Cambridge Assessment International Education

Cambridge Pre-U

GEOGRAPHY **9768/03**

Paper 3 Geographical Issues **May/June 2022**

MARK SCHEME

Maximum Mark: 105

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2022 series for most Cambridge IGCSE, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.

This syllabus is regulated for use in England, Wales and Northern Ireland as a Cambridge International Level 3 Pre-U Certificate.

[Turn over

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Generic Mark Scheme (GMS)

Level	Marks	Assessment criteria
5	**22–25**	• Wide-ranging, detailed and accurate knowledge and clear, high order understanding of the subject content • Relevant, detailed and accurate exemplification used effectively • Logical and clear organisation; good English expression; full and accurate use of geographical terminology • Well annotated and executed sketch maps/diagrams integrated fully with the text • Fully focused on the specific demands of the question • Systematic analysis and a critical approach to evaluation; appropriate application of concepts and theories • Conclusion shows high level insight and is logical and well founded on evidence and argument
4	**18–21**	• Good knowledge and depth of understanding of the subject content • Appropriate and well developed exemplification • Logical organisation; sound English expression; appropriate use of geographical terminology • Clearly annotated sketch maps/diagrams well integrated with the text • Well focused on the demands of the question • Elements of systematic analysis and ability to evaluate; generally appropriate application of concepts and theories • Conclusion is sound and based on evidence and argument
3	**14–17**	• Sound knowledge and understanding of the subject content lacking depth in some areas • Appropriate but partial exemplification, may not be integrated with the text • Generally clear communication but lacking some organisation; English expression and use of geographical terminology are mostly accurate • Sketch maps/diagrams generally used effectively and appropriately • Specific demands of the question mostly met • Some ability to analyse and evaluate; limited application of concepts and theories • Conclusion is limited and has some links to the rest of the response
2	**10–13**	• Some knowledge and understanding of the subject content lacking depth and detail • Exemplification used may be limited or not fully appropriate • Limited organisation; English expression is basic with some accurate use of geographical terminology • Sketch maps/diagrams may have inaccuracies and limited relevance • Question is addressed broadly or partially • Analysis, evaluation and application of concepts and theories are limited and may be superficial • Conclusion is basic and may not be linked to the rest of the response

Level	Marks	Assessment criteria
1	**1–9**	• Little knowledge and understanding of the subject content; response may also contain unconnected material • Exemplification, if used, is simple and poorly related to the text or may not be relevant • Lack of clarity and organisation; English expression is simple with inaccuracies; geographical terminology, if used, is basic or not understood • Sketch maps/diagrams are limited or poorly executed and may lack relevance • Question is understood weakly and may be addressed slightly • Superficial statements replace analysis and evaluation; application of concepts and theories may be minimal or absent • Conclusion may be absent or simply asserted
0	**0**	• No creditable response.

Section A

Answer **two** questions from this section.

Tectonic hazards

Question	Answer	Marks
1(a)	**Fig. 1.1 shows the effect of the 2011 tsunami on the town of Wakuya, Japan.** **State <u>two</u> hazards associated with volcanic eruptions.** The syllabus lists pyroclastic flows, lava flows, tephra, ash falls, lahars, jökulhlaups, toxic gases.	**2**
1(b)	**Using Fig. 1.1 describe the primary impacts of the tsunami on the town of Wakuya.** There are many primary impacts that could be described such as: • Destruction of buildings • Stranded ships • Harbour destroyed • Communications destroyed The emphasis must be on impacts that can be observed on the photograph. Four impacts with a description for four marks.	**4**

