



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination
Sample 1

Climate Action and Sustainable
Development

Higher Level

2 hours 30 minutes

300 marks

Examination Number

----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Date of Birth

		/			/		
----------------------	----------------------	---	----------------------	----------------------	---	----------------------	----------------------

For example, 3rd February
2005 is entered as 03 02 05

Centre Stamp

Instructions

Write your answers in blue or black pen. You may use pencil and colouring pencils for graphs and diagrams only.

Write your answers in the spaces provided in this booklet. There is space for extra work at the end of the booklet. Label any such extra work clearly with the question number and part.

This examination booklet will be scanned and your work will be presented to an examiner on screen. Anything that you write outside of the answer areas may not be seen by the examiner.

Section A 60 marks

There is one question in this section, answer **all** parts of this question.

Section B 160 marks

Answer any **four** questions in this section. Each question carries 40 marks.

Section C 80 marks

Answer **one** question in this section. Each question carries 80 marks.

Section A

60 marks

Answer **all** parts of this question.

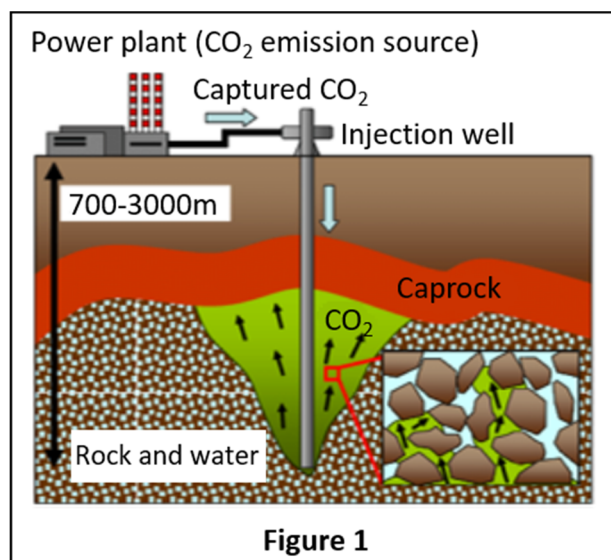
Question 1

(60 marks)

(a) Name **three** examples of renewable energy.

1.
2.
3.

(b) Examine **Figure 1** below which shows one form of carbon sequestration and answer the questions that follow.



(i) Indicate whether biological or geological carbon sequestration is being illustrated in **Figure 1** by ticking (✓) the correct box.

Biological ☐

Geological ☐

(ii) Give **one** example of a location where this method of carbon sequestration is employed.

--

- (c) **Figure 2** shows the concept of doughnut economics. Study **Figure 2** and answer the questions that follow.

