Information on the exam: Unit 3 – GEOG3 - Contemporary Geographical Issues

- 30% of A Level
- 2 hour 30 minutes written examination
- 3 questions:
  - 1 from Section A – Physical Geography Structured Questions
  - 1 from Section B – Human Geography Structured Questions
  - 1 from Section C – Essay Questions (You must not answer the option answered in either Section A or Section B)

### Plate tectonics and associated hazards

**Plate movement**
- Destructive, constructive and conservative plate margins. Processes: seismicity and vulcanicity.
- Associated landforms: young fold mountains, rift valleys, ocean ridges, deep sea trenches and island arcs.
- Hot spots associated with plumes of magma and their relationship to plate movement.

**Vulcanicity**
- Variations in the type and frequency of volcanic activity in relation to types of plate margin and types of lava.
- Minor forms of extrusive activity – geysers, hot springs and boiling mud.
- Major forms of extrusive activity – types of volcanoes.
- Two case studies of recent (ideally within the last 30 years) volcanic events should be undertaken from contrasting areas of the world. In each case, the following should be examined:
  - the nature of the volcanic hazard
  - the impact of the event
  - management of the hazard and responses to the event.

**Seismicity**
- The causes and main characteristics of earthquakes: focus and epicentre; seismic waves and earthquake measurement.
- Tsunamis – characteristics and causes.
- Two case studies of recent (ideally within the last 30 years) seismic events should be undertaken from contrasting areas of the world. In each case, the following should be examined:
  - the nature of the seismic hazard
  - the impact of the event
  - management of the hazard and responses to the event.

### Ecosystems: Change and Challenge

**Nature of ecosystems**
- Structure of ecosystems, energy flows, trophic levels, food chains and food webs.

**Ecosystems in the British Isles over time**
- Succession and climatic climax: illustrated by one of lithosere, psammosere, hydrosere or halosere.
- The characteristics of the climatic climax: temperate deciduous woodland biome.
- The effects of human activity on succession – illustrated by one plagioclimax such as a heather moorland.

**The biome of one tropical region (savanna, grassland or tropical monsoon forest or tropical equatorial rainforest)**
- The main characteristics of the biome.
- Ecological responses to the climate and soil moisture budget – adaptations by vegetation and animals.
- Human activity and its impact on the biome.
- Development issues in the biome to include aspects of biodiversity and the potential for sustainability.

**Ecosystem issues on a local scale: impact of human activity**
- Changes in ecosystems resulting from urbanisation. Urban niches. Colonisation of wasteland: the development of distinctive ecologies along routeways (eg roads and railways). The planned and unplanned introduction of new species and the impact of this on ecosystems.
- Changes in the rural/urban fringe.
- Ecological conservation areas. One case study should be undertaken.

**Ecosystem issues on a global scale**
- The relationships between human activity, biodiversity and sustainability
- The management of fragile environments (conservation versus exploitation): two contrasting case studies of recent (within the last 30 years) management schemes in fragile environments should be undertaken.
Everyone involved in the levels marking process (examiners, teachers, students) should understand the criteria for moving from one level to the next – the “triggers”. The following general criteria are designed to assist all involved in determining into which band the quality of response should be placed. It is anticipated that candidates’ performances under the various elements will be broadly inter-related. Further development of these principles will be discussed during Standardisation meetings. In broad terms the levels will operate as follows:

**Level 1: attempts the question to some extent (basic)**
An answer at this level is likely to:
- display a basic understanding of the topic
- make one or two points without support of appropriate exemplification or application of principle
- demonstrate a simplistic style of writing perhaps lacking close relation to the terms of the question and unlikely to communicate complexity of subject matter
- lack organisation, relevance and specialist vocabulary
- demonstrate deficiencies in legibility, spelling, grammar and punctuation which detract from the clarity of meaning.

**Level 2: answers the question (well/clearly)**
An answer at this level is likely to:
- display a clear understanding of the topic
- make one or two points with support of appropriate exemplification and/or application of principle
- give a number of characteristics, reasons, attitudes (“more than one”) where the question requires it
- provide detailed use of case studies
- give responses to more than one command e.g. “describe and explain…”
- demonstrate a style of writing which matches the requirements of the question and acknowledges the potential complexity of the subject matter
- demonstrate relevance and coherence with appropriate use of specialist vocabulary
- demonstrate legibility of text, and qualities of spelling, grammar and punctuation which do not detract from the clarity of meaning.

