International Geography Olympiad
Guidelines for the Tests

These guidelines are issued to enable both the organisers, and the team leaders and participants to properly prepare for Olympiads.

The topics/themes from which the questions in the Written Response Test and Multi Media Test of iGeo will be chosen are:

1. climate & climate change
2. hazards & hazard management
3. resources & resource management
4. environmental geography & sustainable development
5. landforms, landscapes & land use
6. agricultural geography & food problems
7. population & population change
8. economic geography & globalisation
9. development geography & spatial inequality
10. urban geography, urban renewal & urban planning
11. tourism & tourism management
12. cultural geography & regional identities

Required skills:

13. map skills
14. inquiry skills
15. graphicacy skills (read, analyse and interpret images, photos, statistics, graphs)

Examples of previous tests are available on the iGeo website under the relevant past iGeo.

The Written Response Test:

- consists of 6 topics (about 20 - 25 min. per topic):
  about issues that are geographically and socially relevant;
  that require topical and applied geographical knowledge and geographical skills;
  and deal with physical and human geography, preferably integrated

- each topic has several resource materials such as maps, photos, graphs, statistics

- each topic consists of several questions:
  they are based on the resource materials; they range in length from short answer to paragraph length; they may involve completion of a matrix or a table; they may involve the manipulation of data (eg from tabular to graphic form)

- the choice of the 6 topics from the list of 12 is made by the committee that designs the test

- there is a balance between physical and human geography in the test

We expect the participants to show they can apply their knowledge in concrete regional contexts and use geographical skills; we do not intend to test only the theoretical geographical knowledge of participants about the topic. The contexts can be presented by maps, figures and graphs.

The Multi Media Test consists of:

- ↘ 40 items (about 1 - 2 min. per item, depending on complexity of source material)
  about issues that are geographically and socially relevant;
  that require topical and applied geographical knowledge and geographical skills;
  and deal with physical and human geography, either separately or integrated

- ↘ each item consists of a map and/or digital photo, film or graph and a short question

- ↘ the question is a multiple-choice question with 4 options

- ↘ the test will cover all 12 topics from the list

- ↘ there is a balance between physical and human geography in the test.

For the Multi Media Test we are looking for questions that require basic geographical thinking skills, where the contestants analyse information in maps, diagrams or photographs. Thus, the Multi Media Test is not intended to test the ability of the contestants to reproduce geographical facts but to test their skills in geographical analysis.

Another reason to stress skills instead of knowledge, is the fact that the geography curricula in the participating countries vary considerably. Therefore testing geographical skills that form the core of practically every curriculum is more appropriate than asking questions about isolated geographical facts.

The ideal is to have a computer-based Multi Media Test so that all participants can manage their own time during the test. If that is not possible at a particular Olympiad we will project the questions on a big screen as well as provide all participants with a copy of the test questions.

The Fieldwork Exercise consists of:

1. Observation and mapping
2. Analysis of spatial issue in fieldwork area including additional data gathering
3. Problem-solving exercise leading to a proposal including a spatial plan or map

Step 1: a mapping exercise of (a part of) the fieldwork area: Skills that are required during the mapping exercise are:

1. observe
2. name the observed phenomena
3. locate the phenomena on the map
4. use appropriate graphic symbols
5. describe the phenomena in the map key, use scale and orientation

Students could for instance be provided with a base map and asked to add information to it using appropriate cartographic skills.

Step 2: in the fieldwork area there is a (real or hypothetical) spatial problem that will be presented to the participants. The case relates to physical and/or environmental planning. The case/problem will be introduced and documented to the participants as well as the procedures and conditions for working on the problem-solving exercise. This can be done in a number of ways: a presentation, a workshop, short excursions to the fieldwork area (or a similar area), gathering additional data in the

field, etc.