Question	Answer	Marks
1(c)	**Briefly explain why the long-term consequences of a tsunami vary from place to place.** Indicative content: The long-term consequences will be determined by the strength of the tsunami, the nature of the coastline and any offshore contours and the nature and effect of human activity. The stronger the tsunami the more likely the long-term effects. Population structure, infrastructure and land use that are affected will also determine the long-term consequences. The emphasis is on long-term thus the immediate effect of the tsunami is not the focus of the question, although the severity of the immediate impacts will have an influence on long-term consequences. Candidates show: **Level 3 (4–5)** A thorough understanding of why the long-term consequences of a tsunami vary from place to place. **Level 2 (2–3)** Some understanding of why the long-term consequences of a tsunami vary from place to place. Specific examples may be lacking in detail or lacking completely. **Level 1 (0–1)** Little understanding of why the long-term consequences of a tsunami vary from place to place with little use of specific examples.	**5**

Question	Answer	Marks
1(d)	**Assess the extent to which it is easier to reduce the impacts of volcanic eruptions than those of earthquakes.** Indicative content: The emphasis will be on the potential impacts of both volcanic eruptions and earthquakes and how easy it is to reduce their impacts. For earthquakes, there will probably be a discussion of building design and difficulties of prediction. Volcanic eruptions may be easier to predict but reducing the impact of the eruption will depend on the nature of the volcanic processes. Lava flows might be easier to manage than pyroclastic flows and ash falls. Candidates show: **Level 3 (8–9)** A thorough understanding of the impacts associated with volcanoes and earthquakes with a realistic assessment of the extent to which the impacts can be reduced. **Level 2 (5–7)** A partial understanding of the impacts associated with volcanoes and earthquakes with an incomplete assessment of the extent to which the impacts can be reduced. **Level 1 (0–4)** A superficial understanding of the impacts associated with volcanoes and earthquakes with little assessment of the extent to which the impacts can be reduced.	**9**

Meteorological hazards

Question	Answer	Marks
2(a)	**Fig. 2.1 shows predicted visibility, 10 May 2019, New Zealand.** **State <u>two</u> hazards that are the result of dense fog.** Hazards are all related to lack of visibility such as: road accidents, disruption to communications such as air travel.	**2**
2(b)	**Describe the distribution of predicted visibility shown in Fig. 2.1.** There should be a discussion of both islands. Points that could be raised are: • Greatest area of extreme low visibility is in North Island and is in a continuous band • Less extensive area of extreme low visibility in South Island and the area is discontinuous • Extreme low visibility appears to be concentrated in the lowland areas in both islands (also on the western sides) • Northern peninsula of North Island is almost completely blanketed in extreme low visibility Four simple descriptive points for four marks.	**4**
2(c)	**Briefly explain the formation of <u>either</u> radiation fog <u>or</u> advection fog.** Indicative content: Radiation fog formation involves: • Radiation cooling of the ground • At night with clear skies and calm conditions • Leading to the cooling of the air to dew point near the ground • Leading to condensation Advection fog formation involves: • The movement of warm air • Over a cold surface • With the cooling of the air to dew point • Leading to condensation at low levels Candidates show: **Level 3 (4–5)** A thorough understanding of the chosen type of fog. **Level 2 (2–3)** Some understanding of the chosen type of fog. **Level 1 (0–1)** Little understanding of the chosen type of fog.	**5**

Question	Answer	Marks
2(d)	**'It is easier to predict the timing and location of tornadoes than tropical storms and cyclones.' How far do you agree with this statement?** Indicative content: There is no one conclusion to this statement; it can be argued both ways. Tropical storms and cyclones can be identified before they hit land, but their timing and exact points of landfall are difficult to predict. Prediction of the timing and specific location of tornadoes are very difficult because tornadoes often spontaneously appear with little prior warning, depending on local circumstances. Candidates show: **Level 3 (8–9)** A thorough understanding as to how prediction of the timing and location of the two meteorological hazards differ. There will be a reasoned assessment of the question. **Level 2 (5–7)** A partial understanding as to how prediction of the timing and location of the two meteorological hazards differ. There will be an incomplete assessment of the question. **Level 1 (0–4)** A superficial understanding as to how prediction of the timing and location of the two meteorological hazards differ. There will be little assessment of the question.	**9**

