



General Certificate of Secondary Education

Geography – Full Course
Specification A

90301H Physical Geography
Higher Tier

Mark Scheme

Specimen Mark Scheme for Linear Specification (2014 onwards)

The specimen assessment materials are provided to give centres a reasonable idea of the general shape and character of the planned question papers and mark schemes in advance of the first operational examinations.

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GENERAL GUIDANCE FOR GCSE GEOGRAPHY ASSISTANT EXAMINERS

Quality of Written Communication

Where candidates are required to produce extended written material in English, they will be assessed on the quality of written communication.

Candidates will be required to:

present relevant information in a form and style that suits its purpose;
ensure that text is legible and that spelling, punctuation and grammar are accurate;
use specialist vocabulary where appropriate.

Levels Marking - General Criteria

Where answers are assessed using a level of response marking system the following general criteria should be used.

Level 1: Basic

Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2: Clear

Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Level 3: Detailed

Knowledge of accurate information appropriately contextualised and/or at correct scale
Detailed understanding, supported by relevant evidence and exemplars
Well organised, demonstrating detailed linkages and the inter-relationships between factors
Range of ideas in a logical form; uses a range of specialist terms where appropriate
Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.
Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Annotation of Scripts

One tick equals one mark, except where answers are levels marked (where no ticks should be used). Each tick should be positioned in the part of the answer which is thought to be credit worthy.

Where an answer is levels marked the examiner should provide evidence of the level achieved by means of annotating 'L1', 'L2' or 'L3' in the left hand margin.

The consequent mark within this level should appear in the right-hand margin.

Ticks must not be used where an answer is levels marked.

Examiners should add their own brief justification for the mark awarded e.g. *Just L3, detail and balance here.*

Where an answer fails to achieve Level 1, zero marks should be given.

General Advice

Marks for each sub-section should be added in the right-hand margin next to the maximum mark available which is shown in brackets. All marks should then be totaled in the 'egg' at the end of each question in the right-hand margin. The totals should then be transferred to the boxes on the front cover of the question paper. These should be totaled. The grand total should be added to the top right-hand corner of the front cover. No half marks should be used.

It is important to recognize that many of the answers shown within this mark scheme are only exemplars. Where possible, the range of accepted responses is indicated, but because many questions are open-ended in their nature, alternative answers may be equally creditworthy. The degree of acceptability is clarified through the Standardisation Meeting and subsequently by telephone with the Team Leader as necessary.

Diagrams are legitimate responses to many questions and should be credited as appropriate. However, contents which duplicate written material or vice versa should not be credited.

Quality of Written Communication (QWC) is part of the award of marks in levels marked answers only. In levels marked answers the quality of the geography is assessed and a level and mark awarded according to the geography. As is sometimes the case, the geography may be sound at a particular level but the examiner may not be sure as to whether there is quite enough to raise the mark within that level. In this case the examiner should consider the QWC of the answer. QWC that fulfils the criteria for the level should lead to the rise in the mark but where the QWC does not fulfil the criteria, the answer should remain at the mark first thought appropriate. In cases where QWC has been used in the award of marks, the examiner should indicate this with QWC and arrows that indicate either an upward or downward trend according to its impact on the final award of the mark.

SECTION A
Question 1 The Restless Earth

- 1 (a) (i)** Any 4 facts from Figure 1 **4 marks**
 e.g. earthquakes occur in linear clusters (1), many occur on plate boundaries (1) especially destructive and/or conservative plate boundaries(1); with example (1). Clustering around edge of Pacific plate (1).
 Maximum 1 for negative
 4x1

- 1 (a) (ii)** Diagram should show plates moving in similar directions (but not the same); should label to show sliding past each other; or same direction, but at different speeds; the pressure building up as the plates stick and the sudden release causing the jerking movement which is the earthquake. **4 marks**
 An example may be used – likely to be San Andreas Fault. Diagrams may be plan view, cross section or a combination of both.

Level 1 (Basic) (1-2 marks)

A partial diagram – piecemeal – offers some back up to text.

Sequence incomplete.

No diagram – text only.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) (3-4 marks)

Diagram is clear and supports labels – makes clearer.

Sequence complete.

Develops points.

