GCSE MARKING SCHEME

SUMMER 2016

**GEOGRAPHY - SPECIFICATION A
UNIT 1 (HIGHER TIER)
4231/02**

INTRODUCTION

This marking scheme was used by WJEC for the 2016 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

UNIT 4231/02 – Unit 1 Higher Tier

Theme 1 - Water Question 1			Rationale	Expected answer	AO1	AO2	AO3	Total
(a)		Study the OS map extract below:						
	(i)	Give the 6 figure grid reference of the confluence of the river Axe and the Lox Yeo river.	Credit one mark for a correct response Allow tolerance of easting 381-383 northing 550-551	382551 (1)			1	**1**
	(ii)	Give the length of the Cheddar Yeo from points A to B.	Credit in this range only. Units (km) must be included for the mark.	1.9 – 2 km (1)			1	**1**
	(iii)	Describe the relief in grid square 4055 and grid square 4054.	Credit one mark for each correct grid square description 1+1	Grid square 4055 – escarpment/steep/hill (1) Grid square 4054 – floodplain/flat/valley floor (1)			2	**2**
(b)		Describe how different river processes lead to the formation of **one** river landform that you have studied. You must use an annotated diagram to help your answer.	Use the levelled mark scheme. Award 0 marks if the answer is incorrect or irrelevant. The focus of the question is examining processes rather than a description of the landform. As the question refers to processes, then at least **two** need to be described to gain level 3.	**Level 1**: Simplistic diagram showing correct shape of landform with some basic labelling. Limited reference to processes. (1 mark) **Level 2**: Clear diagram with accurate labelling. Identification of at least one river process. (2-3 marks) Max level 2 if no diagram **Level 3**: Clear diagram with accurate annotation. Clear description of river processes. (4-5 marks)	3		2	**5**
(c)		Study the photograph below. Compare different options for floodplain management in the **future**. Use examples to help your answer.		See level descriptors below	3	3		**6**
			TOTALS		6	3	6	**15**

Question 1 (c)

Levels of response mark scheme. Work upwards from the lowest level. Award QWC as an integral part of a best fit decision.
Award 0 marks if the answer is incorrect or irrelevant.

Level	Level descriptor
Level 1 **1-2 marks**	Demonstrates some knowledge and understanding of floodplain management strategies. *Information is communicated by brief statements. There is a basic structure. There is reasonable accuracy of spelling, punctuation and grammar.*
Level 2 **3-4 marks**	Demonstrates knowledge and understanding of more than one management strategy and begins to compare OR consider the future. Max level 2 if response does not compare 2 strategies. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*
Level 3 **5-6 marks**	Demonstrates detailed knowledge and thorough understanding. Effective comparison of management strategies with appropriate example(s). *Communication is clear, logical and has structure. Specialist terms are used with proficiency. Spelling, punctuation and grammar have consistent accuracy.*

Expected answer:

Candidates are expected to show an understanding of at least two future options for floodplain management. They may frame these in terms of hard and soft engineering or they may simply refer to the options themselves – afforestation, build fewer houses, flood walls, etc. Either approach is acceptable. It is not a requirement of the question to give one hard engineering and one soft engineering approach and therefore candidates should not be penalised if the two options they have given are similar. The more able candidates may exemplify their comparison with case study examples from the past e.g. Boscastle, Somerset Levels, etc.

Theme 2 – Climate Change Question 2			Rationale	Expected answer	AO1	AO2	AO3	Total
(a)		Study the resources below.						
	(i)	Give the **average** monthly Arctic sea ice extent in 1979.	Accept only this answer	16.4 or 16.5 (1)			1	**1**
	(ii)	Describe the change in the extent of Arctic sea ice between 1979 and 2014.	Credit one mark per relevant statement. **Reserve one mark** to cover the period from 1979 to 2014. Credit use of graph and/or map. Accept development of points by relevant quantification. E.g. of quantification "by 1.75 million square km 1978-2014"	Decreased (1), fluctuates (1), more pronounced over Arctic Ocean to north of Russia (1), anomaly e.g. no advance in 2003-2005 (1)			3	**3**
(b)		Study the graph below.						
	(i)	Compare the predicted change in carbon dioxide emissions in China with that in Europe.	Credit one mark for each accurate statement. Credit comparative statements only. Allow one mark for accurate quantification.	Rise in emissions in China faster than in Europe (1), Emissions greater in China than in Europe (1)			2	**2**

