

MARK SCHEME for the May/June 2015 series

9768 GEOGRAPHY

9768/01

Paper 1 (Geographical Issues), maximum raw mark 105

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Section A
Tectonic Hazards

- 1 (a) Define the term *tsunami*. [2]

A wave of sea water caused by an undersea earthquake or volcano (sometimes possibly by a large submarine landslide) which moves at great speed, getting larger as it approaches land. It is not a tidal wave.

- (b) Fig. 1 shows the levels of risk from earthquakes. Describe the pattern of risk shown on Fig. 1. [4]

There are two components, the general distribution related to the main tectonic plate junctions and the trend shown by areas such as western South America. The areas without a seismic hazard should also be mentioned.

- (c) Briefly explain the pattern of risk shown on Fig. 1. [5]

Explanations will be based on the global pattern of tectonic plates. The main seismic hazard zones are related to boundaries where plates are coming together such as the Pacific Ring of Fire, Middle East, and the Himalayas. Lesser zones can be observed along the African Rift Valley. Areas lacking a hazard are related to stable continental plates. The west-east zonation in western South America and other areas is a result of the downward slanting subduction zone.

Candidates show:

- L3** good coverage of both aspects noted in the mark scheme with a detailed explanation of the essential tectonic characteristics. [4–5]
- L2** understanding that will be incomplete in some respects, perhaps the zonation within regions will not be related to the subduction process. [2–3]
- L1** show little understanding of plate tectonics, both in terms of global distribution and the specific tectonic processes. [0–1]

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- (d) Explain why it is difficult to predict the magnitude, timing and location of earthquakes.** **[9]**

The possible ways of predicting earthquakes should be discussed with an assessment as to how accurate they are in terms of predicting the three elements noted in the question. Even if it is possible to sense that an earthquake might occur it is very difficult to estimate where it will occur and even less easy to predict its strength. There needs to be a good coverage of the various prediction methods.

Candidates show:

- L3** good appreciation of all three elements with a valid assessment of the difficulties of prediction. A range of predictive techniques will be discussed. **[8–9]**
- L2** knowledge of some predictive techniques but the assessment of their usefulness will be lacking in some respects. Answers might not cover all three elements. **[5–7]**
- L1** little knowledge or understanding of predictive techniques and will be unable to provide an assessment. **[0–4]**

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Hazardous Weather

- 2 (a) State two hazards resulting from tropical cyclones (hurricanes). [2]

Hazards could include wind damage, flooding (river and coastal), storm surges.

- (b) Figs. 2A shows the current tracks and intensities of tropical cyclones (hurricanes) in the Caribbean and Atlantic Ocean and Fig. 2B shows the predicted tracks and intensities in the future as a result of climate change.

Using Figs. 2A and 2B, outline the changes to the tracks shown. [4]

The main points to cover are the apparent increase in number, perhaps a greater concentration in the Gulf of Mexico, the increased number in the mid-Atlantic and the increased proportion in category 4–5. Some might mention the possibility of the storms penetrating further inland.

- (c) Briefly explain some of the possible causes for the differences you have described in (b). [5]

Explanations will focus on global warming, the increase in sea surface temperatures, the role of latent heat, and the effect these have on tropical storm formation. Understanding of the way tropical storms develop and then increase in strength is crucial.

Candidates show:

L3 a thorough understanding of the formation of tropical storms and an ability to relate it to the possibility of global warming. [4–5]

L2 an understanding that global warming is involved but will have an incomplete understanding of tropical storm formation. [2–3]

L3 little understanding of tropical storm formation. [0–1]

- (d) With reference to examples, assess some of the ways in which the risks from tropical cyclones (hurricanes) may be modified. [9]

Emphasis will be on modifying the risk (monitoring, prediction), modifying the hazard (preparation, protection) and modifying the loss. As well as a discussion of these elements there needs to be some assessment of their relative importance and efficiency.

Candidates show:

L3 knowledge of the range of elements noted above and an ability to provide a realistic assessment of their usefulness with relevant examples. [8–9]

L2 knowledge of some of the main elements but the answers will be somewhat partial and the assessment might be speculative rather than based on actual examples. [5–7]

L1 little knowledge and will be unable to provide an assessment. Specific examples may be missing or inappropriate. [0–4]

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Hydrological Hazards

3 (a) Fig. 3 shows the main components of the hydrological cycle.

(i) Name the component labelled A. [1]

Interception

(ii) Name the component labelled B. [1]

Throughflow

(b) Fig. 4 shows the year with the highest water level ‘above flood stage’ of the River Mississippi at a number of points.

Describe the pattern of flooding shown in Fig. 4 [4]

There is no consistent pattern along the river but there is clustering during certain time periods. The highest flows in the later years, 1993–2008, are clustered in the upper reaches and those for 2011 are mainly in the lower reaches. All these points are not required for full marks but there should be discussion of more than one aspect.