**Level 3: answers the question very well (detailed)**
An answer at this level is likely to:
- display a detailed understanding of the topic
- make several points with support of appropriate exemplification and/or application of principle
- give a wide range of characteristics, reasons, attitudes, etc.
- provide highly detailed accounts of a range of case studies
- respond well to more than one command
- demonstrate evaluation, assessment and synthesis throughout
- demonstrate a sophisticated style of writing incorporating measured and qualified explanation and comment as required by the question and reflecting awareness of the complexity of subject matter and incompleteness/ tentativeness of explanation
- demonstrate a clear sense of purpose so that the responses are seen to closely relate to the requirements of the question with confident use of specialist vocabulary
- demonstrate legibility of text, and qualities of spelling, grammar and punctuation which contribute to complete clarity of meaning.
1. Spend as long as it takes working out exactly what the question is asking.
   (i) Sometimes that is 5 seconds, sometimes 5 minutes or more!
   eg ‘Describe and account for the formation of landforms of ice erosion in an area of your choice’ (June 99 Q1) doesn’t take much working out – but ‘What factors determine whether a valley glacier advances or retreats?’ may take a little more thought!
   (ii) I suggest underlining key words in the question (see above), to help clarify your thoughts.

2. Write a plan – what is your ‘argument’ going to be? – what points are you going to cover? – be systematic and decide on a logical structure – first ‘pros’ and then ‘cons’, for example. A quick spider diagram for each paragraph takes the pressure off – you just have to flesh each ‘leg’ out.

3. Think about what geographical terms are relevant to the question and make sure you include each one in such a way that makes it clear you know what it means – again a quick spider or list would be useful.

4. Think about your conclusion before you start writing the introduction. At A2 level your conclusion should include a ‘twist’ or a clear explanation of the fallibility of your conclusion (‘grey areas’). For example in an essay concluding that poorer countries are more at risk from tropical storm damage one might add as a final ‘twist’ that it could be suggested that many residents in poorer countries are psychologically better equipped to deal with the aftermath of disasters because they generally are more resigned to the power of nature and ‘fate’ than MEDC residents, whose lives are generally safe and predictable. It is unimpressive and a waste of time to simply repeat what you have already written – the conclusion should be the most interesting paragraph, just like the end of a good film or book.

5. Think about what real examples you will use to illustrate your answer.

6. Think about what diagrams and/or maps you will draw.

Other tips:
- **slants**: …if see words like these in the Q: impacts, challenges, responses, consequences, outcomes, to what extent? evaluate etc.
  ...can give you lots to say: +ve and –ve, short term and long term, permanent and temporary, human and physical, for some and not for others, intended and unintended

- Make sure every sentence is RELEVANT – try to include a key word from the question in every paragraph
- Write in paragraphs – a new idea or concept in each paragraph
- Use geographical terminology

- **PLAN** – think about your conclusion first (something thoughtful or ‘surprising’ if possible – e.g. GREY AREAS / alternative interpretations) – then select relevant case study material – then think how to write your ‘introduction’ paragraph so that you ‘set the scene’ without giving away the ‘clever conclusion’
- **Specific locations** – e.g. Brazil / Snowdonia etc is not specific enough – Pentre Farm on the southern slopes of Cadair Idris (below Cwm Amarch cirque) in southern Snowdonia is better!!
- Maps / diagrams / specific details (dates, etc.) are good – but you must show clearly how they are relevant to the question asked (e.g. use relevant labels rather than just drawing a standard sketch map of the location)
1. Study Figure 1 which shows changes in sea level following a seismic event in the Pacific Ocean basin. Comment on the changes in sea levels shown, and suggest why these changes illustrate the hazards associated with a tsunami. (7 marks)

2. Outline the causes of earthquakes. (8 marks)

3. Discuss the ways in which people and organisations respond to earthquakes and their effects. (10 marks)

4. Comment on the information given in Figure 1. (7 marks)
5. Explain the causes of earthquakes. *(8 marks)*

6. With reference to examples, discuss the effectiveness of hazard management schemes in areas where earthquakes have taken place. *(10 marks)*

**Essay Qs (40 marks)**
1. Discuss the degree to which the theory of Plate Tectonics is supported by the distribution of volcanic and seismic activity across the globe.