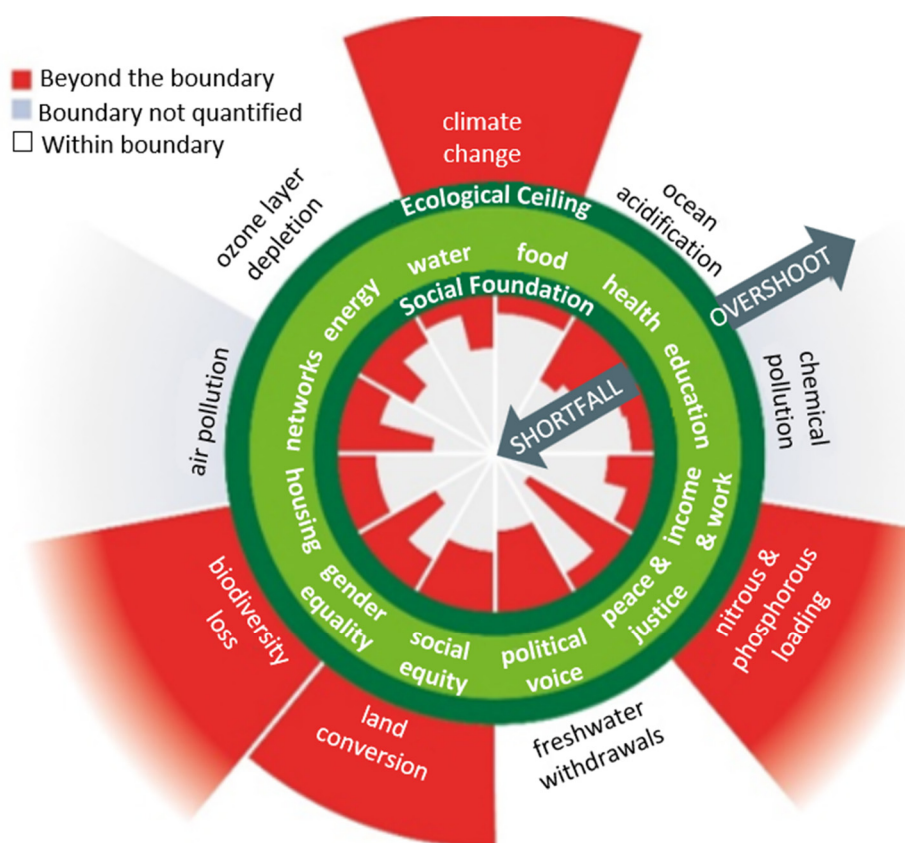


Figure 2

- (i) On what concept, relating to limits on the physical world, is doughnut economics based?

--

- (ii) State **one** positive aspect **and one** negative aspect of doughnut economics as an approach to sustainable development.

Positive aspect:
Negative aspect:

- (d) Match each of the terms below with the description in the table that best matches it. One has been completed for you.

Boycott	Lobbying	Civil disobedience	Trade union organising
--------------------	----------	--------------------	------------------------

Description	Term
A form of advocacy looking to directly influence government action.	
Representing and protecting the rights of workers.	
Refusal to cooperate or participate with a country, organisation, or person.	Boycott
Refusal of citizens to obey certain laws as a means of protest.	

- (e) Which **two** of the following are natural factors that have influenced the Earth's climate since its formation?
Tick (✓) the **two** correct boxes.

- Slow changes in the Earth's orbit ☐
- Land-use change ☐
- Burning fossil fuels ☐
- Volcanic activity ☐

- (f) The spread of invasive species is one driver of global biodiversity loss.
Name **one** example of an invasive species in Ireland **and** state how it causes biodiversity loss in an ecosystem.

- (g) Examine **Figure 3** below which shows various locations that are nearing tipping points in a number of Earth systems and answer the questions that follow.

