

No part of this product may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without written permission from the IB.

Additionally, the license tied with this product prohibits commercial use of any selected files or extracts from this product. Use by third parties, including but not limited to publishers, private teachers, tutoring or study services, preparatory schools, vendors operating curriculum mapping services or teacher resource digital platforms and app developers, is not permitted and is subject to the IB's prior written consent via a license. More information on how to request a license can be obtained from <https://ibo.org/become-an-ib-school/ib-publishing/licensing/applying-for-a-license/>.

Aucune partie de ce produit ne peut être reproduite sous quelque forme ni par quelque moyen que ce soit, électronique ou mécanique, y compris des systèmes de stockage et de récupération d'informations, sans l'autorisation écrite de l'IB.

De plus, la licence associée à ce produit interdit toute utilisation commerciale de tout fichier ou extrait sélectionné dans ce produit. L'utilisation par des tiers, y compris, sans toutefois s'y limiter, des éditeurs, des professeurs particuliers, des services de tutorat ou d'aide aux études, des établissements de préparation à l'enseignement supérieur, des fournisseurs de services de planification des programmes d'études, des gestionnaires de plateformes pédagogiques en ligne, et des développeurs d'applications, n'est pas autorisée et est soumise au consentement écrit préalable de l'IB par l'intermédiaire d'une licence. Pour plus d'informations sur la procédure à suivre pour demander une licence, rendez-vous à l'adresse suivante : <https://ibo.org/become-an-ib-school/ib-publishing/licensing/applying-for-a-license/>.

No se podrá reproducir ninguna parte de este producto de ninguna forma ni por ningún medio electrónico o mecánico, incluidos los sistemas de almacenamiento y recuperación de información, sin que medie la autorización escrita del IB.

Además, la licencia vinculada a este producto prohíbe el uso con fines comerciales de todo archivo o fragmento seleccionado de este producto. El uso por parte de terceros —lo que incluye, a título enunciativo, editoriales, profesores particulares, servicios de apoyo académico o ayuda para el estudio, colegios preparatorios, desarrolladores de aplicaciones y entidades que presten servicios de planificación curricular u ofrezcan recursos para docentes mediante plataformas digitales— no está permitido y estará sujeto al otorgamiento previo de una licencia escrita por parte del IB. En este enlace encontrará más información sobre cómo solicitar una licencia: <https://ibo.org/become-an-ib-school/ib-publishing/licensing/applying-for-a-license/>.

Geography

Standard level

Paper 1

Friday 6 November 2020 (afternoon)

1 hour 30 minutes

Instructions to candidates

- Do not open this examination paper until instructed to do so.
- Answer the questions in two options.
- The accompanying **geography resource booklet** is required for this examination paper.
- The maximum mark for this examination paper is **[40 marks]**.

Option	Questions
Option A — Freshwater	1 – 2
Option B — Oceans and coastal margins	3 – 4
Option C — Extreme environments	5 – 6
Option D — Geophysical hazards	7 – 8
Option E — Leisure, tourism and sport	9 – 10
Option F — Food and health	11 – 12
Option G — Urban environments	13 – 14

Answer the questions in **two** options.

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

Option A — Freshwater

Answer the following question.

1. Refer to the maps on page 2 of the accompanying resource booklet.

The maps show the growth of algae in a freshwater lake where eutrophication is occurring. Algae growth is caused by high levels of nutrients.

- (a) Identify **two** changes between 2003 and 2011 along the southern shore of the lake between Sandusky and Cleveland. [1+1]
- (b) Outline **one** environmental problem caused by eutrophication. [2]
- (c) Explain **one** human reason **and one** physical reason why some areas of a freshwater lake such as this experience high levels of eutrophication. [3+3]

Answer either part (a) or part (b).

Either

2. (a) Examine the role of local communities in the management of water resources. [10]

Or

2. (b) Examine the ways in which different physical factors can affect the characteristics of hydrographs. [10]

End of Option A

Option B — Oceans and coastal margins

Answer the following question.

3. Refer to the map on page 3 of the accompanying resource booklet.

The map shows land use changes that led to the loss of mangrove swamps in selected Southeast Asian countries in 2012.

- (a) (i) Identify the dominant land use that is replacing mangrove swamps on island **A**. [1]
(ii) Estimate the percentage of mangrove swamp loss caused by urban development **B**. [1]
- (b) Outline **one** physical factor necessary for the formation of a mangrove swamp. [2]
- (c) Explain **two** environmental consequences of the loss of mangrove swamps in coastal areas such as those shown on the map. [3+3]

Answer either part (a) or part (b).