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	(ii)	Describe **one** way in which climate change is likely to affect people's lives in the future.	Credit one mark for a relevant statement and one mark for each elaboration to a maximum of three marks. Elaboration needs to impact on people's lives.	Sea levels rise (1), scientists predict by one metre (1), flood low lying countries such as the Netherlands (1), increased spending on flood defences (1) Increase in extreme weather (1) so more storm damage to trees/power line (1) which disrupt transport/cause power cuts (1) Increase in rainfall in UK/temperature climates (1) so more river floods (1) causing damage to home/business (1) Decrease in rainfall in semi-arid climates (1) leading to longer periods of drought/food shortages (1) increased poverty/conflict (1) Increased temperatures in temperate climates (1) allow spread of mosquitoes carrying disease (1) increased risk of malaria or zika virus (1) Increased temperatures in temperate climates (1) so longer growing season (1) enable growth of grapes in UK (1).	3			**3**
(c)		Describe how technology can be used to reduce climate change in the future. Use one or more examples to help you answer.		**See level descriptors below**	3	3		**6**
				TOTALS	**6**	**3**	**6**	**15**

Question 2 (c)
Levels of response mark scheme. Work upwards from the lowest level. Award QWC as an integral part of a best-fit decision.
Award 0 marks if the answer is incorrect or irrelevant.

Level	Level descriptor
Level 1 **1-2 marks**	Demonstrates some knowledge of how technology can be used to reduce climate change in the future. *Information is communicated by brief statements. There is a basic structure. There is reasonable accuracy of spelling, punctuation and grammar.*
Level 2 **3-4 marks**	Demonstrates knowledge of how technology can be used to reduce climate change in the future with some use of examples to support answer. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*
Level 3 **5-6 marks**	Demonstrates detailed knowledge of how technology can be used to reduce climate change in the future with appropriate example(s). Examples/s located in named place. *Communication is clear, logical and has structure. Specialist terms are used with proficiency. Spelling, punctuation and grammar have consistent accuracy.*

Expected answer:
The candidate needs to demonstrate an understanding that the key to reducing man made climate change is to reduce the emission of greenhouse gases such as CO_2. Governments and individuals can contribute to reducing the use of fossil fuels. Governments can invest in renewable energy sources. The city of Seville is using a solar furnace to generate enough energy for 6000 homes. Britain has considerable potential for wind energy. The government can give incentives to people to switch to biofuels and set new standards for buildings encouraging settlements such as Bedzed, governments can set standards for automobile manufacturers. Individuals can change their lifestyles and use energy efficient appliances, recycle in the home. Switching to LED – Light Emitting Diode – lighting is a quick and simple action.