Knowledge of accurate information

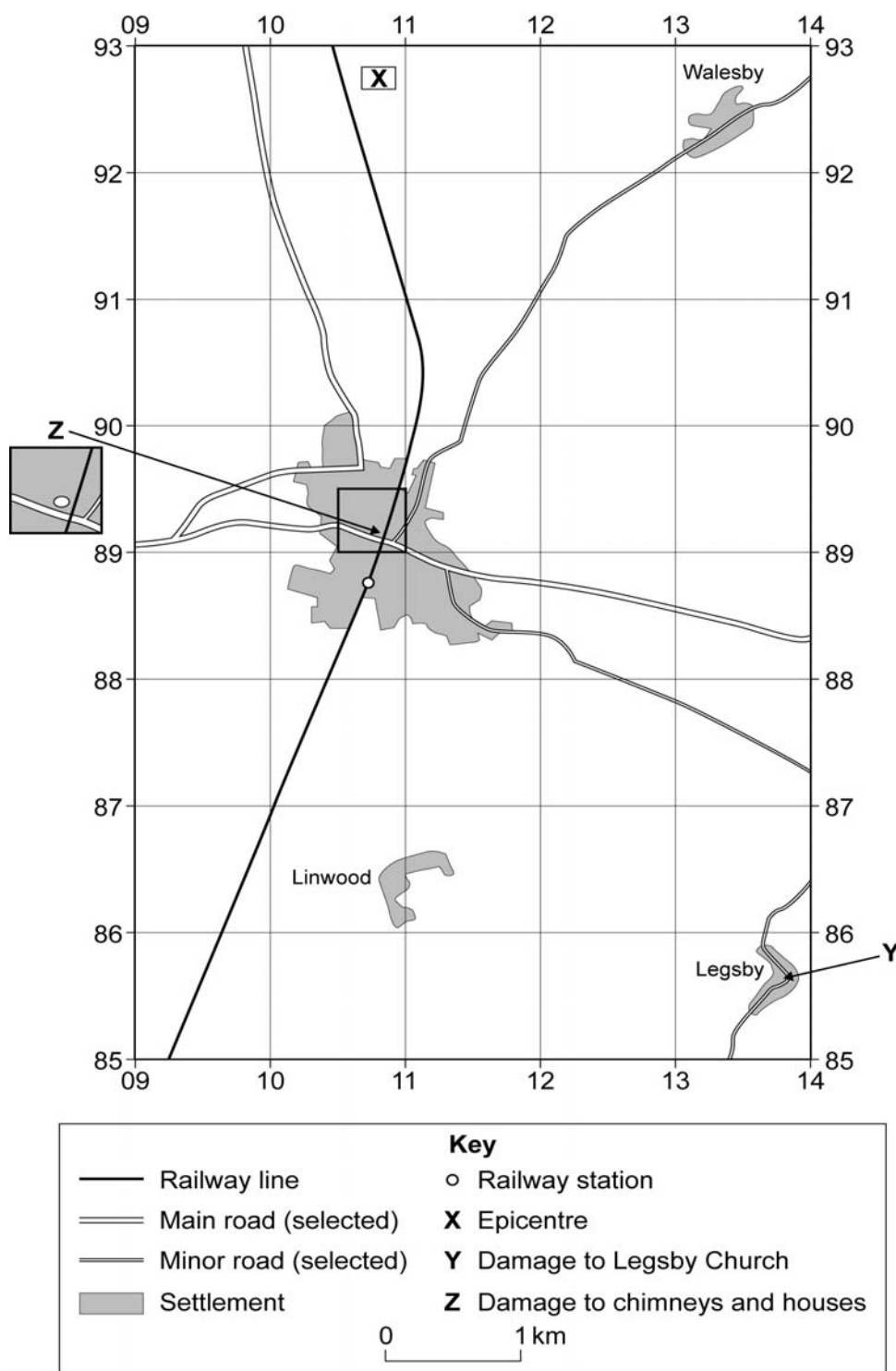
Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

1 (b) (i) Centre of X accurately located as shown in box – 2 marks. If X within area bounded by northing 92 & 93 and railway line, and easting 11 (or centred on them) – 1 mark. **2 marks**

1 (b) (ii) Y accurately located – 1 mark. Z accurately located (as shown in 'close-up' box by Z label below) – 2 marks. (NB should not touch railway or road. If Z label placed directly on map use position at centre of 'Z'). If Z located inaccurately but in south east corner of grid square – 1 mark. **3 marks**



- 1 (b) (iii)** Figure 2 shows that the epicentre occurred in a rural area/field so damage expected to be less than if it had been in a built up area. Also, it measured 5.2 on the Richter scale. This is strong for UK, but many earthquakes occur of this strength worldwide each year. The buildings are well built and can withstand earthquakes of this strength. There should be an understanding of the location from the map and the meaning of the score on the Richter scale and these points may be linked. **4 marks**

Level 1 (Basic) (1-2 marks)

Simple, listed points.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Descriptive – of location or Richter scale.

Measured 5.2. Happened in middle of nowhere – near a wood.

Level 2 (Clear) (3-4 marks)

Specific reference to map needed.

Reference to own knowledge.

Points are developed and linked.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Links the location and/or the Richter scale score to the limited amount of damage

Epicentre in a rural area/field so damage less than if it had been in a built up area. It only measured 5.2 on the Richter scale. This is not a strong earthquake generally, although it is for UK.