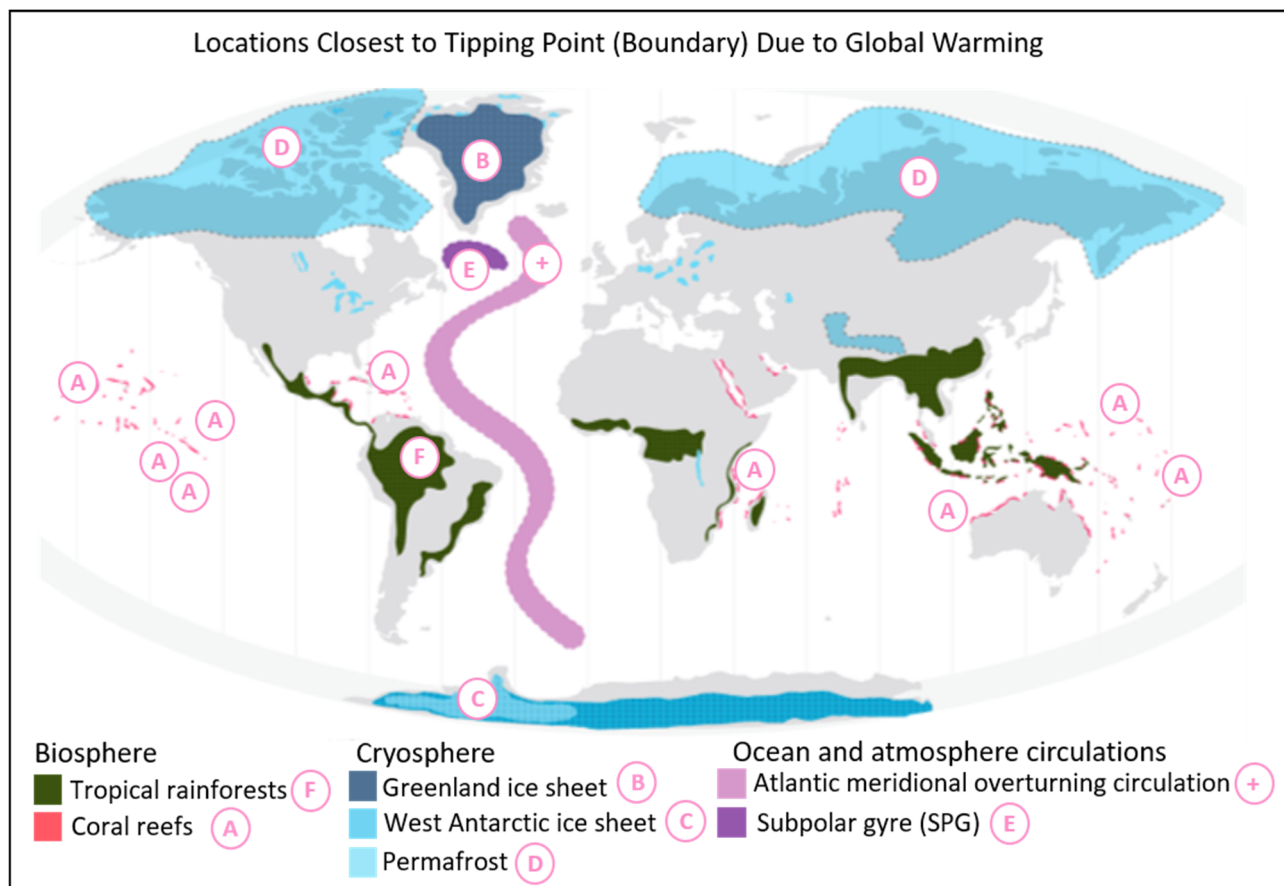


Figure 3

- (i) Name **one** example from the cryosphere that is close to its tipping point.

- (ii) State **one** impact on the biosphere of places like coral reefs or tropical rainforests reaching or going beyond their tipping point.

- (h) Study **Figure 4** below which shows information on mean sea level change between 2004 and 2023 and answer the questions that follow.