Step 3: on the basis of the mapping exercise and the analysis of all the information about the case, the participants have to design a spatial plan (map) that tackles the problem presented, and give an explanation of the choices made. The explanation needs to show that the participant has understood the nature of the problem and made connections between the properties/qualities of the fieldwork area and the suggested spatial plan. In the explanation the use of graphic material (diagrams, photos, graphs, statistics) is preferred over lengthy texts. The map (spatial plan) is mandatory; the choice of the nature of the additional information is up to the participants.

The criteria for marking the final product will be explained to the participants beforehand.

The following products will be marked:

- the result of the mapping exercise: a map of (a part of) the fieldwork area

- the result of the problem-solving exercise: it includes a short analysis of the nature of the problem, objectives of the proposal, visualisation of the proposed solution in the form of a map or plan, an explanation and underpinning of suggested plan/measures/activities.

Required skills:
1. mapping skills (read, analyse, interpret and produce maps)
2. inquiry and problem solving skills
3. graphicacy skills (read, analyse, interpret and produce images, photos, statistics, graphs)

Cartography Guidelines for Students at the International Geography Olympiad

These notes provide guidance on cartographic skills that will be useful in the International Geography Olympiad (iGeo) that runs under the auspices of the International Geographical Union[1]. The notes are general, and should not be regarded as your sole source of information on cartographic skills. The guidelines draw on two sources, *Cartography: An Introduction* (CAI) and the *Diercke International Atlas* (DIA) and page references to these are given below. However, students may instead check the cartographic topics outlined below in books already available to their leaders, for instance, in textbooks and in the introductory material of atlases.

If individuals, team leaders or national teams want access to the quoted sources, ordering information is provided in the *References* section at the end of the Guidelines. CAI is thematic, in pocket-book format, in English. It is cheap, can be ordered online, and has a cheap airmail rate for delivery anywhere in the world. DIA is an international Atlas in English, with more than 30 pages of educational material about maps. The publisher provided iGeo with multiple copies of DIA in 2013, and these copies were distributed internationally.

Map types and map grids

You need to be aware of the major types of maps (CAI 15) and be able to distinguish between major types of maps such as topographical, thematic, analogue maps based on aerial photography or satellite imagery and cartograms (CAI 33). Maps are two-dimensional representations of the Earth's curved surface. Issues of map projection (CAI 24-25, DIA 7) are not generally dealt with in iGeo tests, but you should be aware of the graphical principles of map grids and the nature of grid references.

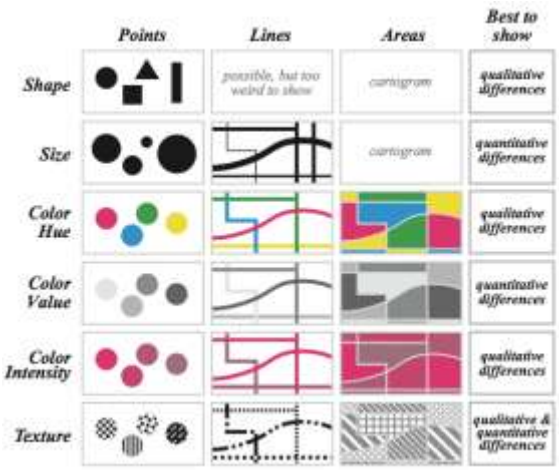
Map elements

Maps show the spatial distribution of features using points, lines and polygons (or areas) as shown on CAI 26 and on DIA 17. Points lines and polygons are shown symbolically often with familiar symbols like points for bus stops, lines showing rivers and the demarcation of areas of native forest.

Map symbols

All symbols used on the map should be explained (CAI 40-43 and DIA 16-17) in your map key. The following figure follows Jacques Bertin's (1967) *Semiologie Graphique.*

[1] The iGeo is an international Geography competition developed by the iGeo Task Force http://www.geoolympiad.org/ of the International Geographical Union http://igu-online.org/



This graphic explains how points, lines and areas (or polygons) are shown on a map by using variations in symbol shape, size of a symbol, different colours of symbols, assigning discrete values of colours to symbols, using variations in intensity of a colour in a colour 'ramp' (bottom of CAI 46) or using texture of a symbol to show different features.