Theme 3 – Living in an Active Zone Question 3			Rationale	Expected answer	AO1	AO2	AO3	Total
(a)		Study the information below.						
	(i)	Describe the location of Mount Kelud.	Credit one mark per relevant statement. Accept accurate use of scale, compass direction, latitude and longitude.	Java (1), proximity to Surabaya (1), proximity to Java coastline (1), major airport to east/west (1) 300/350 km west of airport (1) 112/ 113°E 8/ 9°S (1)			3	**3**
	(ii)	Use the photograph to describe **one** way in which the eruption of Mount Kelud may have caused problems for people living in Surabaya.	Credit one mark to one relevant statement. Credit one additional mark for relevant elaboration.	Area covered in ash/debris (1), so transport difficult (1), businesses close (1). Ash in atmosphere (1) so breathing difficult (1) flights disrupted (1).		2		**2**
(b)	**(i)**	Give **two** ways volcanologists can monitor active volcanoes.	Credit one mark per relevant statement.	Remote sensing (1) seismometers (1) satellite images (1) thermal images (1) tiltmeters (1) gas emissions (1) infrasound/ ultrasound (1) visual signs (1)	2			**2**
	(ii)	For **one** of these ways, explain why this indicates that an eruption is likely.	Credit one mark for a valid statement and one mark for its explanation. Do not credit naming of 'way' again.	Seismometer measures earthquake activity (1) increased activity indicates an eruption likely (1) Tiltmeters measure ground deformation (1) as rising magma pushes rock above it (1). Gases such as sulphur dioxide (1) are released by rising magma (1). Thermal imaging measures heat given off by volcano (1) increased heat indicates magma is close to surface (1). Infrasound measures the amount of magma (1) change in quantity indicates eruption likely (1).	2			**2**
(c)		Explain why many people continue to live in the hazard zones associated with volcanoes. Use one or more examples to help your answer.		**See level descriptors below**	3	3		**6**
				TOTALS	**7**	**5**	**3**	**15**

Question 3 (c)
Levels of response mark scheme. Work upwards from the lowest level. Award QWC as an integral part of a best fit decision.
Award 0 marks if the answer is incorrect or irrelevant.

Level	Level descriptor
Level 1 **1-2 marks**	Demonstrates some understanding of why many people continue to live in the hazard zones associates with volcanoes. *Information is communicated by brief statements. There is a basic structure. There is reasonable accuracy of spelling, punctuation and grammar.*
Level 2 **3-4 marks**	Demonstrates understanding of why many people continue to live in hazard zones associates with volcanoes with some use of examples to support answer. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*
Level 3 **5-6 marks**	Demonstrates thorough understanding why many people continue to live in the hazard zones associated with volcanoes with appropriate example(s). *Communication is clear, logical and has structure. Specialist terms are used with proficiency. Spelling, punctuation and grammar have consistent accuracy.*

Expected answer:
Dramatic scenery of volcanoes attracts tourists e.g. Mt Etna in Italy. The lava and ash deposited after an eruption weathers and provides fertile soil good for agriculture. The heat provided the opportunity for geothermal energy as in Iceland. Volcanic rock provides good building stone. Many people were born in the area and either do not want to move or cannot afford to move. Eruptions may be a relatively rare event and may not happen in a family's lifetime.

Theme 4 – Population Question 4			Rationale	Expected answer	AO1	AO2	AO3	Total
(a)		Study the graph below.						
	(i)	How many births were there in 1964?	Accept answers in the range 990-1010	1000 (1)			1	**1**
	(ii)	Describe the trend in number of births since 1964.	Credit up to two simple statements each with one mark. **Reserve one mark** to cover the whole period 1964-2012. Accept quantification as a development.	Decrease (1), fluctuated (1)			2	**2**
(b)		Describe how **one** factor, other than access to contraception, influences the birth rate.	Credit one mark for factor which needs to be developed to gain further marks. Accept converse to the expected answers if response focuses on reasons for high birth rates.	Girls lack education (1), do not have careers (1), marry early/extending childbearing years (1). Improved status of women (1) so they have better jobs/higher incomes (1) and choose to have fewer children/later in life (1). Government policy to reduce birth rate (1) by restricting number of children per woman (1) e.g. China's one child policy (1). Improve maternal/child health care (1) so more children survive childhood (1) so mothers choose to have fewer children (1). Cultural status of large families (1) children help work load (1) compensate for high mortality rate (1).	3			**3**

(c)		Study the map below.							
	(i)	Give the percentage of the population of Germany that is over 65.	Accept only this answer	>20 (1)				1	**1**
	(ii)	Describe the distribution of countries that have between 12 and 13.9% of the population over 65 years.	Credit two valid statements each with one mark.	Mostly in east (1) two in west (1) one island in ocean (1) periphery of Europe (1)				2	**2**
(c)		Describe how changing birth rates and death rates are likely to affect the population structure of any Western European country. Use one or more examples to help your answer.		**See level descriptors below**	3	3			**6**
				TOTALS	6	3	6		**15**

Question 4 (c)

Levels of response mark scheme. Work upwards from the lowest level. Award QWC as an integral part of a best fit decision.