(c) Briefly explain two possible reasons for the patterns of flooding such as that shown in Fig. 4. [5]

The main factors to discuss are: the degree of engineering at different points; land use changes at different points; changes in precipitation amounts and/or intensity with perhaps a contrast between local, high intensity storms and more generalised rainfall events; variations in synoptic patterns from one year to the next. Major tributaries entering the river at different points could also cause the variations in flooding. Any factor that could increase localised surface runoff is acceptable.

Candidates show:

L3 good knowledge and understanding of the relevant factors that might account for increased runoff and therefore flooding. Both climate and land use change will be assessed. [4–5]

L2 some knowledge and understanding but answers might be unbalanced and perhaps with a concentration on land use changes. [2–3]

L1 little knowledge or understanding of the drainage basin hydrological cycle and an inability to provide a convincing discussion. [0–1]

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(d) Assess the extent to which water deficit is the result of human causes. [9]

Human causes will be over-use of water, over-abstraction in some parts of large drainage basins, industrialisation etc. Natural causes will be related to changing climate and drought. An assessment of the relative roles is necessary for good marks. Better responses might see a relationship between human activity and changing precipitation levels, either as a result of global warming or land use changes such as desertification.

Candidates show:

- L3** knowledge of both human and natural effects and an ability to provide a reasoned assessment. **[8–9]**
- L2** knowledge of some factors, which may be limited in some respects with limited assessment. **[5-7]**
- L1** little understanding of the factors influencing water deficit and with little reasoned assessment **[0–4]**

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Section B
The Geography of Crime

- 4 (a) State two types of crime.** [2]

International, crimes against people, crimes against property, employment crimes, anti-social crime, environmental crime, corporation crime.

- (b) Fig. 5 shows homicide (murder) rates per 100,000 people for 2011. Describe the distribution shown in Fig. 5.** [4]

Africa, South America and Central America possess higher rates although there is some variation. Parts of Europe have very low rates and North America, much of Europe, Asia and Australasia have quite low rates. North Africa also generally has low rates. For full marks there should be a good global coverage as well as identifying some of the anomalies.

- (c) Outline two possible reasons why murder rates might differ between countries.** [5]

This is a generic question and so there is no requirement for knowledge of specific countries. Factors include levels of crime in general, poverty inducing such activity, levels of policing and possibly social mores. Ethnic and social conflict could also be relevant.

Candidates show:

L3 a good understanding of two reasons underpinning murder rates with a range of factors and issues. [4–5]

L2 some understanding of two reasons but with a lack of balance and detail between them. [2–3]

L1 an inability to provide two relevant reasons and little understanding of relevant factors. [0–1]

- (d) Assess the contribution of the media to people’s perception of the crime hazard.** [9]

Media can include books, newspapers, radio and television. The media tend to concentrate on the more serious types of crime and therefore it might appear as if these types are more important than they are. Many crimes suffer underreporting and so the incidence and mix of crimes may be misleading.

Candidates show:

L3 good understanding of crime perception and the way the media can distort the reporting. The assessment will be based on reasoned argument. [8–9]

L2 some understanding of crime perception and reporting but the answer will be partial and limited in scope. [5–7]

L1 little understanding of the question and will be unable to provide a rational discussion. [0–4]

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Health and Disease

- 5 (a) State two ways in which diseases may be transmitted. [2]

Water-borne, human contact, insects, animals, aerosols.

- (b) Fig. 6 shows infant mortality rates for 1990 and 2012 for selected geographical regions.

Compare and contrast the infant mortality rates shown in Fig. 6. [4]

All regions have shown a decrease in mortality rates but there are variations in terms of the actual rates and the degree to which the rates have been reduced. West and Central Africa and Eastern and Southern Africa had high rates in 1990 but the latter's rates have decreased the most (53%). South Asia had lower rates to start with but these have decreased quite significantly (54%). East Asia and the Pacific region had the lowest rates in 1990 and these have decreased by the greatest proportion (65%). This amount of detail is not required for full marks but there should be comparison of rates and degree of reduction.

- (c) Briefly examine the possible links between health, socio-economic status and poverty. [5]

A variety of aspects could be discussed including the relationships between poverty and health and disease, such as poor living conditions and inadequate and inappropriate diet. People in poverty tend to have poor, crowded living conditions where infectious diseases can spread easily. Better answers will make the distinction between infectious diseases and chronic conditions.

Candidates show:

- L3** a good understanding of the links and will probably discuss both infectious diseases and chronic conditions and their relation to poverty. [4–5]
- L2** some understanding of the links but may not see the distinction between infectious diseases and chronic conditions. [2–3]
- L1** little knowledge or understanding of the links. [0–1]

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- (d) **With reference to specific examples, examine some of the ways in which welfare and health care provision can be improved.** [9]

The syllabus lists a number of ways such as increasing the number of doctors, nurses and hospitals, extending access to clean water, industrial and environmental welfare and the use of vaccination. Responses should cover a range of aspects.