Hydrological hazards

Question	Answer	Marks
3(a)	**Fig. 3.1 shows February 2020 UK rainfall as a percentage of the 1981–2010 average for February.** **Define the term *river regime*.** The annual variation (1) in discharge of a river (1).	**2**
3(b)	**Using Fig. 3.1, describe the distribution of February 2020 UK rainfall as a percentage of the 1981–2010 average for February.** The main points that could be raised are: • All areas except north-east Scotland are above average • Northern England and a few scattered other areas (Wales, central England) have the most extreme percentage above average • South-east and south-west areas are nearest to the long-term average • Eastern areas and far north-western Scotland generally lower percentages but above the long-term average Four basic points for four marks.	**4**
3(c)	**Briefly explain how agriculture can affect the shape of storm hydrographs.** Indicative content: The relevant part of the syllabus is the modification of the hydrological cycle by agriculture. The storm hydrograph will be affected by the change in the components of the hydrological cycle. The effects on the storm hydrograph will depend on the type of agriculture. The main point is the effect on runoff. Pasture may allow more infiltration and less runoff whereas intense arable cultivation will tend to increase runoff depending on the growth of crops and the nature of cropping. Allow tree crops as a form of agriculture but not deforestation unless qualified by the type of agriculture that results on the cleared land. Candidates show: **Level 3 (4–5)** A thorough understanding as to how agriculture affects the storm hydrograph. There should be a discussion of types of agriculture. **Level 2 (2–3)** A partial understanding as to how agriculture affects the storm hydrograph. There may be a limited discussion of types of agriculture. **Level 1 (0–1)** A superficial understanding as to how agriculture affects the storm hydrograph. Limited use of examples.	**5**

Question	Answer	Marks
3(d)	**Assess the extent to which soft engineering strategies may mitigate the impacts of river floods.** Indicative content: There needs to be a discussion of various types of soft engineering and the extent to which the various types can mitigate river flooding. The argument may well be that one type on its own is limited but in combination with others may be more successful. Candidates show: **Level 3 (8–9)** A thorough understanding of soft engineering strategies with a realistic assessment of their success or otherwise in mitigating river flooding. **Level 2 (5–7)** A partial understanding of soft engineering strategies with an incomplete assessment of their success in mitigating river flooding. **Level 1 (0–4)** A superficial understanding of soft engineering strategies with little assessment of their success in mitigating river flooding.	**9**

Section B

Answer **two** questions from this section.

Crime issues

Question	Answer	Marks
4(a)	**Fig. 4.1 shows the total crime rate and incidence rates (per 1000 population) of three types of crime in selected regions of England for the year ending September 2019.** **State <u>two</u> types of environmental crimes.** The syllabus lists fly tipping and pollution spills, but there may be more types such as effects on wildlife.	**2**
4(b)	**Compare the total crime rate and incidence rates of crime for the regions shown in Fig. 4.1.** The main points that could be raised are: • The South West has the lowest overall rate and the North East the highest • The North East, apart from burglary, has the highest rate for all categories • London has the highest rate for burglary • The South West, apart from sex offences, has the lowest rate for all the categories • The North East has the highest rate for violence against persons • Similarities as well as differences should be discussed. There are other observations that could be made. Four basic points for four marks.	**4**

Question	Answer	Marks
4(c)	**Suggest how vulnerability to different types of crime may vary with gender.** Indicative content: There are many ways that gender might affect vulnerability to crime. A discussion of genders should be expected. The vulnerability will reflect different lifestyles and different circumstances. Candidates show: **Level 3 (4–5)** A thorough understanding as to why vulnerability to crime might vary with gender. **Level 2 (2–3)** A partial understanding as to why vulnerability to crime might vary with gender. **Level 1 (0–1)** A superficial understanding as to why vulnerability to crime might vary with gender.	**5**
4(d)	**Assess the effectiveness of national scale initiatives to reduce crime.** Indicative content: There are a variety of initiatives listed in the syllabus: increased visibility and CCTV, privatisation of public space including shopping centres and gated communities, increased policing on the streets, strategies to alleviate socio-economic deprivation. Candidates show: **Level 3 (8–9)** A thorough understanding and realistic assessment of initiatives to reduce crime at the national scale with a good range of examples. **Level 2 (5–7)** A partial understanding and limited assessment of initiatives to reduce crime at the national scale with a limited range of examples. **Level 1 (0–4)** Little understanding and very limited assessment of initiatives to reduce crime at the national scale with minimal examples.	**9**