Colour on Maps

There are some 'conventions' around the use of colour on maps, as shown on the typical maps of CAI 16-17, 26 and 37 show. For example, water is generally shown as blue, and vegetated areas are often green. 'Built up' urban areas are often pink, brown or grey. The block diagrams on DIA 13 and 15 show the colours associated with variations in elevation on physical geography maps.

In mapping for the iGeo it is useful to have a few coloured pencils in case you need to use colour shading to symbolise areas on the maps you make. Point data, where there are many (unnamed) locations shown, are generally black. Lines of transport are often red, grey or black, and the important consideration is the size of the symbol; where transport lines are too 'heavy', they can dominate the map unintentionally. Colour is an important part of maps in the iGeo; come to the tests with a few coloured pencils.

Text on maps

In the maps you will make at the iGeo, you will be expected to show the location of important features in the spaces you are mapping. Write legibly in black, with simple fonts and good judgement of font size; this is important in your mapping (CAI 48). You will be asked sometimes to 'annotate' your map. This means writing brief descriptive texts on parts of your map that show the distribution of features or activities you are mapping. For example, you could write "Most secondary infections of foot and mouth disease were sourced to this location", "These are the primary routes of access to the market" or "Locations of multiple fumaroles". Not all text needs to be written on the map itself; you may use text boxes in space adjacent to your map graphic and point to where the annotation applies.

Map features and design

The ability to select the features to be mapped is important, alongside the ability to generalise so that too much detail does not confuse the point of cartographic communication (CAI 22-23). The design needs to place the title, the map key and scale statement(s) appropriately (CAI 35) in relation to the map figure. Make the map graphic the focal point of the map, balance your map design by planning to leave no significant areas of 'white space' within the map border (CAI 53).

Map key

Map keys are sometimes called legends (CAI 56 – 57). The key should include all symbols shown on your map, grouping together symbols of particular classes of the distribution you are mapping. See the figure on the bottom of CAI 56. You may be asked to provide a 'descriptive key'; this extends the purpose of the key to require not just the naming of the symbol shown but also a sentence that relates to the spatial distribution of the named feature.

Map scale

Map scale is an important concept to understand, from maps of small areas at a scale of 1:1,000 to about 1:10,000, to topographic maps sheets often at scales of 1:50,000, through to national mapping series at 1:6,000,000 for example (DIA 6,7). Ratio statements are explained on CAI 21, along with the type of scale used most frequently in student maps, the bar scale. Sketch maps often express scale through a statement like "Scale: 1:5,000 approximately".

Map conventions

When making maps in the iGEO, you should follow map conventions (CAI 52) where possible. As a guide, you should include most of the following items in addition to the map graphic.

A clear and descriptive title (see maps of the Tatra Mountains on DIA 12 and 13, for example).
A key that shows and explains all the symbols used on the map (see the map of Stasbourg on DIA 9, for example)
An orientation symbol, such as a North arrow; particularly important if North is not to the top of the page. See DIA, panel 2, on page 6.
An acknowledgement of data sources. The date of data collection is often important. The sources of map information are given on CAI 62-63 and DIA 225.
A scale statement such as a scale bar as shown on CAI 21 and DIA 8.
A border or frame if this is appropriate.
An explanatory statement about the map, if appropriate. See the four notes associated with the maps of the development of Strasbourg (DIA 10).

Map templates

In the iGeo, map templates are sometimes used to provide you with an indication of the area that you are asked to map. Generally, they show only key features.

Map support

Maps are often supported by a number of different types of geographical diagrams. You are expected to be familiar with block diagrams, cross sections, pie charts, bar graphs and histograms, (time) line graphs and population pyramids. Examples of some of these forms of graphic are illustrated on DIA 25.