Candidates show:

- L3** knowledge of a range of ways with an assessment based on reason and perhaps some relevant examples. [8–9]
- L2** some knowledge but the range might be limited and the assessment partial. [5–7]
- L1** little knowledge of the aspects raised by the question. [0–4]

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Spatial Inequality and Poverty

- 6 (a) State two single criterion indices that measure poverty and inequality. [2]

The syllabus lists GNP per person, adult literacy rate and infant mortality rate, but this list is not exhaustive. Other indices could include GDP per person or Gini coefficient. Any index that is related to poverty and inequality will be acceptable.

- (b) Fig. 7 shows the share of national income of the top one per cent of earners for selected countries for the period 1980–2010.

Compare and contrast the trends for the USA and Sweden. [4]

There has been an increase in both countries during the period. However, the increase varies considerably between the two countries. The increase has been less for Sweden but the USA has shown a massive increase. The increase for Sweden has been very gradual but the trend for the USA shows marked fluctuations with some decreases as well as the general increase. The overall trend and fluctuations are needed for full marks.

- (c) Briefly explain how levels of inequality may change within a country. [5]

A number of factors can be discussed, most reflecting the control that particular governments have on issues such as a minimum wage, tax concessions, the nature of the welfare state and factors that help to create a more equal society. During economic recession it is always the poorest in society that are affected most, leading to greater inequality.

Candidates show:

L3 a good appreciation of the factors that affect inequality and poverty and how these may change within a country. [4–5]

L2 a partial appreciation of the factors affecting inequality and poverty and limited understanding as to how these may change within a country. [2–3]

L3 little understanding of the factors affecting inequality and poverty and how these might change. [0–1]

- (d) Examine some of the ways in which the global development gap might be reduced. [9]

The syllabus lists top-down and bottom-up approaches, international aid and intermediate/appropriate technology. The UN Millennium Goals would also be appropriate. ‘Examine’ involves assessment so the answer should be based on specific examples.

Candidates show:

L3 a good knowledge of the range of approaches with reasoning based on relevant and accurate examples. [8–9]

L2 knowledge of some of the ways but limited in some respects, possibly with the use of specific examples. [5–7]

L1 little knowledge or specific examples and will be unable to provide a reasoned assessment. [0–4]

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Section C

- 7 Assess the extent to which it is possible to reduce the impacts of geographical hazards.** [25]

Indicative content

The question allows for a range of hazards to be discussed and better responses will discuss more than one hazard. The key to a good answer is the level of assessment. This can only be achieved with the use of relevant and accurate examples. The detail produced will depend on the hazards chosen.

At lower levels a limited range of hazards will be discussed, probably only one, and there will be little of the specific detail needed for assessment. Responses will demonstrate some knowledge and understanding of the subject content but will be lacking in depth and detail. Exemplification, if used, will probably be limited and perhaps not appropriate. The question will only be addressed partially and the conclusion will be basic and may not be related to the main part of the answer.

At higher levels, candidates will write convincingly about a range of hazards using good examples to illustrate the assessment. The analysis will be detailed, wide-ranging and accurate.

Exemplification will be relevant, detailed and accurate and the conclusion will show a high level of insight concerning the impacts of the geographical issues that have been discussed. The answer will be effectively organised with ideas following in a logical order.

- 8 Evaluate the effectiveness of different approaches to tackling the geographical issues faced by an area you have studied.** [25]

Indicative content

Much will depend on the level of knowledge and understanding of the area studied. This area can be at a variety of spatial scales. The emphasis is on the nature of the approaches rather than a simple description of the geographical issues faced by the area.

At lower levels, the detail concerning the specific area may be limited and inaccurate in some respects with little realistic assessment. The question will be addressed only in part and may be badly organised. The analysis may be based on limited exemplification, some of which may be irrelevant or inaccurate. Conclusions, where they are present, may be asserted. At higher levels, the response will demonstrate a thorough knowledge of the chosen area and a good understanding of the nature of the issues. The assessment will be based on reasoned argument using sound geographical knowledge. The exemplification will be detailed and relevant and will be used in a meaningful way to substantiate the arguments presented. The conclusion will show a high level of insight and will be logical and related to the argument within the body of the question.

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- 9 'It is easier to tackle socio-economic issues than it is to manage the impacts of geographical hazards.' [25]

Discuss the validity of this statement.

Indicative content

This question requires knowledge and understanding of both geographical issues and geographical hazards. The question implies that more than one issue and hazard should be discussed with the use of relevant examples.

At lower levels the range of issues and hazards will be limited and the lack of knowledge of specific examples will restrict the assessment. The question will be understood weakly and may only be addressed in part. There will be a lack of clarity in the organisation of the response and the conclusion will be weak, simply asserted or missing. At higher levels, the range of issues and hazards will be impressive with good appreciation of specific examples. There will be a good balance between the two main components. The discussion will be wide-ranging with excellent exemplification. Arguments will be well-focused and the conclusion will be logical, well-founded and showing a high level of insight.