- 1 (c)** Actual content will depend on the case study being used – Boxing Day tsunami of 2004 is likely to be used. Expect reference to either whole area affected or a focus on just one country – either approach is permissible. **8 marks**
- Following exemplar refers to Boxing Day tsunami.
- Immediate – There will be reference to the need to rescue people – getting people to safety – out of the water, possibly references to moving inland or to higher ground.
- People searching for friends and relatives, getting people to hospital.
- A need to try to provide adequate medical help, to ensure there is clean water (and food). All of this required international aid and teams of sniffer dogs, heavy equipment, medical staff, provisions of water purifying tablets, blankets, setting up shelters, tents etc. There was a need to bury the dead – often in mass graves to stop the spread of disease. The launching of appeals to support international aid effort.
- Longer term – this will involve the need to rebuild houses – ideally using different materials and designs – to make them less easy to

destroy; to provide the means to be able to do this and to rebuild public buildings; to rebuild roads, railways; to ensure jobs are being created (arguably tourism prospered and aid provided real impetus in some places); to help people to come to terms with a traumatic event and loss of parents, children; to predict tsunami and installation of early warning system in Indian Ocean – with details on how it works and the action taken.

Level 1 (Basic) (1-4 marks)

Describes responses to a tsunami

Statements are general in a random order.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

No example or generic information.

People ran away from the sea. They tried to find family they had been separated from. Holidaymakers tried to get back home out of the countries affected. People tried to get injured to hospital.

Level 2 (Clear) (5-6 marks)

Likely to begin to categorise – such as immediate and long term responses – to give a clearer structure.

May be clear imbalance between immediate and long term (to immediate) classification may be implicit.

Statements are linked.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

There is clear reference to the case study named.

People were caught unaware – holidaymakers were on beaches in Thailand and fled as the wave approached. They tried to get to higher storeys in hotels, out of the way of the wave. After, there were many bodies that had to be buried quickly so that disease would not spread. Mass graves were dug. Later, schools had to be rebuilt as well as people's homes.

Level 3 (Detailed) (7-8 marks)

Will have a clear structure – likely to be determined by time scale - immediate and long term responses – in greater balance and explicit classification.

Statements are logically ordered and linked.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms

where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Detailed references to specific case study.

People were caught unaware – holidaymakers were on beaches in Phuket, Thailand and fled as the wave approached. They tried to get to higher storeys in hotels, out of the way of the wave. In Banda Aceh, the first area to be hit, hospitals couldn't cope and people were left untreated in corridors. After, there were many bodies that had to be buried quickly so that disease would not spread. Mass graves were dug, as the scale of the disaster was so large. Aid agencies brought in water purification tablets and tents for survivors. The Disasters Emergency Committee spent £40m on rebuilding projects in Sri Lanka and Indonesia, following a major appeal for aid. A new Indian Ocean tsunami warning system became operational in 2006, so that warning of future tsunamis can be given.

Total for Question 1: 25 marks

Question 2 Rocks, Resources and Scenery

2 (a) (i) Era represents a longer time than a Period (1) + 1 for giving figures as evidence, e.g. Cenozoic period about 65 million years (1) is more than Quaternary period – less than 10 million years (1). Era is divided into periods (1). Era is overall title – that is then split (1). **2 marks**

2 (a) (ii) 3×1 **3 marks**
Period - Permian
Rock Type – Limestone
Age (millions of years) - 145 – 65.

2 (b) (i) The limestone is light grey in colour – dominates landscape. There is some variation in colour – the area to the left being lighter. Joints/vertical cracks in the rock can be seen, as can bedding planes – these are especially obvious. The slope formed by the limestone is steep, almost vertical in places. In places, the rock overhangs and ledges are visible. The landscape is dominated by the cliff like formation that curves backwards in shape. **4 marks**

Level 1 (Basic) (1-2 marks)

Describes features of the rock/or the landscape

Points are quite general.

Simple, separate points.

There is a very steep cliff-like feature. It dips down in the middle.

It is less steep at the side.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) (3-4 marks)

Develops statements – refers to features of the rock and the landscape.

Photograph is specifically used.

Statements are linked and developed.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

The landscape is dominated by the steep, almost vertical cliff type feature. The rock overhangs in places and bedding planes can be clearly seen, especially near the top.

The height of cliff is lower in the middle where it forms a broad V – shape.

2 (b) (ii) Rainwater is a weak carbonic acid (1) as rain mixes with carbon dioxide as it falls through the atmosphere (1). Limestone is soluble in this weak acid (1) and so is dissolved by it (1) over a long period of time (1). Allow chemical formulae (1). Occurs especially at **4 marks**

joints/along bedding planes (1). Not acid rain.
3x1

- 2 (c)** X is a large hole in the ground (about 0.5 sq km) where the rock has been removed from – this is likely to be visible. Dust from the quarry itself is likely to be present, changing the colour of the immediate area. Blasting of the rock is likely to remove it – creating noise. This material must be transported to the works – there are small roads for this – lorries will be noisy. **4 marks**

Level 1 (Basic) (1-2 marks)

Simple statements in no specific order.

