CONFIDENTIAL

WJEC CBAC

GENERAL CERTIFICATE OF EDUCATION
TYSTYSGRIF ADDYSG GYFFREDINOL

GEOGRAPHY - G1

MARK SCHEME

JANUARY 2009

G1

January 2009

Q.1 **(a)** **Use Figure 1 to describe the rates of retreat of the three glaciers.** **[5]**

Aletsch has constant and rapid rate of decline, Pizol and Trient fluctuated with more fluctuation in Pizol but greater magnitude of fluctuation in Trient. Rate of retreat less in Trient than Aletsch. Lowest rate in Pizol. Some candidates may link size of glacier to rate and amount of retreat. Allow one mark per descriptive point with extra mark when information from resource is used to elaborate. If description involves data errors e.g. for Aletsch, do not credit.

(b) **Explain how one environmental and one human factor may lead to climate change.** **[10]**

Content of answers will vary but responses may address the following factors as explanations:

Land use changes – deforestation and increased intensity of land use.
Human activity and greenhouse gas.
Ocean circulation.
Volcanic eruptions.
Solar variations.
Orbital variation.

Responses need to explain the workings of the factor identified and link effectively to climate change – which may address either cooling or warming or a combination of both. For Level 3 candidates must address both factors but do not expect complete equality in the explanation.
Credit answers that make full use of diagrams. Comparison not required.

Level 3 8-10 marks	Explanation of factors is detailed and developed. Understanding of link to climate change has authority and elaboration. Both factors are addressed.
Level 2 4-7 marks	Explanation of factors has some depth. Understanding of how factor causes climate change is not developed in detail Lacks balance between factors.
Level 1 0-3marks	Superficial explanation with little understanding of how factor causes climate change.

(c) **Outline the impacts of climate change on one society you have studied.** **[10]**

The question has two elements - knowledge of the impacts and a discussion of the impacts. The discussion will most likely take the form of an examination of the importance of different elements of impact. Be prepared to take different valid approaches such as a detailed explanation of the impacts. The material presented as impacts will vary according to the society chosen but there will be some common elements such as economy, work, migration, disease, traditions etc. The text box below gives some indication of the impacts on Pacific societies:

Climate Change already threatens all key development sectors in the Pacific.

- There will be less land for our use due to sea level rise, caused by climate change.
- There will be less freshwater available for our use. Climate change increases the incidence of extreme events such as floods, droughts and cyclone which threaten freshwater supply.
- Agriculture will be affected. Coastal plains, where most of our agriculture is based, can be salinised due to sea-level rise and become less productive. Increased natural disasters will damage crops and warmer, wetter climate will favour the breeding of pests.
- Reefs and marine resources will be affected. Increased ocean temperatures degrade coral reefs through coral bleaching. Some migratory species, such as tuna, will move to other areas.
- Disease prevalence will increase as warmer, wetter conditions favour the breeding of disease carrying insects such as mosquitoes (spreading dengue and malaria) and aquatic pathogens such as giardia.
- Tourism will be affected by the increase in natural disasters, biodiversity loss and increased prevalence of disease.
- A less productive resource-base, increases in the severity of natural disasters and poor human health will affect our economies.

http://www.wwfpacific.org.fj/what_we_do/climate_change/impacts_on_pacific.cfm

Level 3 8-10 marks	Knowledge and discussion is detailed and developed. Understanding of how societal impacts are linked to climate change has authority and elaboration. Has balance between impacts.
Level 2 4-7 marks	Shows some depth of knowledge and attempts to discuss in the form of relative impacts or develops some detail in explanation. Lacks balance between impacts.
Level 1 0-3marks	Superficial explanation with little understanding of how climate change leads to social impacts.

Q.1	AO1	AO2	AO3	
(a)	1	1	3	5
(b)	7	3	0	10
(c)	7	3	0	10
Total	15	7	3	25

Q.2 **(a)** **Use Figure 2 to outline how tectonic environments can be seen positively by different groups of people.** **[5]**

Question looks for different groups so these must be identified – tourists, tour companies, 'locals', Cossacks, scientists and geologists.

There are a number of points that are identified in the resource:

- The attractions of tectonic landscapes – volcanoes, geysers, thermal rivers, fumaroles.
- The rugged nature of the area –'extreme' tourism – lack of access, camping, transport systems, pioneer rating.
- Economic – money for tour companies, money for the area.

