

# UNIT 2: GLOBAL CLIMATE VULNERABILITY AND RESILIENCE

## Exam Preparation Pack



**Geography**  
Higher level and standard level  
Paper 2

SPECIMEN

Candidate session number

1 hour 15 minutes

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### Instructions to candidates

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- Section A: answer all questions.
- Section B: answer the question.
- Section C: answer one question.
- The accompanying geography resource booklet is required for this examination paper.
- Answers must be written in the boxes provided.
- The maximum mark for this examination paper is **[50 marks]**.

**Section A - Questions from all the 3 units (all compulsory, no choices)**

**Section B - Infographic and related questions (compulsory)**

**Section C - Long answer type question 10 marks (two choices will be given) - need to follow the marks band**

**Dr. Sengupta-Schröder**

## Possible patterns of questions from this section

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Definitions: 1 to 3 marks questions



Graphical question - 3 to 4 marks (need to interpret the graphs)



Analytical or Descriptive knowledge-based questions (5 to 6 marks)



Long Essay type question from this unit in section C  
Please look at the marks band for this type of questions (pp-56-58)



Infographics interpretation

Mark-bands are a comprehensive statement of expected performance against which responses are judged.

Make your Own Dictionary of DP-Geography to get hold over the definitions OR flashcard for revision

### Tips:

For 1 mark: Simply define using appropriate terminologies. For 3 marks: Define using appropriate terminologies + add example/any elaboration.

**Here is the possible list of definitions-** you have already practiced most of them in my Quizlet, find them out from my website and your textbook)



Definitions: 1 to 3 marks questions

Albedo, Positive feedback loop, Negative feedback loop, Natural Greenhouse gases, Greenhouse gases, Greenhouse effect, Enhanced greenhouse effect, Climate change, Global warming, Energy budget, Atmospheric window, External forcing/natural forcing of climate change, Milankovitch cycle, Sunspot cycle, Global warming potential, Global dimming, Ecological footprint, carbon footprint, Permafrost melting/Cryosphere recede, Resilience, Geo-engineering fixes to climate change, Extreme weather events, Carbon capture and storage (CCS technology), Sunlight reflection methods (SRM), Mitigation, Adaptation, Carbon offsetting, Mitigation strategies for climate change, Cap and trade, Vulnerability to climatic change, Risk (equation).

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# Graphical Questions

## Patterns of graphical questions

1. Relationship graphs (positive/negative)
2. Trend graphs
3. Descriptive/diagram based
4. Bar/windows interpretation

## How to write graphical questions?

1. If relationship question, identify the relationship and give support to your statement.
2. Explain the highest and lowest variation with data support (mention units)
3. Point out the medium level or any other variations
4. Anomalies if exist



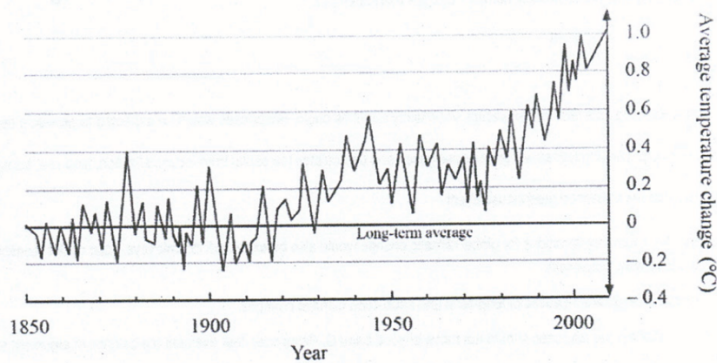
*Graphical question - 3 to 4 marks (need to interpret the graphs)*

Please remember Mark-scheme are only the answer key. They are only indicative. You need to write with full justification. Follow the suggested pattern in the lesson.

## Example:

The graph shows global temperature changes since 1850.