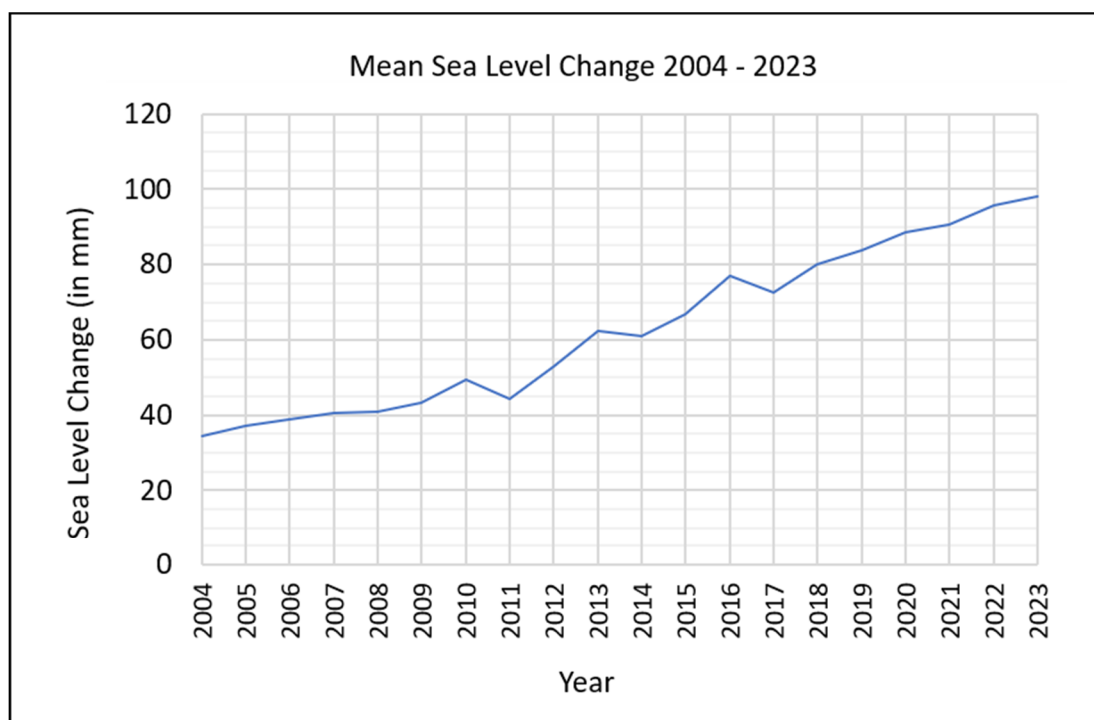


Figure 4

- (i) In what year did annual sea level change first rise above 80mm?

- (ii) Between 2004 and 2023, how many times did the year on year change in sea level run counter to the overall trend?

- (i) Indicate, by ticking (✓) the correct box, whether each of the following examples is misinformation or disinformation.

Examples	Misinformation	Disinformation
It is reported that fossil fuel companies modelled and predicted global warming with 'shocking skill and accuracy' starting in the 1970s and that they withheld that information and intentionally misled the public on the impacts of burning fossil fuels.		
Financial institutions lend money to fossil fuel companies and companies involved in deforestation but say that they are combating climate change by offering 'green investment' opportunities.		
Opinions are being spread on social media about climate change being an issue for the future but that its impacts are not being felt today.		

- (j) (i) Name **one** innovative community in Ireland that you investigated where the community worked together to adapt to the effects of climate change.

--

- (ii) State **one** effect of climate change to which the innovative community you named in part (i) is adapting.

Section B

160 marks

Answer any **four** questions in this section. Each question carries 40 marks.

Question 2

(40 marks)

(a) Draw a labelled diagram to show how the carbon cycle operates.

On your diagram, correctly label each of the following.

Burning fossil fuels	Respiration	Photosynthesis	Dead organisms
----------------------	-------------	----------------	----------------

Space for labelled diagram:

(b) List **two** actions to protect or improve a named local ecosystem that you have studied **and** for each action, state the problem that is being addressed by the action.

Ecosystem studied:	
1.	
2.	

(c) Describe any **one** of the Earth systems listed below.

Earth Systems				
Biosphere	Cryosphere	Hydrosphere	Geosphere	Atmosphere

Chosen system:
Description:

(d) Use historical testimony to demonstrate that human induced global warming is happening.

Question 3

(40 marks)

(a) State what is meant by the term *extractivism*.

(b) Describe **one** example of environmental racism that you have studied.

(c) Explain **two** arguments for the rights of nature.



- (d)** Value systems impact individuals and groups in many ways and those values can change over time.

Discuss, using an example of a group that you studied, how people's values relating to nature can change over time.

Question 4

(40 marks)



- (a) Briefly describe **one** way you ensured there were no barriers to participation in a dialogue that you facilitated related to climate action and sustainable development.

- (b) Name **one** example of each of the types of media listed in the table below.

(i) Broadcast:
(ii) Print:
(iii) Social:

- (c) In relation to a climate justice issue you studied, answer each of the following questions.