Health issues

Question	Answer	Marks
5(a)	**Fig. 5.1 shows the relationships between the proportion of water supply that is untreated, infant mortality rate and Gross Domestic Product (GDP) per capita.** **Define the term *life expectancy*.** A statistical measure of the average length of time (1) a person is expected to live at birth (1).	**2**
5(b)	**Using Fig. 5.1, describe the relationships between the proportion of water supply that is untreated, infant mortality rate and GDP per capita.** The main points are: • There appears to be a positive relationship between infant mortality rate and percentage of untreated water • The higher the GDP, the lower the percentage of untreated water and the lower the infant mortality rate There should be a discussion of these relationships, their strength, and anomalies. Four relevant points for four marks.	**4**
5(c)	**Suggest <u>two</u> ways in which personal affluence may affect health.** Indicative content: Personal affluence is linked to the many factors that can affect health such as diet, type and density of housing and housing structure, socio-economic status, lifestyle choices etc. Candidates show: **Level 3 (4–5)** A well-balanced and thorough understanding of two ways personal affluence can affect health using a variety of factors related to affluence. **Level 2 (2–3)** An unbalanced and partial understanding of two ways personal affluence can affect health using a limited number of factors related to affluence. **Level 1 (0–1)** Little understanding of two ways personal affluence can affect health with few factors related to affluence.	**5**

Question	Answer	Marks
5(d)	**'Climate change will have a major impact on patterns of disease and famine.' How far do you agree with this statement?** Indicative content: There are many possible effects of climate change on patterns of disease and famine. Global warming is the main element that is most discussed. Increased temperatures will affect agricultural systems sometimes negatively but not always depending on other climatic factors. If the high temperatures also coincide with low or lower amounts of rainfall, then agricultural productivity will be drastically reduced. Some climate change scenarios also predict that some areas will have greater rainfall amounts, this could result in pests and diseases associated with water becoming more prevalent. Increased flooding and greater storminess may also affect cultivation. Increased wildfires, a result of global warning, could also affect cropping. Patterns will depend on the geographical variation in the elements of climate that are changed. Thus, some areas may become drier whilst others may become wetter. Candidates show: **Level 3 (8–9)** A thorough understanding and realistic assessment of the impact of climate change on patterns of disease and famine. **Level 2 (5–7)** A partial understanding and limited assessment of the impact of climate change on patterns of disease and famine. **Level 1 (0–4)** Little understanding and very limited assessment of the impact of climate change on patterns of disease and famine.	**9**

Spatial inequality and poverty issues

Question	Answer	Marks
6(a)	**Fig. 6.1 shows the global distribution of the Gender Inequality Index (GII), 2019.** **Define *relative poverty*.** Relative poverty is when households receive 50% less (1) than average household incomes (1). OR The minimum amount of income (1) in order to maintain the average standard of living in the society in which they live (1).	**2**
6(b)	**Using Fig. 6.1, describe the distribution of the Gender Inequality Index (GII).** The main points that could be described are: • There is clearly a north-south divide apart from Australasia • Higher gender inequalities in Africa • Great variation in Africa • South and Central America very homogeneous Values must be used to describe the distributions. Four relevant points for four marks.	**4**