May be descriptive of any features.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

General points without evidence.

The quarry is a big hole in the ground. It will be noisy and there will be lots of dust.

Level 2 (Clear) (3-4 marks)

Develops statements and makes links.

The response is clearly linked to the question – environmental disadvantages are targeted.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

There is some specific reference to the map.

The quarry is about half a square km as it takes up half a square. It is a very large hole in the ground and the bare rock will be visible from the area around it. There are some minor roads near it that will take the rock away. This will mean having to go through Westbury to get to the cement works. These will make it noisy and possibly dirty for residents

- 2 (d)** Management during extractions likely to relate to how impact on environment and local people is reduced. Actual information will depend on case study selected. **8 marks**
- Likely to refer to points such as – planting of hedgerows/lines of trees to shield area from view to reduce visual intrusion; limiting blast times/heavy goods vehicle movement to reduce noise, cleaning roads to reduce dust; having a programme of landscaping, replacement of topsoil once an area is worked out and restoring area to specific use such as farming – or a new use – such as bike tracks, golf course. After extraction, restoration is more complete – large numbers of plants are often planted to recreate a habitat for wildlife; wetlands may be created – with conservation a focus or lakes for recreation, footpaths may be added or there may be a complete return to farming

as the area is improved and enhanced – so that it may be even better than before quarrying took place.

Response should demonstrate specific knowledge of case study and places, facts therefore should be noted.

Level 1 (Basic) (1-4 marks)

Simple statements, perhaps list like at lower end.

Separate ideas.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Generalised statements.

Trees planted on edges. Roads cleaned at night.

Used for other things like lakes.

Level 2 (Clear) (5-6 marks)

Develops statements and makes links e.g. between strategy and problem solved.

Reference to during and after extraction may be clearly imbalanced.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

There is clear reference to the case study.

At Hope in Derbyshire, a lot of trees have been planted to make the quarry and cement works less obvious. Much is transported by traffic on narrow roads in the countryside is reduced. Road cleaning is arranged to get rid of dust in immediate area. After an area is finished it is restored to farming or a different use, such as fishing lakes.

Level 3 (Detailed) (7-8 marks)

Detailed development of statements, response is organised and focussed.

Both aspects are addressed – during and after extraction in greater balance.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Case study is specifically referred to and points made relate to this – detailed factual information.

At Lafarge Cement in Hope in Derbyshire, over 75000 trees have been planted to make the quarry and cement works less obvious and make it blend in with the environment. Two and a half million tonnes of limestone that could not be used for making cement have been used to help conceal the entrance by altering the landscape. Much is transported by train, so traffic on narrow roads in the countryside is reduced. Road cleaning is arranged to get rid of dust in immediate area. After an area is finished it is restored to farming or a different use, such as fishing lakes and a 9- hole golf course has been opened.

Total for Question 2: 25 marks

Question 3 Challenge of Weather and Climate

3(a)(i) Maximum temperature is 21⁰C, whilst minimum is 6⁰C, giving a range of 15⁰C. Peak occurs in June and July. Falls faster than it rises. **3 marks**
 Precipitation fluctuates throughout the year. No clear change with seasons. Wettest is in summer (July and August). Driest during late winter / early spring – February to April.
 3 x 1; maximum 2 on either temperature or rainfall.

3(a)(ii) Need to recognise that Edinburgh is cooler than Aberystwyth whilst Aberystwyth is wetter than Edinburgh from the climate graphs. **4 marks**
 Reason Aberystwyth is wetter is likely to relate to the prevailing wind and nearness to the sea, it is on the coast, in the path of the prevailing winds as they hit the shore. Areas to the east receive less rainfall, due to rainshadow. Depressions come from the west, so more rainfall is released in the west.

Reason Edinburgh is cooler likely to refer to the fact that Edinburgh is further north/latitude. This means that the sun's rays are more concentrated in York as the sun is higher in the sky as insolation from the sun is higher and there is a smaller area for them to be spread over on the surface. Aberystwyth is on the west coast and is influenced by the sea and North Atlantic Drift, so is warmer than Edinburgh in winter on the eastern side of Scotland.

Level 1 (Basic) 1–2 marks

Simple statements, may describe contrasts only.

Explanation will be partial – such as an idea that it is to do with location.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Aberystwyth is wetter than Edinburgh. Edinburgh is cooler in winter than Aberystwyth. Aberystwyth is on the west coast Edinburgh is on the east. Edinburgh is further north than Aberystwyth.

Level 2 (Clear) 3–4 marks

Will engage with question and the need to explain.

Reasons relating to latitude, prevailing wind will be clear.

There will be reference to both temperature and precipitation at the top of the level.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Aberystwyth is on the west coast, in the path of the prevailing winds as they hit the shore. Depressions come from the west, so more rainfall is released in the west, areas to the east are in rainshadow and therefore receive less rainfall.