- (i) Name the issue related to climate justice you studied.

- (ii) Name **one** media outlet that covered this issue **and** examine how its worldview influenced how the issue was reported.



- (d) Imagine you are designing a public information campaign to raise awareness about the urgency of climate action.

Choose **two** reasons why urgent climate action is needed **and** justify why they should be communicated as part of the campaign.

Question 5

(40 marks)

- (a) Study **Figure 5** below which contains information about a survey carried out about climate change beliefs and attitudes of the Irish people and answer the questions that follow.

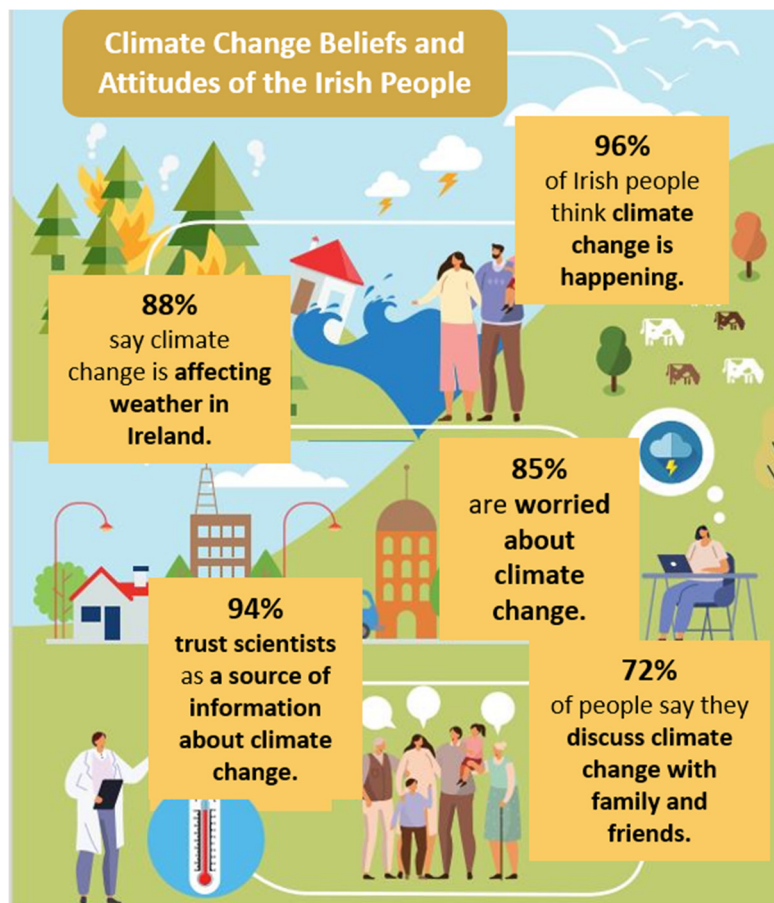


Figure 5

- (i) **Figure 5** states that 94% of respondents trust scientists as a source of information about climate change. State **one** reason why scientists are considered a trustworthy source.

- (ii) Do the statistics in **Figure 5** suggest that misinformation and disinformation about climate change have influenced the Irish public's beliefs in climate change? Explain your answer.

- (iii) Are infographics an effective way to communicate the results of research? Explain your answer.

- (b) Describe **two** ways in which climate change is contributing to biodiversity loss.

- (c) Ireland has made international commitments to the United Nations Framework Convention on Climate Change (UNFCCC) and the Conference of the Parties (COP).

Describe how international commitments agreed at one COP for climate change have impacted a specific national policy in Ireland.

Name of policy:
Description of impact:

- (d) (i) Name and describe **one** policy introduced in Ireland that aims to have a positive impact on the environment.

(ii) Do you think this policy has been implemented successfully? Explain your answer.

Question 6

(40 marks)



- (a) Explain briefly what is meant by the term *climate loss and damage*.