2018



[Source: IPCC – data based on a graph in *The Economist*, 9 September 2006]

- State one natural external forcing which could have influenced the changes in temperature shown on the graph. [1]
- Referring to the graph, describe how temperature has changed since 1850. [3]
- Explain three possible environmental consequences of global climate change since 1950. [3×2]

## Note:

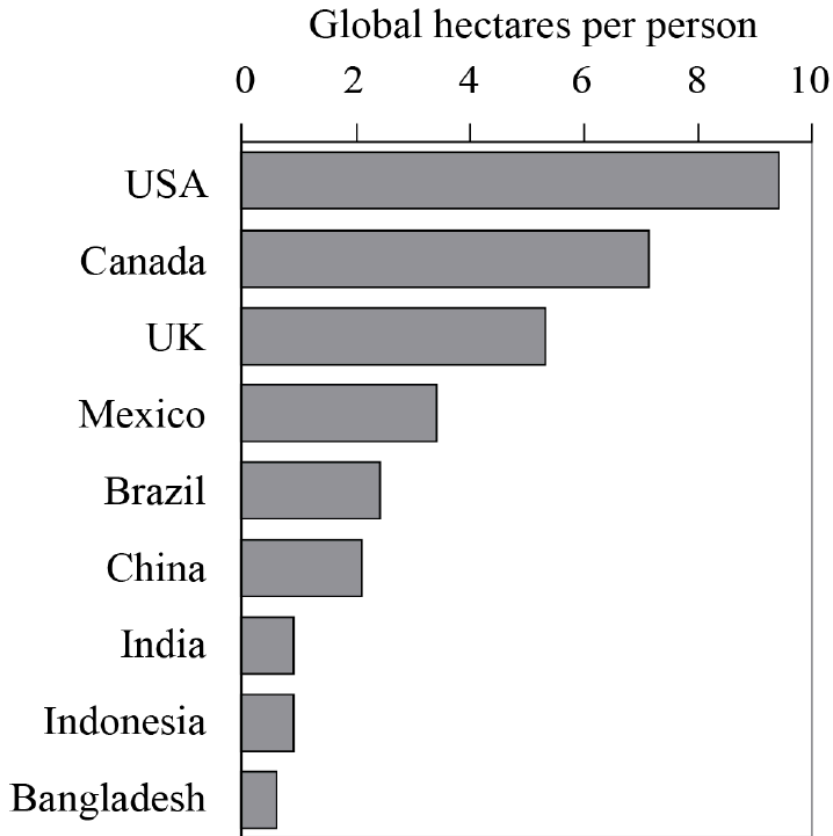
Qa and Qc are general knowledge-based questions. Qb. Related directly to the given graph

### Markscheme

- Award 1 mark for naming a natural external forcing. Any changes in solar radiation; changes in the orbital path of the Earth; volcanic eruptions (these are acceptable as external to atmospheric system). The answer must be external to the Earth's atmospheric system.
- Average temperatures remained more or less stable at first/until 1910–1930 [1 mark]. After that time, average temperatures have risen significantly/there has been an overall increase [1 mark]. The final 1 mark is reserved for quantification or for describing how temperatures have always oscillated/fluctuated, though these have not altered the overall trend.
- There are many possible answers here. Award 1+1 marks for each valid environmental consequence, provided that it is developed by means of examples, explanation or detail. No credit should be awarded for any consequence that is not environmental in nature, or for statements such as "temperatures have risen" since that is implicit in the question.  
  
Valid possible environmental consequences include: poleward shift in some natural vegetation belts; rise in sea levels; alterations to migration routes of animals; expansion of some deserts; greater frequency and severity of tropical storms and hurricanes; record-breaking climate extremes; melting of Arctic ice; retreat of glaciers in most parts of the world.

## Example 2 Very Easy observation based Graphical question

The graph shows the ecological footprints of various countries.