Edinburgh is cooler than Aberystwyth in that it is further north therefore the

sun's rays are less concentrated. Aberystwyth is on the west coast and is influenced by the sea and the North Atlantic Drift. The sea is warmer than the land in winter so Aberystwyth is warmer than Edinburgh in winter on the east side of Scotland.

- 3(b)(i)** Wettest June in 120 years of records being kept (1). This was 44mm higher than the second highest year in 1982 (1). 50mm of rain fell in just 1 day (1)
2 x 1 **2 marks**
- 3(b)(ii)** A number of elements are possible – the effect on people's homes and possessions, their businesses, their (journey to) work / home, the way help was on hand and people and organisations rallied around. **4 marks**

Level 1 (Basic) 1–2 marks

Simple statements describing the effects.

Relies on Figure 8; may copy relevant parts.

Random order.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Workers were trapped in factories. Families were airlifted from their flooded flats. Shops and restaurants were destroyed.

Level 2 (Clear) 3–4 marks

Begins to develop points and to link ideas.

Information in Figure 8 is used.

Answer has clear structure – effects categorised.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Businesses were destroyed so people would lose their jobs. Railways were disrupted so people could not get home or to work. Goods were unable to be moved around the area so businesses would suffer.

- 3(c)(i)** Labels likely to relate to the eye, eyewall, circular shape, very large size, anticlockwise spin, north west direction of movement; continuous cloud cover; broken cloud cover.
4 x 1 for appropriate labels which must be arrowed accurately to the feature being described. **4 marks**
- 3(c)(ii)** **Actual content will depend on the case studies being used.** **8 marks**
Economic effects – include loss of earnings, loss of businesses / livelihood, looting of goods, cost of rescue and rebuilding, cost of insurance, possible increased cost of fuel, cost to economy in lost crops / production.
Social effects – include deaths, injuries, displacement of people, loss / damage to homes, having to be separated from family / friends, conditions in places of safety, increase in crime – looting.

Level 1 (Basic) 1–4 marks

Simple statements, perhaps list like at lower end.

Separate ideas.

Social and economic are mixed in account.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Farmland was flooded and crops lost. People died or were injured.

Businesses and buildings were destroyed. Homes were destroyed and families became separated.

Level 2 (Clear) 5–6 marks

Develops statements and makes links.

Social and economic are distinguished.

There is some reference to contrasts between areas studied.

There is clear reference to the case studies.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

In the USA Hurricane Katrina caused nearly 2000 deaths, destroyed over a quarter of million homes and resulted in large numbers of Gulf coast residents being displaced. Katrina damaged major industries such as oil and gas, chemicals and tourism and leaving hundreds and thousands unemployed.

In Honduras and Nicaragua, Central America as a result of Hurricane Mitch the death toll reached nearly 20 000 dead or missing with many people being made homeless. Roads and bridges were destroyed and large areas of farmland were lost through flooding.

Level 3 (Detailed) 7–8 marks

Fully developed statements that are linked.

Contrasting economic and social effects in the different areas are both clear and illustrated.

Detailed knowledge of the case study.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Katrina

Social effects:

Officials put the death toll at 1836 mainly from the state of Louisiana with over 300 000 houses being destroyed or otherwise made uninhabitable.

Economic effects:

Hurricane Katrina affected 19% of US oil production. Katrina destroyed over 100 offshore oil and gas platforms and damaged 457 oil and gas pipelines. This caused oil and gas prices to rise. Katrina struck the heart of Louisiana's sugar cane industry. Chemical plants producing 25% of the nation's chemicals were affected. The tourist industry, in particular the Mississippi coast with 12 casinos was devastated. Hurricane Katrina caused \$260 million of damage to the port of New Orleans disrupting imports and exports.

Mitch

Social effects:

Officials put the death toll at 18 000 dead or missing with over one million made homeless. Over 4 million people were affected with landslides washing away whole villages. In Nicaragua heavy rains damaged 17 600 houses and destroyed 23 900, displacing 368 300 of the population. 340 schools and 90 health centres were severely damaged or destroyed.

Economic effects:

The heavy rain associated with the storm caused widespread flooding and landslides resulting in over 70-80% of the transportation infrastructure of the entire country being wiped out. Mitch's rainfall and associated flooding resulted in 70% of the country's crops being lost. Large amounts of animal losses occurred as well, including the death of 50 000 cattle and the loss of 60% of the poultry population. Shrimp production, which had become an important export, faced nearly complete destruction.