References

Darkes, G and Spence, S. (2008) *Cartography: An Introduction.* The British Cartographical Society, London. (ISBN 978-0-904482-23-2)
This text is available on order from http://www.cartography.org.uk/default.asp?contentID=989

Michael, T. (2010) *Diercke international atlas: geography, history, economics, politics, sciences; for use in bilingual classes and in English lessons*. Westermann, Germany.
(ISBN 978-3-14-100790-9)
Order from http://www.diercke.com/contact.xtp Customer service from olp@schulbuchzentrum-online.de

1. Faced with the increasing effects of climate change and global warming, countries have accelerated their efforts to mitigate these effects and adapt to new processes through the implementation of numerous international agreements and protocols. In this context, many international agreements have been signed since the 1970s and many of them are still in force. Which of the following is an international agreement aimed at combating climate change by reducing greenhouse gas emissions?

a) Montreal Protocol

b) Kyoto Protocol

c) Paris Agreement

d) Stockholm Convention

e) Rio Declaration

Answer: c) Paris Agreement

2. There are many predicted processes of climate change, and new ones are added every day. Which of the following is not a predicted effect of climate change?

a) Increased frequency of extreme weather events

b) Rising sea levels

c) Expansion of polar ice caps

d) Changes in precipitation patterns

e) Disruption of ecosystems and biodiversity loss

Answer: c) Expansion of polar ice caps

3. The phenomenon of slow or rapid mass movement of materials formed by physical disintegration or chemical decomposition down the slope under the action of gravity is called mass movement. From this point of view, the destabilisation of the slope is the main cause of mass movements. For this reason, various human activities on steep slopes are among the most unfavourable factors for the development of mass movements. Which of the following is not a type of mass movement hazard?

a) Landslide

b) Avalanche

c) Earthquake

d) Mudflow

e) Rockfall

Answer: c) Earthquake

4. Due to the increasing risk of earthquakes in our country, activities to demolish and rebuild buildings in order to strengthen them have gradually gained momentum as part of the urban transformation programme. In this way, urban transformation projects are being carried out mainly in large cities. What is the common purpose of these urban transformation projects?a) Encouraging suburban sprawl

b) Displacing low-income residents

c) Rehabilitating deteriorated urban areas

d) Privatizing public spaces

e) Increasing traffic congestion

Answer: c) Rehabilitating deteriorated urban areas

5. Cities are more conducive to sustainable living when they grow according to a plan. In this respect, every country in the world has zoning laws for planned urban growth. Which of the following refers specifically to the purpose of zoning laws in urban planning?

a) Promoting mixed land use

b) Encouraging environmental degradation

c) Regulating building heights

d) Supporting equitable distribution of resources

e) Facilitating urban sprawl

Answer: c) Regulating building heights

6. What is the term used for the process of the conversion of natural land into urban, suburban or industrial areas?a) Urbanization

b) Desertification

c) Deforestation

d) Reforestation

e) Fragmentation

Answer: a) Urbanization

7. Tourism activity is a major contributor to the gross national income of some countries. However, it is also discussed that tourism activities cause many environmental problems. One of the solutions proposed is ecotourism. Which of the following issues does ecotourism focus on?

a) Mass tourism

b) Cultural heritage preservation

c) Sustainable travel practices

d) Luxury accommodations

e) Urban exploration

Answer: c) Sustainable travel practices

8. Accommodation is an important part of tourism activities. There are different types of accommodation to meet different needs. Which of the following is not a type of tourist accommodation?

a) Hotel

b) Hostel

c) Airbnb

d) Cruise ship

e) City hall

Answer: e) City hall

9. The concept of carrying capacity is used in different ways for different issues. For example, the carrying capacity of a vehicle refers to the maximum load that the vehicle can carry, while biological carrying capacity is the number of individuals that will allow a species to remain in the environment indefinitely in terms of natural resources.

So, in terms of tourism management, carrying capacity refers to which of the following?

a) The number of tourists a destination can accommodate sustainably

b) The weight limit for luggage on flights

c) The capacity of tour buses

d) The maximum age limit for tourists

e) The number of souvenirs tourists can purchase

Answer: a) The number of tourists a destination can accommodate sustainably

1. Sanayi Devrimi sonrası ortaya çıkan süreçte dünya pek çok çevresel sorunla karşı karşıya kalmıştır. Bu süreç içinde iki büyük dünya savaşı, küresel ekonomik çöküşler, çevresel kirlenmenin yanında biyolojik tür kayıplarının da görülmesine neden olmuştur. Biyolojik çeşitliliği etkileyen pek çok faktör bulunmakla birlikte yaşam alanlarının bozulması tür kayıpları için en önemli neden olarak görülmektedir.