[Source: R Rhoda and T Burton, *Geo-Mexico: The Geography and Dynamics of Modern Mexico* (Sombrero Books, 2010)]

.5b. Describe how the pattern of ecological footprints shown by the graph reflects economic development. [2 marks]

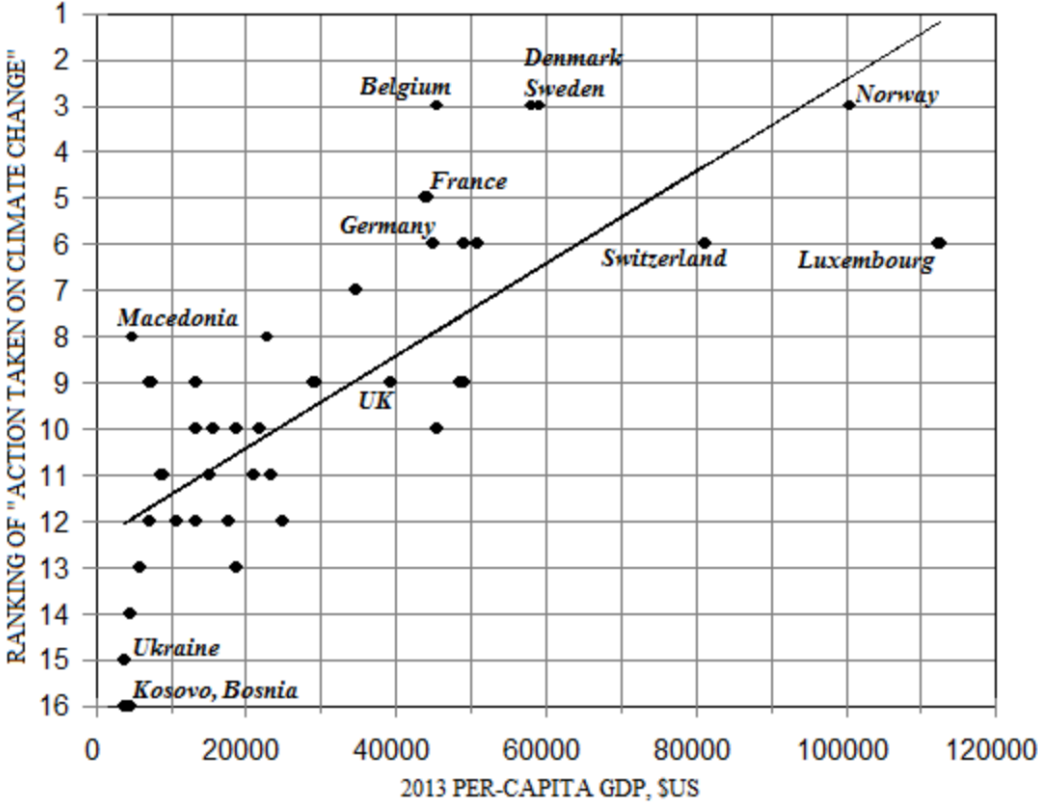
### Markscheme

The relationship is that countries with higher economic development have larger footprints [1 mark]. Award a further [1 mark] for quantification.

### Examiners report

The relationship was easily identified but weaker responses offered no quantification.

# Relationship graph



Describe the relationship shown on the graph (4)

## 5 to 6 Marks analytical questions



*Analytical or Descriptive  
knowledge-based questions  
(5 to 6 marks)*

### How to write ?

1. Explain/define the key word in the question
2. Example in support
3. Little elaboration or diagram if possible
4. If you have question marking like 3+3 , please make two separate paragraph with two separate points.

### Expected Questions:

1. Explain two positive/Negative feedback loops that contribute to climate change.
2. Explain two Environmental/Economic/Social impacts or consequences of global warming.
3. Explain what is meant by energy budget.
4. Explain the role of terrestrial albedo in climatic feedback loop.
5. Explain **two** health hazards related to climate change /global warming in two different locations.
6. How climate change may lead to the changes in agricultural pattern.
7. Distinguish between global climate change and the enhanced greenhouse effect.
8. What is global dimming? Explain how global dimming may affect our climate?
9. State different sources of the 3 major greenhouse gases.
10. Briefly explain the impacts of climate change/global warming in '**one**' of the case you have studied.
11. Access the vulnerability of the population to climate change living in any one of your studied area (case).
12. Explain the impacts of climate change on habitat loss and animal migration.
13. Identify two positive impacts of climate change
14. Explain two external forcing of climate change.
15. **Critically analyse two** geopolitical attempts to reduce the challenges posed by global climate change
16. How release of methane due to permafrost melting may affect the feedback loop?
17. Compare climate change vulnerability in **two** different geographical locations.
18. Evaluate two technological fixes/ geoengineering techniques to combat climate change.