Total Marks for Question 3: 25

Question 4 The Living World

- 4 (a) (i)** Any valid point that relates to the oak tree itself in contrast to other parts of the food chain, oak tree makes its own food (1) via photosynthesis/or explanation of this such as energy from sun (1) and so is a producer (1) whereas other insects, birds etc rely on the plants (1) either directly as eat them (1) – herbivores (1) or indirectly – as eat things that eat plants (1) – carnivores (1) These are consumers (1). Recognition of how tree underpins food chain (1).
3x1 **4 marks**

- 4 (a) (ii)** There is a clue in Figure 11 to this answer – that decomposers are responsible for the breakdown of dead plants, insects, birds, animals. These include bacteria and fungi. Nutrients contained in the decaying matter are released. They go back into the soil where they are ultimately taken up by the roots of plants to go back into the food chain. Leaf fall and animals dying will result in the cycle starting again. The cycle should be recognised. **4 marks**

Level 1 (Basic) (1-2 marks)

Simple statements

Sequence is partial – sections identified – basic cycle

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) (3-4 marks)

Begins to develop points and to link ideas.

There is recognition of the cycle that takes place and the sequence within it.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

- 4 (b) (i)** 4.5kms – 4.6kms = 2 marks;
4.3kms – 4.4kms and 4.7kms – 4.8kms = 1 mark **2 marks**

- 4 (b) (ii)** Any 3 different recreational activities – need to identify activity from map, e.g. picnics, pub lunches (at High Beach); walking on many tracks/paths in forest, e.g. Three Forests Way; finding out about the trees and animals at the conservation centre; learning about the ecosystem at the field study centre; fishing in pond/along rivers. 3x1 for each different type of activity. Need evidence and activity for 1 mark. **3 marks**

4 (c)

Description should refer to the amount of vegetation cover – more extensive in 13b, but still not complete as areas of bare soil are visible; its location – on valley floor only in 13a but extends further up sides in 13b; its height – relatively low lying, but taller in 13b; its flowering status – many flowers and colours are testimony to variety of species in 13b, whereas no flowers in 13a. There should be a recognition that this is the result of recent rainfall, where seeds that have lain dormant germinate, flower, seed and die in a short life cycle following bursts of rain.

4 marks**Level 1 (Basic) (1-2 marks)**

Simple statements.

These are generalised and separate, but do use photo.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

One element – likely to be description (or possible explanation) is addressed.

Some grassier and low bushes in 13a.

There is lots of bare rock. There are a lot of yellow flowers in 13b.

It is colourful.

Level 2 (Clear) (3-4 marks)

Develops points.

Linked statements, making use of photo.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Explanation and description are both considered.

There is more vegetation in 13b than 13a.

There seems more variety; the vegetation has flowered. This is possibly because it has rained recently, so seeds will have germinated and have flowered.

4 (d)

Case studies likely to be dependent on those appearing in related texts – South West US likely to be used, perhaps western Australia. Management should focus on water supply and how it is managed, such as dams along the Colorado, provision for commercial farming – supplying water to California, possible provision of a power source to facilitate development – such as tourism; development of tourism on a large scale, such as Las Vegas, building areas for retirement such as Sun city in Phoenix.

Question demands a focus on management but also requires a link to sustainability.

8 marks**Level 1 (Basic) (1-4 marks)**

Simple statements, perhaps list like at lower end.

Describes ways in which areas used.

Some reference about management.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Information is general.

Max L1 If poorer part of world shown.

There are dams built. This gives a water supply. People have a lot of water. There is tourism in some areas.

Level 2 (Clear) (5-6 marks)

Develops statements.

Links are made between uses of the area and management.

There is some linking to sustainability.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Some reference is made to the case study.

Dams hold back rivers, like the Colorado. The Hoover Dam means there is water for big resorts like Las Vegas. This allows lots of tourists to go there and lots of jobs have been developed. These jobs should be long term if the area is looked after carefully.

Level 3 (Detailed) (7-8 marks)

Fully developed statements.

Links are clearly made between uses of the area and management.

There is clear linking to sustainability – may question the extent to which it can be sustainable.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Specific, detailed reference is made to the case study.

Dams hold back rivers, like Colorado. The Hoover Dam and Lake Mead means there is water for big resorts like Las Vegas. This allows lots of tourists to go there and lots of jobs have been developed. These jobs should be long term if the area is looked after carefully – and it should be sustainable. However, there have been problems – there are other dams such as Glen Canyon at Lake Powell and little water reaches the lower reaches of the river. In Phoenix, there are larger retirement areas and an increasing demand for water. Lots of homes have pools in an area that is very dry that is uncertain whether this can continue forever.

Total for Question 4: 25 marks

SECTION B**Question 5 Water on the Land**

- 5(a)(i)** Symbol for steep slope / cliff present; contours close together; 100m contour down to 60m clear, but then sequence stops. **2 marks**
2 x 1
- 5(a)(ii)** Valley floor is very narrow (1). Sides are steeply sloping (1). V-shaped (1). Allow for detailed observations e.g. valley widens at Trafalgar. **2 marks**
3 x 1/ 1 +(1 + 1)
- 5(b)** Reference to river beginning to meander. Fastest flow being towards developing outside bend and slower water on inside bend. Fastest flow on outside bend results in erosion on this side of the channel and slower water on inside bend causes deposition. This causes the meander to shift (migrate) and two outside bends get closer together as processes continue creating a small area of land separating the neck of meander. This is broken through, often in flood. River follows shortest course, leaving an ox bow lake without a water supply. Deposition completes separation over time. **6 marks**

Level 1 (Basic) 1–4 marks

Simple, listed points.