Award 0 marks if the answer is incorrect or irrelevant.

Level	Level descriptor
Level 1 **1-2 marks**	Demonstrates some knowledge of factors affecting population structures. *Information is communicated by brief statements. There is a basic structure. There is reasonable accuracy of spelling, punctuation and grammar.*
Level 2 **3-4 marks**	Demonstrates knowledge of how birth and death rates affect population structure with some use of examples to support the answer. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*
Level 3 **5-6 marks**	Demonstrates detailed knowledge of how birth and death rates affect population structures with appropriate example(s). *Communication is clear, logical and has structure. Specialist terms are used with proficiency. Spelling, punctuation and grammar have consistent accuracy.*

Expected answer:

Answers should demonstrate a relationship between birth rates, death rates and population structure. Western European countries are experiencing an ageing population. In Germany and Italy over 20% of the population is over 65. This is the result of falling birth rates and death rates. In the UK the birth rate is 12 per 1000, death rate is 10 per 1000, in Germany the figures are 8 and 10 respectively. A falling birth rate results in the narrowing of the base of a population pyramid and lower numbers of young dependents. A falling death rate reflects increased life expectancy, a wider top of the pyramid and hence a greater number of old dependents. There is considerable variation over Europe – note the structure in Ireland a result of a higher birth rate and migration.

Theme 5 - Globalisation Question 5		Rationale	Expected answer	AO1	AO2	AO3	Total
(a)	Give **two** changes in technology that have allowed activities such as the Olympic Games to become a major global event.	Credit one mark for each relevant statement.	Improvements in telecommunications e.g. e-mail, mobile phones, video conferencing / social media (1), internet/computers (1), improved transport (1), satellite links (1), television (1)	2			**2**
(b)	Study the graph below.						
	Describe the change in the number of male and female athletes who competed in the Olympic Games between 1908 and 2012.	Credit one mark for each accurate statement to a maximum of three. Allow one mark for accurate quantification.	Increase (1), particularly in female athletes (1), any exception e.g. 1932, 1956, 1980 (1)			3	**3**
(c)	Study the information below.						
	Describe the patterns shown by the map showing London 2012 athletes.	Credit one mark for each accurate statement to a maximum of four. Max 2 marks for simple list of number of athletes from different continents. Credit one mark for an accurate attempt at quantification e.g. Europe provides more athletes than Africa and Asia together.	Europe provides most athletes (1), Africa provides least athletes (1), Richer countries provide more athletes (1), Countries such as India provide few athletes compared to size of population (1)		1	3	**4**
(d)	Explain why globalisation has hindered economic progress in many of the least economically developed countries of the world. Use one or more examples to help your answer.		**See level descriptors below**	3	3		**6**
			TOTALS	**5**	**4**	**6**	**15**

Question 5 (d)

Levels of response mark scheme. Work upwards from the lowest level. Award QWC as an integral part of a best fit decision.
Award 0 marks if the answer is incorrect or irrelevant.

Level	Level descriptor
Level 1 **1-2 marks**	Demonstrates some understanding of why globalisation has hindered economic progress in many of the least developed countries of the world. *Information is communicated by brief statements. There is a basic structure. There is reasonable accuracy of spelling, punctuation and grammar.*
Level 2 **3-4 marks**	Demonstrates understanding of why globalisation has hindered economic progress in many of the least developed countries of the world with some use of examples to support the answer. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*
Level 3 **5-6 marks**	Demonstrates thorough understanding of why globalisation has hindered economic progress in many of the least developed countries of the world with appropriate examples. *Communication is clear, logical and has structure. Specialist terms are used with proficiency. Spelling, punctuation and grammar have consistent accuracy.*

Expected answer:

Many least developed countries have seen very slow economic growth in comparison to NICs such as Brazil which have annual growth figures of 6-10%. TNCs have not invested in these countries, such as Kenya and Ghana, to the same extend and they continue to rely on the export of a limited number of primary products. These products, such as cocoa and coffee, are subject to fluctuating world prices. Lack of investment in infrastructure and telecommunications mean these countries cannot compete in the world markets. Unstable governments further hinder progress. These countries are largely excluded from events such as the Olympic Games since their athletes do not have the facilities to compete with athletes from richer countries and hence poorer countries also do not get the economic benefits from events such as the Olympic Games.