# Infographics example for section B

## Section B

Answer the following question.

4. Refer to the infographic on pages 4 and 5 of the accompanying resource booklet.

The infographic shows the generation of electricity in Africa.

(a) State the number of locations that:

(i) have future plans for nuclear power.

[1]

.....  
.....

(ii) already have hydroelectric power.

[1]

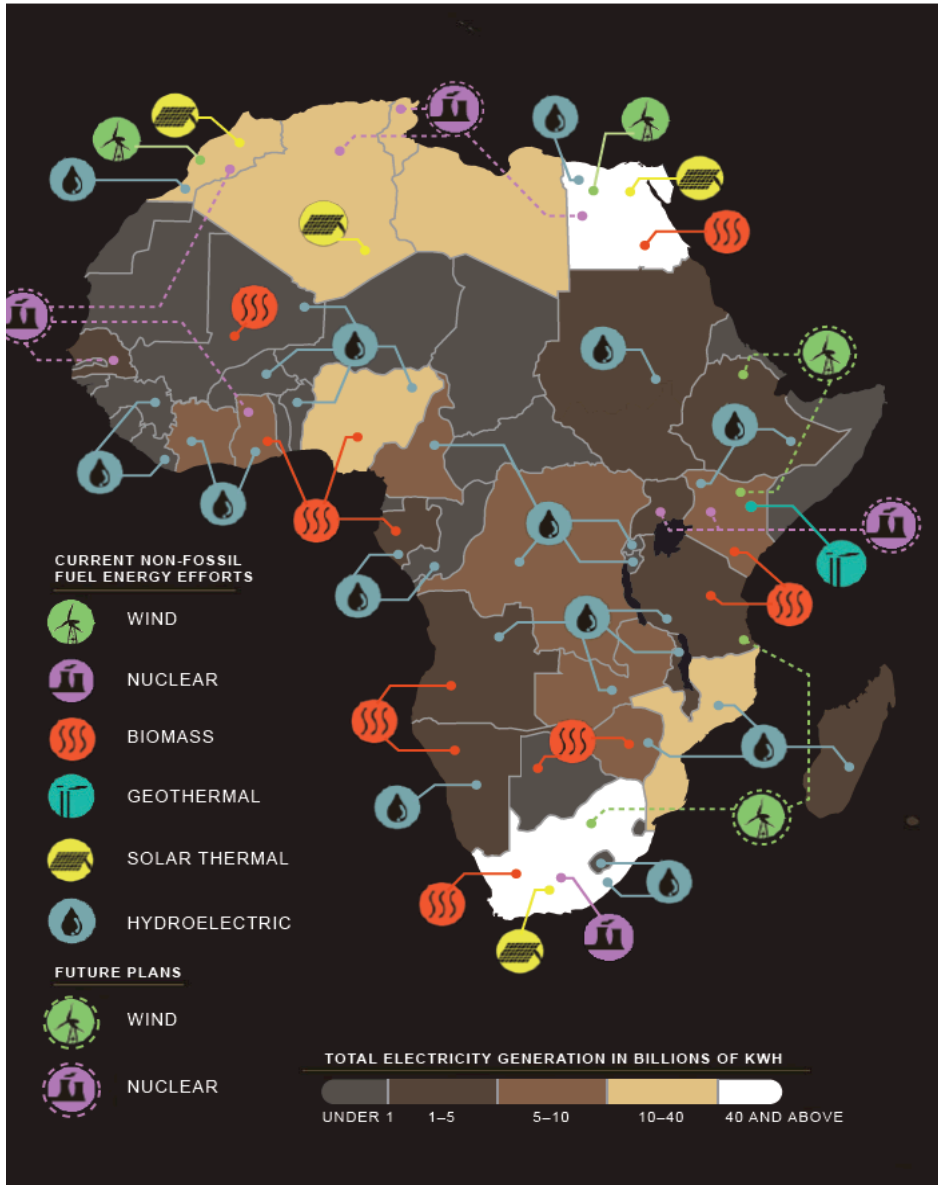
.....  
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(b) Suggest **one** way in which the bar graph depicting electricity generation and population by region could be improved.