2. ‘The extent to which tectonic processes represent hazards depends on when and where they are experienced.’ Discuss this statement.

3. Volcanic and seismic events are major factors towards proving that plate tectonics theory is valid. Discuss the extent to which you agree with the statement.

3. ‘The extent to which volcanic processes represent hazards depends on where and when they occur.’ Discuss this statement.

4. Discuss the reasons for, and the consequences of, recent tectonic activity in contrasting areas that you have studied.

5. ‘The theory of plate tectonics is intrinsically flawed.’ Critically assess this statement.

6. The successful management and response to tectonic hazards is successful due to the part of the world affected rather than the magnitude of the event. To what extent do you agree with this statement?

7. For recent examples that you have studied explain how the nature, impact and management of the event varied between contrasting parts of the world.

8. Critically evaluate this statement, ‘Tectonic hazards no longer kill humans it is our inability to manage and respond to them correctly’.

9. Using examples that you have studied, assess seismic events in contrasting areas of the world, in terms of impact, management and response.

10. ‘The world distribution of population is as important as the world distribution of areas of tectonic activity in predicting the hazards of volcanic activity’. Discuss this statement.

11. The hazards presented by earthquakes and volcanic activity have the greatest impact on the poorest members of the world’s population. To what extent do you agree with this view?

12. To what extent do you agree with the view that the hazards resulting from earthquakes and volcanic activity cannot be managed but merely adapted to.
1. Study Figure 3 which shows a food web. Comment on the food web shown in Figure 3, including the variety of trophic levels illustrated. (7 marks)

2. Explain the characteristic features of a vegetation succession you have studied. (8 marks)

3. Evaluate the concept of biodiversity, and suggest why it is an issue about which people should be concerned. (10 marks)

4. Study Figure 3, an area of urban wasteland. Describe the various processes by which colonisation of this wasteland can take place. (7 marks)

5. Explain how distinctive ecologies develop along routeways. (8 marks)

6. With reference to one example, discuss the effectiveness of ecological conservation areas. (10 marks)

7. Choose one biome of one tropical region that you have studied.
   (a) describe the main characteristics of that biome (8)
   (b) discuss the ecological response to the climate by both plants and animals (10)

8. Describe the main characteristics of the vegetation in one tropical biome that you have studied, and explain how these characteristics are adapted to the area's climate (8)
9. With reference to two contrasting case studies, evaluate attempts that have been made to manage and conserve fragile ecosystems (10)

10. Evaluate the concept of biodiversity, and suggest why it is an issue about which people should be concerned. (10)

Essay Q (40 marks)

1. With reference to case studies, critically evaluate the success of management schemes in fragile environments.

2. ‘There has been debate over the present-day characteristics of the biome of tropical regions. For some they are viewed as a natural response to the climate of the areas, whereas for other they are regarded as a product of human interference.’ Discuss this statement in the context of the tropical biome you have studied.

3. “Development, biodiversity and sustainability are incompatible goals” Discuss this statement in the context of the tropical biome you have studied.

4. The distribution of global biomes are determined by climatic factors. The geographical distribution of British biomes is determined by human intervention. To what extent do you agree with these statements?

5. Examine the factors affecting spatial and temporal variations in biomes.

6. Using examples that you have studied evaluate management schemes in British biomes.

7. Some ecological conservation areas are designed to stop seral progression towards a climatic climax vegetation. With reference to one (or more) examples explain how and why this is done and discuss whether this approach to the environment can be justified.

8. Can humans successfully manage ecosystems? Use examples from your own studies to answer this question.

9. Assess the importance of human activity as a factor affecting plant successions.

10. The study of biodiversity and sustainability can only be fully understood when combined with human activities. Discuss.

11. With reference to named biomes, evaluate the statement that the distribution of biomes can be solely explained by the influence of climatic factors.

12. “The actions of humans will be responsible for irreversible alteration of biomes and a reduction in biodiversity.” To what extent to you agree with this statement?