Allow 1 mark for an identified point and 1 for development using information from the resource or own knowledge.
3 max per group

(b) **Explain the processes that cause two hazards associated with tectonic activity.** **[10]**

The question has a focus on the cause of the hazard rather than the impact of the hazard. There will be a wide variety of hazards identified and explained which could be the result of earthquakes or volcanic activity, or a combination of both. Hazards may be primary or secondary. Expect to see:

Earthquakes	Volcanoes
Ground shaking	Lava flows
Liquefaction	Pyroclastic flows
Tsunami	Gas
Landslides	Lahars
	Tsunami
	Blast

Responses should be able to develop the formation of the hazard eg eruption melting ice on top of mountain, mixing with ash, forming 'mudflow', moving down river channels, engulfing settlements.

Level 3 8-10 marks	Two hazards addressed in detail. Detailed understanding of process and integrated link to hazard produced. Good examples.
Level 2 4-7 marks	Two hazards addressed but there may be an imbalance. Understanding of process has some depth and is well linked to the hazard produced. Examples are evident and enhance the explanation.
Level 1 0-3marks	Only one hazard addressed. Superficial understanding of processes that produce selected hazards. Little use of examples.

3

(c) **Outline the demographic and economic impacts of tectonic activity. [10]**

Responses are required to look at both demographic and economic impacts. This could be done using one event, a comparison between events or looking at the importance of different demographic/economic impacts. It is expected that answers will refer to examples to support discussion. Demographic could include mortality, migration, displacement, disease etc. Economic has a wide interpretation which may relate to costs to industry, individuals government, insurance, transport, aid agencies etc.

Level 3 8-10 marks	Impacts are well understood and have been developed in detail. Good examples integrated into answer.
Level 2 4-7 marks	Impacts have some descriptive depth. Examples are used and have been developed and integrated Lacks balance between impacts.
Level 1 0-3marks	Superficial understanding of impacts. Little use of examples.

Q.2	AO1	AO2	AO3	
(a)	1	1	3	5
(b)	7	3	0	10
(c)	7	3	0	10
Total	15	7	3	25

Q.3 **(a)** **Describe the variations in rainfall shown in Figure 3.** **[7]**

There are a number of points that could be made in description

- Above average in the north – northern parts of W. Australia, N. Territory, Queensland.
- Up to 400% of mean in areas here.
- N, S Wales and Victoria mainly above average but not as much as North – mean to 150%. But some areas below average.
- Western Australia mainly below 60% of average.
- South Australia mainly below 60% of average.
- Southern Queensland below average – 0% – 40% .
- Credit comments on general pattern, peak values and anomalies

Level 3 6-7 marks	Shows clear and detailed identification and description of patterns. Extensive use of data and locations.
Level 2 3-5 marks	Shows some ability to identify and describe patterns. Uses some information from map in form of data and locations. Misreads the map as total rainfall.
Level 1 0-2marks	Limited ability to identify and describe patterns

(b) **Outline the usefulness and limitations of the data shown in Figure 3 and of the techniques used to display the data.** **[8]**

Advantages/disadvantages of collection and depiction of data:

The question refers not just to the technique of depiction but also to the collection of the data. Comments that could be made include:
- The map is easy to interpret.
- The map shows patterns effectively.
- The intervals are different and this does not help in comparison of information
- The values in between the isolines is not exact and is an extrapolation between data collection points.
- The interval for data collection is too small and gives only a short term view of the rainfall.
- Difficulties of collecting data over such a large area.
- Unusual use of colour gradation.
- From an official source.
- Who is it useful for?
- Only shows percentages but not totals.

Level 3 6-8 marks	Good understanding of strengths AND weakness. Clear ability to express ideas in a logical and directed manner
Level 2 3-5 marks	Some understanding that is displayed in either breadth or depth. Good understanding of strengths OR weakness
Level 1 0-2 marks	Limited breadth and depth of understanding of the strengths and weaknesses of the information

(c) **Evaluate the methods you used to collect data in an investigation into a changing physical environment.** **[10]**

Data collection can take a variety of forms:

Level 3 8-10 marks	Shows sound knowledge of the data collection with detailed attempt at evaluation. The answer will have an analytical approach.
Level 2 4-7 marks	Shows sound knowledge of the data and the rationale for its collection. The answer may have some generalised focus on evaluation.
Level 1 0-3marks	Limited description of data collection

Q.3	AO1	AO2	AO3	
(a)	1	1	5	7
(b)	2	1	5	8
(c)	3	2	5	10
Total	6	4	15	25