1 (Basic)	1–2	AO1 – Demonstrates limited knowledge of seasonal food consumption and/or reducing food waste. AO2 – Shows limited geographical understanding of how seasonal food consumption and/or reducing food waste can contribute to sustainability.
	0	No relevant content

- **Level 3 (detailed) responses** will cover both seasonal food consumption and reducing food waste in detail and link these to sustainability.
- **Level 2 (clear) responses** will cover seasonal food consumption and/or reducing food waste clearly with at least an implicit link to sustainability.
- **Level 1 (basic) responses** will cover seasonal food consumption and/or reducing food waste in a basic manner and / or merely assert the connection to sustainability.
- **Max Level 2 for addressing only one element of the question.**

<u>Indicative content</u>

There is no requirement for a named example although some students may choose to include one.

The question does not stipulate a HIC/NEE/LIC focus so credit any relevant points.

Credit references to economic, social and environmental sustainability.

Clearly the exact content will vary according to the strategies chosen:

Seasonal food consumption

- Many food items travel thousands of miles to reach the UK as people expect to have certain foods all year round.
- Some food travels from the country of origin to another country to be processed before being transported to the UK.
- Encouraging people to eat more seasonally means more food can be grown locally, which reduces the food miles.
- Reduction in the need for heated greenhouses.

		• Farm shops can encourage people to shop locally for fresh produce. • Local produce may contain fewer preservatives needed to keep it fresh / may require less plastic packaging. **Reducing food waste** • Encouraging the buying of just what is needed, to prevent food being thrown away. • Reducing the waste during food production/transportation/processing. • More effective storing of food (both during transportation and by shoppers) to extend the life of fresh produce. • Focus on 'best before' rather than 'use by' on labels of some types of food. • Community food hubs where leftovers can be swapped or donated. • Increased number of shops selling 'imperfect' vegetables. • Credit those who refer to food loss i.e. at production/storage/market stage as food waste. Sustainability will equally vary according to strategies but is likely to include: • Reduction in the distance food needs to travel therefore less CO_2 is burnt by aircraft/lorries reducing the impact on global climate change. • Less energy is needed to heat greenhouses and for computerised watering systems. This therefore uses fewer resources such as fossil fuels, which are running out. • Buying from local producers keeps farmers in business and can boost the rural economy. • Increased demand for local produce creates more jobs. • Local produce may be fresher and more nutritious, boosting people's health. • Farmers markets and local enterprises such as food exchanges can bring communities together. • Reduced food waste requiring disposal. • Increased packaging needed to keep food fresh whilst it travels many miles also requires the use of resources and creates additional waste / or energy to be spent recycling. • Selling of 'imperfect' produce allows a profit to be made, whilst reducing waste. AO1 – 3 marks AO2 – 3 marks	

Qu	Pt	Marking Guidance	Total marks
05	1	**Complete Figure 14 using the following data.** One mark for each country correctly shaded. AO4 = 2 marks	2

05	2	**Name one country which had medium-high water stress.** One mark for any correctly named country. Bulgaria, Denmark, Estonia, France, Germany, North Macedonia AO4 – 1 mark	1

05	**3**	**How many of the countries shown in Figure 14 had low-medium water stress?** One mark for the correct answer. **A** 6 (1 mark) No credit if two or more statements are shaded. **What percentage of the 32 countries for which data is shown had low-medium water stress?** **Answer to one decimal place.** 18.8% (1 mark) Percentage sign not required. Answer must be to one decimal place. If the candidate has made a mistake in the first part then allow the corresponding answer to the second part of the question: **B** – 21.9%, **C** – 25.0% / 25%, **D** – 28.1% AO4 – 2 marks	**2**

05	**4**	**Outline one or more ways physical factors can affect water availability.** Credit any reasonable statement where the factor is qualified or development of a point, eg • Lack of rainfall (1) leads to water shortages (1). • Too much rainfall (1) can contaminate supplies (1). • Climate change is causing snow and ice in some areas to melt (1). • Higher temperatures can increase evaporation (1) which means water is lost into the atmosphere (1) therefore limiting supply (1) • Permeable rocks (1) allow water to infiltrate (1) which means water can be stored in aquifers (1). • Credit relevant example for one mark. No credit for human factors. Max 2 marks for list like statements with no development. 1×3, 3x1 or (1+1)+1 AO2 – 3 marks	**3**