Order not correct – jumps about.

Sequence may be incomplete.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

*The river flows fastest on the outside of the bend. The meander bends become larger. The bends join and form an oxbow lake.***Level 2 (Clear) 5–6 marks**

Points are developed and linked.

Appropriate terminology is used.

Sequence and formation of ox-bow lake is clear.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

The fastest flow of water is on the outside of the bend of the river and the slower flow is on the inside. This results in erosion on the outside and deposition on the inside. The neck of the meander narrows as erosion continues on the outside of the bend. Eventually, normally during flooding the neck is broken through, creating a straight channel. Over time deposition occurs sealing off the old meander leaving an ox-bow lake.

- 5(c)(i)** The water from two drainage basins meets here (1) so the extra input added to water already present in Valency. (1) **4 marks**
 Boscastle is a built up area / area covered with buildings / tarmac / concrete (1) so land surface is impermeable and runs off quickly / drains put into take water away, so gets to river even faster than it would do naturally. (1)
 (Part is common with F Tier so included F Tier mark scheme, but also levels as H Tier has 3 levelled questions)

Level 1 (Basic) 1–2 marks

Simple, listed points.

Describes what is visible on the map

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Two rivers meet. Boscastle is a built up area so water runs off quickly.

Level 2 (Clear) 3–4 marks

Points are developed.

Makes the link between feature and impact of flood risk

2 x 1 + 1

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Two drainage basins meet so extra water is added to the already full River Valency.

Boscastle is covered with buildings so the land surface is impermeable which increases the speed of run off so the water gets to the river even faster than it would do naturally.

- 5(c)(ii)** Any valid effect – each label must focus on a different aspect. Labels must point to relevant feature and describe exactly what can be seen. **3 marks**
 3 x 1

- 5(d)** Actual content will depend on soft engineering methods selected. **8 marks**
 Likely to refer to flood warnings, preparation, flood plain zoning, 'do nothing' options.
 Will need to show an awareness of what these are e.g. the different levels of flood warning available, the restriction of certain land uses on parts of the flood plain etc. However, need to make clear what advantages and disadvantages of these methods e.g. For warnings that people have time to move possessions upstairs, get sandbags to front in time, evacuate. However, the threat remains and people are likely to be worried by it, suffer stress, have to claim for possessions / struggle to get insurance; for flood plain zoning that restricting building means that impermeable surfaces are not being created, so flood risk is not being increased and houses are not flooding. However, limiting building may limit expansion /

jobs if there are no other suitable sites.

Level 1 (Basic) 1–4 marks

Describes 1 or 2 soft engineering methods.

Statements may be in a random order.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Warn people so they have time to prepare. Stop building on flood plain.

Planting trees to delay rainwater reaching rivers.

Level 2 (Clear) 5–6 marks

Begins to consider advantages or disadvantages.

Refers to two methods, but may be imbalance.

Statements are linked.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Warning people gives them time but people still suffer stress as the threat remains. Flood plain zoning restricts building but may stop development.

Level 3 (Detailed) 7–8 marks

Advantages and disadvantages are both considered.

Statements are linked and detailed.

Refers to two methods – balance between them

Greater balance between components.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Warning will give people time to move possessions, build up sand bags or evacuate. However, the threat remains which will cause stress as people will have to claim on their insurance for damage to property and contents and may struggle to get insurance cover in future years. Flood zoning restricts building and means that impermeable surfaces are not being created, so flood risk is reduced. However, limiting building may limit industrial development and job creation.

Total marks for Question 5: 25

Question 6 Ice on the Land

6(a)(i) 343153 **1 mark**

6(a)(ii) 2.8 – 3.0 **1 mark**

6(a)(iii) Corries – actually 2 – 1 occupied by Red Tarn – small circular lake occupies corrie left after glacier has melted. This corrie is better formed than Brown Cove which is not deep enough for a lake. May refer to steep backwalls of corries where scree is present. There are a number of arêtes- Swirral edge and Striding Edge and a pyramidal peak – Helvellyn. Must clearly show reference to map for marks. **4 marks**

Level 1 (Basic) 1–2 marks

Simple, listed points.

Evidence is general – may note landforms present only.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Steep slopes, small lake, Swirral Edge

Level 2 (Clear) 3–4 marks

Points are developed.

Clearly links landforms to specific evidence in the square.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

A corrie occupied by Red Tarn the backwall of the corrie is very steep and slopes are covered with scree. Swirral Edge is a steep knifed edged ridge known as an arête.