Buna göre dünya çapında biyoçeşitlilik kaybının başlıca nedeni aşağıdaki seçeneklerden hangisinde verilmiştir?

a) Endüstriyel kirlilik

b) İklim değişikliği

c) Habitat tahribatı

d) Aşırı nüfus

e) Ormansızlaşma

Cevap: c) Habitat tahribatı

2. Artan nüfus ve değişen iklim koşulları ile birlikte güvenli gıdaya erişimde tarımsal sürdürülebilirlik en önemli faktörlerden biri haline gelmiştir. Buna göre aşağıdakilerden hangisi sürdürülebilir tarımın temel özelliklerinden biridir?

a) Kimyasal gübre ve pestisitlerin yoğun kullanımı

b) Monokültür çiftçilik

c) Yüksek su tüketimi

d) Ürün rotasyonu ve tarımsal ormancılık

e) Tarımsal genişleme için ormansızlaşma

Cevap: d) Ürün rotasyonu ve tarımsal ormancılık

3. Değişen iklim koşullarının antropolojik anlamda birçok etkeni bulunmaktadır. Diğer bir ifade ile pek çok insan faaliyeti atmosferde sera gazı miktarının artmasına neden olmaktadır. Hangi Antropojenik faaliyetler sera gazı emisyonlarının artmasına katkıda bulunur?

a) Ormansızlaşma

b) Fosil yakıtların yakılması

c) Endüstriyel süreçler

d) Tarım

e) Yukarıdakilerin hepsi

Cevap: e) Yukarıdakilerin hepsi

4. Kasırga ve tayfunların oluşumuna katkıda bulunan ana faktör nedir?

a) Yüksek basınç sistemleri

b) Düşük rüzgar hızları

c) Soğuk okyanus akıntıları

d) Artan okyanus sıcaklıkları

e) Azalan nem oranı

Cevap: d) Artan okyanus sıcaklıkları

5. Yer şekilleri farklı iç ve dış etmenler ve faktörlerle şekillenmektedir. Fiziki Coğrafyanın bir alt dalı olarak, dünya yüzeyinin şekillerini ve bunların oluşum süreçlerini inceleyen bilim dalı olan Jeomorfoloji de bu faktörlerle ilgili çalışmaları kapsamaktadır.

Temel yer şekillerinden olan kıyı yer şekilleri de belirli etmen ve süreçlerin etkisi altında gelişmektedir. Buna göre kıyı şekillerinin oluşumunu etkileyen birincil faktör aşağıdakilerden hangisidir?

a) Buzul aktivitesi

b) Tektonik levha hareketi

c) Rüzgar ve su ile erozyon

d) Volkanik patlamalar

e) Sismik faaliyet

Cevap: c) Rüzgar ve su ile erozyon

6. Turizm çeşitliliği bir ülkenin tarihi kültürel ve doğal çeşitliliğini de yansıtan unsurlardan biridir. Ülkemiz de bu açıdan zengin turizm çeşitliliğine sahip durumdadır. Bu turizm türlerinden bir kısmı daha çok gözlem üzerine dayalı aktiviteleri içermektedir. Ziyaretçiler yaban hayatını, onları rahatsız etmeden doğal ortamlarında gözlemleme fırsatı bulabilmektedirler. Bu şekilde ziyaretçilerin yaban hayatını doğal ortamlarında gözlemlemek için doğal alanlar gerçekleştirdikleri ziyarete ne ad verilmektedir?

a) Macera turizmi

b) Kültür turizmi

c) Yaban hayatı turizmi

d) Kentsel turizm

e) Miras turizmi

Cevap: c) Yaban hayatı turizmi