- (b) Explain how **one** example of a climate mitigation strategy that you have studied addresses a cause(s) of climate change.
In your answer, state the location in which the strategy was implemented.

- (c) Examine how climate justice can be promoted by the implementation of a strategy to address climate change.

- (d) (i) Name **one** nature-based approach to decarbonisation.
(ii) Briefly describe the approach **and** explain how it achieves decarbonisation.

Section C

80 marks

The questions in this section require an answer in the form of an essay.

Answer **one** question in this section. Each question carries 80 marks.

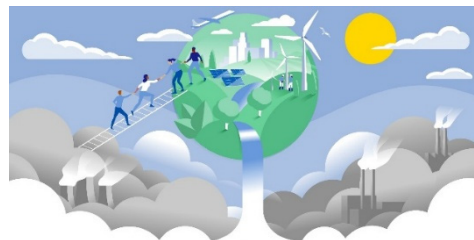
Question 7

(80 marks)

Discuss the need for a just transition for transport in Ireland.

In your discussion include the following:

- the meaning of a just transition
- reasons why the transport sector needs to change in order to meet climate targets
- how to make the transition in the transport sector *just*.



Or

Question 8

(80 marks)

Climate action should promote climate justice for humanity and nature. Discuss.

Include the following in your discussion:

- your understanding of climate justice
- how healthy ecosystems and the realisation of human rights are interdependent
- examples of actions that can be taken to address root causes of climate injustice.



Tick (✓) the relevant box to indicate which question from **Section C** you are answering.

Question 7 ☐

Question 8 ☐

Use this space for planning/roughwork.

Tick (✓) the relevant box to indicate which question from **Section C** you are answering.

Question 7 ☐

Question 8 ☐

[illegible]

Acknowledgements

Images

Image on page 3: https://www.researchgate.net/figure/Schematic-view-of-geological-storage_fig1_251711772

Image on page 4: <https://www.weforum.org/agenda/2017/04/the-new-economic-model-that-could-end-inequality-doughnut/>

Image on page 6:

https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/5gc2qerb1v_2024_living_planet_report_a_system_in_peril.pdf

Image on page 11: <https://360info.org/rights-of-nature/>

Images on page 13: <https://www.linkedin.com/pulse/barriers-effective-feedback-ambassador-paul-gitau/>;

<https://daily.kellogg.edu/2019/08/06/fun-interesting-transferable-take-jour-111-mass-media-environment-this-fall-at-kcc/>

Image on page 15: <https://www.epa.ie/news-releases/news-releases-2021/major-new-study-shows-overwhelming-agreement-among-irish-public-on-the-threat-of-climate-change-and-the-desire-for-action.php>

Image on page 19: <https://www.greenpeace.org/international/story/58334/climate-justice-and-social-justice-two-sides-of-the-same-coin/>

Images on page 21: <https://www.neste.com/news-and-insights/sustainability/just-transition>;

<https://www.youth.ie/whatisclimatejustice/>

Texts

Data on page 7: <https://www.statista.com/statistics/603821/global-cumulative-sea-level-rise/>

Example on page 8: <https://news.harvard.edu/gazette/story/2023/01/harvard-led-analysis-finds-exxonmobil-internal-research-accurately-predicted-climate-change/>

Material may have been adapted, for the purpose of assessment, without the authors' prior consent.

Do not write on this page

Do not write on this page

Do not write on this page

Do not write on this page

Copyright notice

This examination paper may contain text or images for which the State Examinations Commission is not the copyright owner, and which may have been adapted, for the purpose of assessment, without the authors' prior consent. This examination paper has been prepared in accordance with section 53(5) of the Copyright and Related Rights Act, 2000. Any subsequent use for a purpose other than the intended purpose is not authorised. The Commission does not accept liability for any infringement of third-party rights arising from unauthorised distribution or use of this examination paper.

Leaving Certificate Examination – Higher Level

Climate Action and Sustainable Development

Sample 1

2 hours 30 minutes