05	**5**	**Explain how water conservation and using grey water can lead to increased sustainability of water supply.**	**6**

Level	Marks	Description
3 (Detailed)	5–6	AO1 – Demonstrates detailed knowledge of the use of grey water and water conservation. AO2 – Shows thorough geographical understanding of how the use of grey water and water conservation can contribute to sustainability.
2 (Clear)	3–4	AO1 – Demonstrates clear knowledge of the use of grey water and/or water conservation. AO2 – Shows reasonable geographical understanding of how the use of grey water and/or water conservation can contribute to sustainability.
1 (Basic)	1–2	AO1 – Demonstrates limited knowledge of the use of grey water and/or water conservation. AO2 – Shows limited geographical understanding of how the use of grey water and/or water conservation can contribute to sustainability.
	0	No relevant content

- **Level 3 (detailed) responses** will cover the use of grey water and water conservation in detail and link these to sustainability.
- **Level 2 (clear) responses** will cover the use of grey water and/or water conservation clearly with at least an implicit link to sustainability.
- **Level 1 (basic) responses** will cover the use of grey water and/or water conservation in a basic manner and/or merely assert the connection to sustainability.
- **Max Level 2 for addressing only one element of the question.**

<u>Indicative content</u>

There is no requirement for a named example although some students may choose to include one.

The question does not stipulate a HIC/NEE/LIC focus so credit any relevant points.

Credit references to economic, social and environmental sustainability.

The use of grey water
- Grey water can amount to 80% of a household's waste water therefore it is a large resource.
- Households can reuse bath water for watering the garden.
- Water butts can be fitted to drainpipes to collect water from roofs.
- Businesses such as shopping centres can collect rainwater and use this to flush toilets.
- Grey water can be treated by filtering through sand beds or reeds.
- Allow comments on water recycling in industry such as: treated water from industry is used to irrigate farmland / provide cooling in power stations.

		Water conservation • Having a water meter can encourage people to be careful about how much they use. • Saving water in the home with low flush / twin flush toilets. • More water efficient appliances such as washing machines – only using them when full or making use of half load settings on dishwashers. • Having showers rather than baths can save water (shower may use 6-45 litres, baths may use 80 litres). • Turning off the tap when brushing teeth / washing fruit and vegetables. • Washing cars / power washing patios less often and growing plants in the garden that needs less watering. • Water companies can invest in repairing pipes to reduce the amount of water lost through leakages. Sustainability will equally vary according to strategies but is likely to include: • Less water needing to be used in households or by businesses reduces the amount needing to be extracted. • The cost to the water companies of providing water and treating water is reduced and less energy needs to be used. • Reusing water can dramatically reduce a household's water bills, leaving more money to spend on other essentials. • Reducing the use of water through methods of water conservation ensures there is enough water to meet today's needs without compromising the ability of future generations to meet their needs. • Drip feed irrigation used by farmers means less water is lost through evaporation – leaving more water for other things. • Using grey water does not require a large amount of money to be spent – some water companies sell cheap water butts or give them away free. • The filtering of grey water can lead to the creation of ponds or wetland areas, encouraging biodiversity. AO1 – 3 marks AO2 – 3 marks	

Qu	Pt	Marking Guidance	Total marks
06	1	**Complete Figure 15 using the following data.** One mark for each country correctly shaded. AO4 – 2 marks	2
06	2	**Name one country where 5–9.9% of households could not afford to heat their home in 2021.** One mark for any correctly named country. France, Hungary, Italy, Serbia, Slovak Republic AO4 – 1 mark	1

06	**3**	**How many of the countries shown in Figure 15 had 10–19.9% of households that could not afford to heat their homes in 2021?** One mark for the correct answer. **A** 5 (1 mark) No credit if two or more statements are shaded. **What percentage of the 28 countries for which data is shown had 10–19.9% of households that could not afford to heat their homes? Answer to one decimal place.** 17.9% (1 mark) Percentage sign not required. Answer must be to one decimal place. If the candidate has made a mistake in the first part then allow the corresponding answer to the second part of the question: **B** – 21.4%, **C** – 25.0% / 25%, **D** – 28.6% AO4 – 2 marks	**2**