Question	Answer	Marks
6(c)	**Briefly explain the concept of cumulative causation with reference to spatial inequality and poverty.** Indicative content: Cumulative causation refers to a multiplier effect whereby one factor or event sets off a chain of events in other factors. Cumulative causation is a continuous process in which economic forces interact upon one another in a cumulative way, thus making for changes in one direction to induce supporting changes which push the system further away from its initial position. This introduces the idea of virtuous/vicious circles which could, if negative, increase inequality and poverty. There could also be a positive response. A number of examples could be chosen to illustrate the concept. With respect to poverty, it could be a drought which affects levels of employment in agriculture, famine, ill health and general decline in socio-economic status. A large industry closing in an area will impact negatively on a local economy and people's economic well-being, but growth of a type of industry will have the opposite effect by improving economic circumstances in one place reducing inequality in that place but possibly exacerbating inequality between places. There are many other examples that could be discussed. Candidates show: **Level 3 (4–5)** A thorough and well-balanced understanding of the concept of cumulative causation with reference to poverty and inequality. **Level 2 (2–3)** A partial understanding of the concept of cumulative causation with reference to poverty and inequality. **Level 1 (0–1)** Little understanding of the concept of cumulative causation with reference to poverty and inequality.	**5**

Question	Answer	Marks
6(d)	**'Short-term environmental events have little effect on regional scale patterns of poverty and inequality.' How far do you agree with this statement?** Indicative content: The basic argument is that, in general, short-term environmental events, such as a flood or blizzard, can be easily overcome. However, much will depend on the nature of the environmental effects and the area affected. Short-term effects are likely to have a greater impact at the local rather than regional scale. Candidates show: **Level 3 (8–9)** A thorough understanding and realistic assessment of the effect of short-term environmental events on regional scale patterns of poverty and inequality. **Level 2 (5–7)** A partial understanding and limited assessment of the effect of short-term environmental events on regional scale patterns of poverty and inequality. **Level 1 (0–4)** Little understanding and very limited assessment of the effect of short-term environmental events on regional scale patterns of poverty and inequality.	**9**

Section C

Answer **one** question from this section.

Question	Answer	Marks
7	**'Globalisation is increasing the number and severity of problems associated with the geographical issues that areas face.' With reference to one or more issues (crime, health or spatial inequality and poverty), how far do you agree with this statement?** Indicative content: The key is the description and analysis of the geographical issues that are chosen to discuss in combination with the effects of globalisation. The issues can be taken from any of the three geographical issues in the syllabus (crime, health, spatial inequality and poverty). At lower levels, candidates will experience problems in relating the issues to globalisation and the range of issues discussed will be small. At higher levels, candidates will have a firm knowledge and understanding of a range of issues and be able to relate these to the effect of globalisation.	**25**

Question	Answer	Marks
8	**With respect to an area you have studied, discuss the extent to which the severity of the impacts of the geographical hazards it faces is more the result of human activities than natural causes. Your answer should refer to one or more of the following hazards: tectonic, meteorological or hydrological.** Indicative content: The area chosen will determine the level of detail that could be discussed. Areas with a wide range of physical hazards will provide greater scope for analysis. The physical hazards relate to the three groups of hazards in the syllabus: tectonic, meteorological, hydrological. These hazards will then need to be assessed with respect to the human activities and natural causes. At lower levels, candidates will experience problems in relating the hazards to human activities and natural causes. At higher levels, candidates will have a firm understanding of the hazards and relationship to human activities and natural causes.	**25**

Question	Answer	Marks
9	**'The geographical issues areas face are related to the economic development of the areas concerned.' With reference to one or more issues (crime, health or spatial inequality and poverty), how far do you agree with this statement?** Indicative content: The key is the understanding of the nature of geographical issues chosen. Issues can be discussed in a generic sense that might be applicable to most areas or specific areas might be chosen for the analysis. At lower levels, candidates will experience problems in relating the issues to economic development with little realistic assessment. At higher levels, candidates will have a firm understanding of issues and their relationships with economic development.	**25**