Theme 6 - Development Question 6			Rationale	Expected answer	AO1	AO2	AO3	Total
(a)		Study the graph below:						
	(i)	How much money does the UK government spend on International development?	Accept only this answer.	6 (1)			1	**1**
	(ii)	Complete the graph to show expenditure on defence of £33 billion.	Accept bar correct length between 32 and 34 – must not touch either of these lines. Width not important.	Accurate bar (1)			1	**1**
	(iii)	Describe **one** way in which receiving UK government aid could help improve the lives of people living in the least economically developed countries.	Credit one mark for way one relevant statement and up to two additional marks for its relevant elaboration.	DFID improved health (1), medical teams to Sierra Leone (1), tackle Ebola (1) Education projects (1) improve literacy for children/young girls (1) so they are more likely to get better paid employment (1) OR they will have better access to information such as health advice (1) Improved access to clean water/sewerage (1) so people are not vulnerable to disease carried by water (1) and less infants die (1). Short term aid following natural disaster (1) such as tents/ medical equipment (1) lead to increase numbers who survive harsh weather (1)	3			**3**

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(b)		Study the map below:						
	(i)	Suggest why the UN set the Millennium Development Goals.	Accept one simple statement	Give targets (1), improve human development (1)		1		1
	(ii)	Describe the distribution of countries that made no progress towards meeting the Millennium Development Goal.	Credit one mark for each accurate statement. Credit global distribution and/ or distribution within Africa.	**Global distribution** is uneven/ clustered (1) mainly within one continent (1) mainly Africa (1) two in South Asia/ SE Asia (1), two in central/south America (1) mostly within the tropics (1). **Distribution in Africa** is uneven (1) clustered/ several in sub-Saharan Africa (1)			3	3
(c)		Describe the progress made by sub-Saharan countries towards meeting one or more of the goals you have studied. Use one or more examples to help your answer.		**See level descriptors below**	3	3		6
				TOTALS	6	4	5	15

Question 6 (c)

Levels of response mark scheme. Work upwards from the lowest level. Award QWC as an integral part of a best-fit decision.

Award 0 marks if the answer is incorrect or irrelevant.

Level	Level descriptor
Level 1 **1-2 marks**	Demonstrates some knowledge of progress made by sub-Saharan countries towards meeting one or more of the Millennium Development Goals. *Information is communicated by brief statements. There is a basic structure. There is reasonable accuracy of spelling, punctuation and grammar.*
Level 2 **3-4 marks**	Demonstrates knowledge of progress made by sub-Saharan countries towards meeting one or more of the Millennium Development Goals with some use of examples to support the answer. *Communication is clear and logical. Spelling, punctuation and grammar have considerable accuracy.*
Level 3 **5-6 marks**	Demonstrates detailed knowledge of progress made by sub-Saharan countries towards meeting one or more of the Millennium Development Goals with appropriate example(s). *Communication is clear, logical and has structure. Specialist terms are used with proficiency. Spelling, punctuation and grammar have consistent accuracy.*

Expected answer:

Assessing progress is challenging, because of the number of targets and countries involved, as a regional sub-Saharan Africa remains furthest from meeting the MDGs. More than half of sub-Saharan Africa's population (388 million people) is still living in extreme poverty and 239 million people are suffering from hunger. Individual African countries though are making progress, In Uganda, for example, HIV infection rates have declined because government have introduced training for health care workers and education for the public. Charities, such as NetsforLife delivering over 18 million nets in countries such as Ghana and Nigeria, have made significant progress in combatting malaria reducing the incidence by 30% and mortality rate by 50% since 2000.