[2]

.....  
.....  
.....  
.....





[Source: <http://awesome.good.is>]

## Mark-scheme for section B- infographic

### Section B

4. (a) State the number of locations that:
- (i) have future plans for nuclear power; [1]  
Eight.
  - (ii) already have hydroelectric power. [1]  
Twenty nine.
- (b) Suggest **one** way in which the bar graph depicting electricity generation and population by region could be improved. [2]

*Award [1] for each valid point and [1] for development.*

Possibilities include:

- would be better if like was compared with like [1] and Africa is a continent not a country – others are all countries [1]
- the title should indicate the type of energy sources used in generating electricity [1], ie renewable electricity generation or all electricity generation [1]
- The graph would be more effective if it showed electricity generation per capita rather than kilowatts [1] because larger countries may have more electricity generation/needs [1].

- (c) Evaluate **two** ways in which Africa is portrayed negatively in this infographic, **other than** in the bar graph. [3 + 3]

*Award [1] for each negative portrayal identified, and up to [2] for each effective evaluation of why this is a negative portrayal.*

For example:

Use of images – the two “no entry/prohibition” signs [1] seem to portray no lighting/lightbulbs/ electricity in Africa [1], and this is incorrect/misleading [1].

Tone of language in box in top left corner, eg “unable to scrounge up the money, resources, and general know-how to bring energy to their people” [1] – this is very patronizing, over-simplistic and insulting use of language about Africa [1] which is made up of over 50 diverse countries [1].

Possible areas for evaluation include:

- tone of language
- use of terminology
- use of labels and headings
- sources used
- generalizations
- use of images
- use of colour
- use of data
- intended audience
- scales and proportions or projection of the map
- effectiveness of the key.

## Section C: Long Essay type questions of 10 Marks

**READ THE QUESTUIN CAREFULLY, DRAFT A QUICK PLAN BEFORE YOU START WRITING**

Marks band for 10 marks question

Paper 2 Section C markbands

Marks	Level descriptor		
	<b>AO1: Knowledge and understanding of specified content</b> <b>AO2: Application and analysis of knowledge and understanding</b>	<b>AO3: Synthesis and evaluation</b>	<b>AO4: Selection, use and application of a variety of appropriate skills and techniques</b>
0	The work does not reach a standard described by the descriptors below.		
1–2	<b>The response is too brief, lists unconnected information, is not focused on the question and lacks structure.</b> <ul style="list-style-type: none"> <li>The response is very brief or descriptive, <b>listing</b> a series of unconnected comments or largely irrelevant information. The knowledge and understanding presented is very general with large gaps or errors in interpretation. Examples or case studies are not included or only <b>listed</b>.</li> <li>There is no evidence of analysis.</li> <li>Terminology is missing, not defined, irrelevant or used incorrectly.</li> </ul>		
3–4	<b>The response is too general, lacks detail, is not focused on the question and is largely unstructured.</b> <ul style="list-style-type: none"> <li>The response is very general. The knowledge and understanding presented <b>outlines</b> examples, statistics, and facts that are both relevant and irrelevant. Links to the question are <b>listed</b>.</li> <li>The argument or analysis presented is not relevant to the question.</li> <li>Basic terminology is defined and used but with errors in understanding or used inconsistently.</li> </ul>		
5–6	<b>The response partially addresses the question, but with a narrow argument, an unsubstantiated conclusion, and limited evaluation.</b> <ul style="list-style-type: none"> <li>The response <b>describes</b> relevant supporting evidence (information, examples, case studies et cetera), <b>outlining</b> appropriate link(s) to the question.</li> <li>The argument or analysis partially addresses the question or elaborates one point repeatedly.</li> <li>Relevant terminology is defined and used with minor errors in understanding or is used inconsistently.</li> </ul>		
7–8	<b>The response addresses the whole question, the analysis is evaluated and the conclusion is relevant but lacks balance.</b> <ul style="list-style-type: none"> <li>The response <b>describes</b> relevant supporting evidence correctly (information, examples and case studies) that covers all the main points of the question, <b>describing</b> appropriate links to the question.</li> <li>The argument or analysis is clear and relevant to the question but one-sided or unbalanced.</li> <li>Complex terminology is defined and used correctly but not consistently.</li> </ul>		
9–10	<b>The response is in-depth and question-specific (topic and command term); analysis and conclusion are justified through well-developed evaluation of evidence and perspectives.</b> <ul style="list-style-type: none"> <li>The response <b>explains</b> correct and relevant examples, statistics and details that are integrated in the response, <b>explaining</b> the appropriate link to the question.</li> <li>The argument or analysis is balanced, presenting evidence that is <b>discussed, explaining</b> complexity, exceptions and comparisons.</li> <li>Complex and relevant terminology is used correctly throughout the response.</li> </ul>		