Either

4. (a) Examine the role of sea level changes in the formation of relict cliffs and raised beaches. [10]

Or

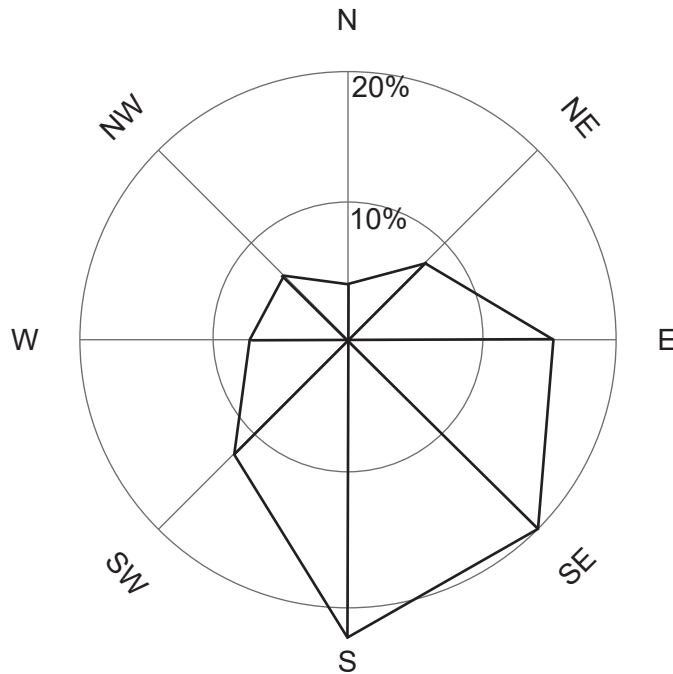
4. (b) Examine the roles of different stakeholders in the management of **one** coastal margin affected by erosion **or** flooding. [10]

End of Option B

Option C — Extreme environments

Answer the following question.

5. The radial diagram shows the facing direction for a sample of cirques/corries in a glaciated mountainous area.



Key:
Mean altitude:
South = 1500 m
North = 2200 m

- (a) (i) State the difference in mean altitude, in metres, for south-facing and north-facing corries. [1]
- (ii) Estimate the percentage of cirques/corries facing east. [1]
- (b) Outline **one** erosional process responsible for the formation of cirques/corries. [2]
- (c) Explain **two** consequences of a warming climate on ice distribution in a glaciated mountainous area such as this. [3+3]

(Option C continues on the following page)

(Option C continued)

Answer either part (a) or part (b).

Either

6. (a) Examine possible ways of managing the causes and consequences of desertification. [10]

Or

6. (b) Examine how competition over resources in **one or more** extreme environments has led to tension among stakeholders. [10]

End of Option C

Blank page

Option D — Geophysical hazards

Answer the following question.

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

The map shows Snæfellsjökull in Iceland. The scale of the map is 1:100 000 and the contour interval is 20 metres.

- (a) (i) Determine the difference in height between the spot heights at **A** and **B**. [1]
- (ii) Estimate the distance in kilometres between **A** and **B** on the map. [1]
- (b) Outline how **one** piece of map evidence indicates that this is a volcanic area. [2]
- (c) Explain how volcanic hazard vulnerability in an area such as this could be reduced using:
 - (i) GPS crater monitoring; [3]
 - (ii) lava diversions. [3]

Answer either part (a) or part (b).

Either

8. (a) Examine how social **and** economic strategies may reduce people's vulnerability to earthquake hazard events. [10]