06	**4**	**Outline one or more ways that physical factors can affect energy supply.** Credit any reasonable statement where the factor is qualified or development of a point, eg • Countries with a sunny climate (1) can generate solar power easily (1). • Lack of fossil fuels (1) limits fuel supply (1). • Highland areas may have enough wind (1) to power wind turbines (1). • Geothermal energy can be produced in areas with tectonic activity (1) such as Iceland (1) therefore allowing a plentiful supply (1) • HEP works best in areas with steep, fast flowing rivers (1) as these are easier to build a dam across to generate power (1). • Credit relevant example for one mark. No credit for human factors. Max 2 marks for list like statements with no development. 1×3, 3x1 (1+1)+1 AO2 – 3 marks	**3**

06	**5**	**Explain how strategies to conserve energy in homes and workplaces and in transport can lead to increased sustainability of energy supply.**	**6**

Level	Marks	Description
3 (Detailed)	5–6	AO1 – Demonstrates detailed knowledge of strategies to conserve energy in homes/workplaces and in transport. AO2 – Shows thorough geographical understanding of how strategies to conserve energy in homes/workplaces and in transport can contribute to sustainability.
2 (Clear)	3–4	AO1 – Demonstrates clear knowledge of strategies to conserve energy in homes/workplaces and/or in transport. AO2 – Shows reasonable geographical understanding of how strategies to conserve energy in homes/ workplaces and/or in transport can contribute to sustainability.
1 (Basic)	1–2	AO1 – Demonstrates limited knowledge of strategies to conserve energy in homes/workplaces and/or in transport. AO2 – Shows limited geographical understanding of how strategies to conserve energy in homes/ workplaces and/or in transport can contribute to sustainability.
	0	No relevant content

- **Level 3 (detailed) responses** will cover strategies to conserve energy in homes/workplaces and in transport in detail and link these to sustainability.
- **Level 2 (clear) responses** will cover strategies to conserve energy in homes/workplaces and/or in transport clearly with at least an implicit link to sustainability.
- **Level 1 (basic) responses** will cover strategies to conserve energy in homes/workplaces and/or in transport in a basic manner and/or merely assert the connection to sustainability.
- **Max Level 2 for addressing only one element of the question.**

<u>Indicative content</u>

There is no requirement for a named example although some students may choose to include one.

The question does not stipulate a HIC/NEE/LIC focus so credit any relevant points.

Credit references to economic, social and environmental sustainability.

Any comment referring to energy conservation in buildings can be taken as referring to both homes and workplaces.

		Energy conservation in homes and workplaces • Insulating houses (cavity wall, loft insulation, double glazed windows) to keep heat in / out reducing need for heating / air conditioning. • Thermostats on radiators / computerised controls for heating / smart meters. • Energy saving appliances. • Encouraging people to turn off devices such as computers / not leaving on standby. • Large windows in homes / offices to make use of natural lighting. • Energy saving lighting – LED lights or with motion sensors in offices. **Transport for sustainability** • Development of more fuel-efficient cars. • Carbon fibre cars which are lighter with more aerodynamic designs. • Increased use of electric and hybrid cars. • Car tax in the UK encourages people to drive less polluting cars. • Increased investment in public transport – buses running on hydrogen, electric trams. • Park and ride schemes. • Clean air zones in some cities – charging vehicles to enter. Sustainability will equally vary according to strategies but is likely to include: • Less energy is needed to heat / cool / light houses and businesses therefore fossil fuels, which are running out, will be used at a slower rate. • Decreased use of fossil fuels will mean a reduction in greenhouse gas emissions from power stations, which contribute to climate change. • A decline in the use of petrol and diesel vehicles can lead to a reduction in the amount of oil that needs to be obtained – which can cause damage to the environment through extraction in fragile environments and leaks during transportation. • Fewer vehicles releasing greenhouses gases reduces the level of pollutants in the atmosphere. This will have a positive effect on human health. • Schemes that reduce congestion and increase public transport use may reduce travel times – bringing economic benefits to businesses. • Encouraging more walking and cycling can be beneficial for people's health and wellbeing. AO1 – 3 marks AO2 – 3 marks	