## Examples

### Section C

Answer **one** question.

Where relevant, answers should refer to case studies or examples, and where appropriate include well-drawn maps or diagrams.

5. "Climate change will eventually become the main reason for human migration." To what extent do you agree with this statement? [10]

6. "Energy security is the most important aspect of resource security for nations." To what extent do you agree with this statement? [10]

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.....

.....

## Mark-scheme

### Section C

5. "Climate change will eventually become the main reason for human migration." To what extent do you agree with this statement? [10]

*Marks should be allocated according to the markbands on pages 2–3.*

Responses may tackle the question on a regional or global scale. They should have a clear understanding of the terms "climate change" and "migration" and comment on the direct links or lack of links between the two using a well-developed case study/studies or developed example(s).

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Climate change can be explained as a possible cause of migration (push/pull) at local, national or regional scales, for example: drought, increased meteorological hazards and/or rising sea levels.
- The findings of climate change predictions and projections (IPCC reports) can be explained, along with the eventual implications for population migration.
- Responses may also describe migrations which have limited links to climate change eg with economic or political push/pull factors as opposed to environmental.
- Responses may make describe the unprecedented number of refugees and economic migrants who are now living in countries where they were not born.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) which evaluates the relative importance of climate change or other economic/political factors in causing migration. Another approach might be to focus on possible interactions between different factors (conflicts causing mass movement of people may have climate change as one of their long term causes). Another approach might be to examine the different time scales over which impacts are experienced or could comment that climate change is often difficult to identify as a push factor as many migrations happen for a package of reasons, which are all, interlinked.

#### **For 5–6 marks**

Expect weakly-evidenced outlining of climate change and/or migration themes.

#### **For 7–8 marks**

Expect a well-structured account which includes:

- **EITHER** a well evidenced synthesis which links together several well-evidenced climate change and migration themes from the Guide
- **OR** a critical conclusion (or on-going evaluation) informed by geographical concepts and/or perspectives.

#### **For 9–10 marks**

Expect both traits.

## Expected Questions (pattern)

1. 'The world's poorer countries are least responsible for climate change and have most to lose because of it' to what extent do you agree with this statement? (refer page 74-75 of Simon Oakes).
2. Evaluate the importance of geo-engineering as a possible technological fix for climate change.
3. 'Adaptation to changing climate is better than geopolitical mitigation' critically examine the statement.
4. 'Climate change will increase the risks of more extreme weather events' to what extent do you agree with this statement. (refer page 54 for Simon Oakes).
5. 'It is best to follow the strategy of business as usual and not to worry too much about climate change as climate change is natural and has always change in the past' – Evaluate this statement.
6. Compare and analyze the vulnerability to climate change in **two** different geographical locations.