Or

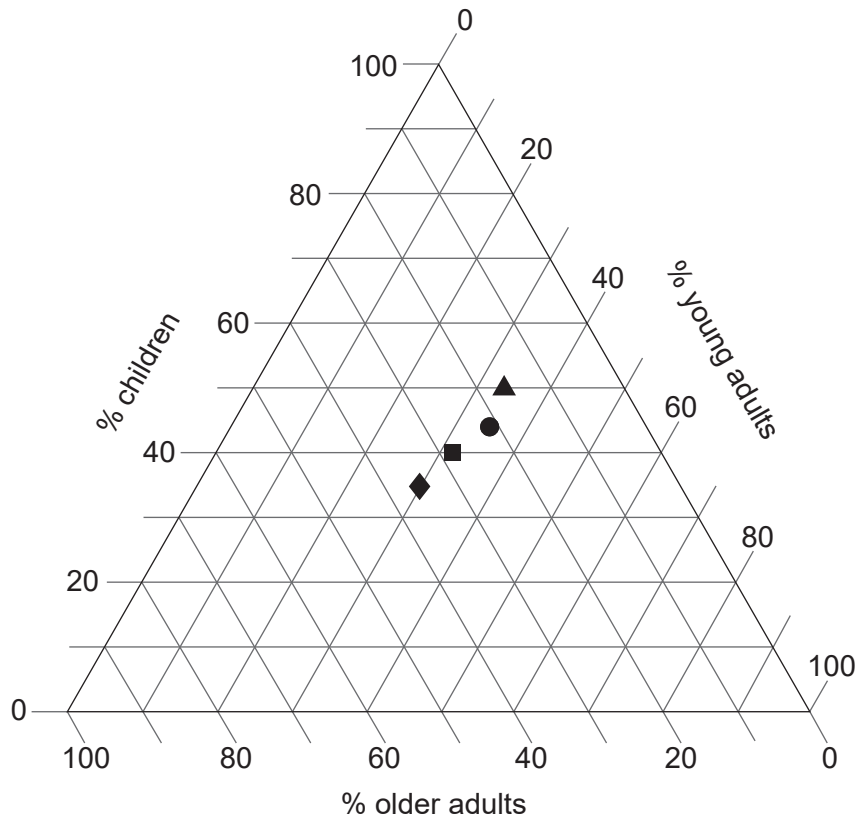
8. (b) Evaluate pre-event strategies **and** post-event strategies for the management of mass movement hazards. [10]

End of Option D

Option E — Leisure, tourism and sport

Answer the following question.

9. The triangular graph shows changes over time in the percentage of US citizens, from three different age groups, who play basketball.



Key:

- ◆ 1988
- 1998
- 2008
- ▲ 2018

- (a) (i) Estimate the percentage of older adults playing basketball in 2008. [1]
- (ii) Identify the year in which 50% of children played basketball. [1]
- (b) Outline **one** factor that can influence the location of a sports stadium. [2]
- (c) Explain why participation in basketball or other sports might increase over time for:
 - (i) women; [3]
 - (ii) low-income groups. [3]

(Option E continues on the following page)

(Option E continued)

Answer either part (a) or part (b).

Either

10. (a) Examine ways of managing the negative impacts of tourism’s rapid growth in some urban environments. [10]

Or

10. (b) Examine the advantages **and** disadvantages of the site used for **one or more** festivals. [10]

End of Option E

Option F — Food and health

Answer the following question.

11. Refer to the map on page 6 of the accompanying resource booklet.

The map shows selected African countries suffering from severe food insecurity in 2017.

- (a) Estimate the area of the country of Nigeria, in km². Show your working. [2]
- (b) Outline **one** of the main components of the food security index. [2]
- (c) Explain **two human** factors that may have led to high food insecurity in countries such as those shown. [3+3]

Answer either part (a) or part (b).

Either

12. (a) Examine ways in which people's dietary choices are sometimes influenced by different types of transnational corporation (TNC). [10]

Or

12. (b) Examine the role of diffusion and barriers in the spread of disease. [10]

End of Option F

Option G — Urban environments

Answer the following question.

13. Refer to the diagram on page 7 of the accompanying resource booklet.

The diagram shows a planned model of a superblock, part of an initiative to create sustainable smart cities.

- (a) (i) Identify **two** types of vehicle allowed within the superblock model. [1]
- (ii) Determine the number of residents living in each superblock (as enclosed by the marked roads). [1]
- (b) Outline **one** way in which the superblock model could modify the microclimate of an urban area. [2]
- (c) Explain **two** ways in which technologies can be used by urban planners to manage smart cities such as this more sustainably. [3+3]

Answer either part (a) or part (b).

Either

14. (a) Examine the costs **and** benefits of urban redevelopment for different groups of stakeholders. [10]

Or

14. (b) Examine the influence of economic **and** political factors on the location of low-quality residential areas in cities. [10]

End of Option G

References:

Option C Courtesy of the U.S. Geological Survey.

Option E Seth Kadish. The Racial Demographics of Athletes in the USA [Vizual Statistix]. July 12, 2013. Available at: <https://vizual-statistix.tumblr.com/post/55288766902/this-ternary-plot-shows-the-racial-breakdown-of> [Accessed 6 November 2019]. Source adapted.