6(b)(i) Any 3 valid labels. Arrows must point to specific feature. **3 marks**
Likely to label glacial trough / U-shaped valley, very steep valley sides / truncated spurs / a lot of bare rock exposed, flat valley floor, course of misfit stream.
3 x 1

6(b)(ii) A river forms a V-shaped valley prior to the Ice Age. The ice occupies this – but not just the valley floor but to a great depth up the sides – possibly filling it. As ice is solid, it cannot wind around the interlocking spurs, so it cuts through them, truncating them and forming the steep valley sides. The greater erosive power means that the valley is deepened and the floor is widened. The ice erodes via abrasion and plucking. There may be reference to the source of the material for abrasion and freeze thaw weathering above the level of the glacier. Plucking may be explained, rather than just mentioned. **6 marks**

Level 1 (Basic) 1–4 marks

Simple, listed points.
 Order not correct – jumps about.
 Sequence may be incomplete.
 Knowledge of basic information
 Simple understanding
 Few links; limited detail; uses a limited range of specialist terms
 Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.
Ice fills a V shaped river valley. Ice is more powerful than water and deepens and widens the valley to make a U shape

Level 2 (Clear) 5–6 marks

Points are developed and linked.
 Appropriate terminology is used.
 Sequence and formation of glacial trough is clear.
 Knowledge of accurate information
 Clear understanding
 Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
 Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.
Before the Ice Age river erosion was limited to a small part of the valley creating a V shape. The ice fills the whole valley and through abrasion, where the rocks embedded in the bottom of the glacier wear away the rocks over which the glacier passes, and plucking, whereas the glacier moves it tears away blocks from the bedrock, the valley becomes widened and deepened. The greater erosive power means that the valley becomes U shaped. The steep sides being formed by the glacier cutting off the edges of interlocking spurs to form truncated spurs and straight valley sides.

6(c)(i) There is a marker which shows where the ice was in 1992 (1) there is a lot of material in the foreground of the photo which is moraine (1), left by the glacier as it melted (1). **2 marks**

6(c)(ii) Actual content will depend on case study. **8 marks**
 Issues should be seen as something that causes debate, different opinions between different groups. Response should convey this.
 Likely to consider environmental issues such as people trampling on snow and impact on soil beneath, or walking on newly exposed moraine – fragile environments; visual intrusion of lots of people and buildings and facilities such as hotels, bars, ski lifts and problems of noise in a wild, isolated environment, the problem of litter. May discuss different views within one category – the need to conserve and the right to see / experience.
 Could also consider economic aspects – the jobs, diversity, opportunities offered in relatively remote, harsh environments and social – the impact on local population may be positive or negative e.g. may encourage young people to stay, reduce rural depopulation, but it may lead to issues regarding values and attitudes.

Level 1 (Basic) 1–4 marks

Describes problems resulting from tourism. Will be general. Statements may be in a random order.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Too many people at certain times of the year. There are traffic jams. Noise and litter pollution. Footpath erosion

Level 2 (Clear) 5–6 marks

Begins to consider why problems are issues. Refers to different views tentatively / implicitly. Some reference to case study. Statements are linked.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

In Chamonix there are lots of jobs for locals working in hotels and restaurants thus encouraging young people to stay in the area however these jobs tend to be seasonal. People trampling on the snow causes erosion particularly in the mountains which affects wildlife habitats.

Level 3 (Detailed) 7–8 marks

Focus on issues and different viewpoints are well explained. Case study is used to illustrate. Statements are linked and detailed.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

In Chamonix jobs may encourage young people to stay and reduce rural depopulation however it may result in the loss of traditional skills and values. Prices in shops are expensive increasing the profit for shopkeepers but they cater for the needs of the tourist not the locals. House prices rise as people from other areas buy second homes and purchase for locals becomes difficult.

Total Marks for Question 6: 25

Question 7 The Coastal Zone

- 7(a)** Freeze thaw weathering involves temperature change around freezing point so that water in a crack in the rock will freeze and expand, subsequent thawing will lead to pressure exerted on side of crack being taken away. Eventually bits of rock will break off. No change is involved in the rock itself, it just gets smaller. This is unlike chemical weathering where under especially warm and wet conditions the composition of the rock changes completely e.g. limestone.
2 x 1 for describing each type, 1 for clear contrast
3 x 1
- 3 marks**

- 7(b)(i)** Sketch should identify line of cliffs, break in slope near top, sea stack, beach, wave cut notch. Labels should identify relevant landforms such as sea stack, may also note indented nature. Any valid label – must be arrowed to point being referred to.
3 for labels, 1 for basic shape of sketch of cliffs and sea stack.
4 x 1
- 4 marks**

Level 1 (Basic) 1–2 marks

Basic sketch.

Single word labels that use generalised terms.

Approximate marks

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 3–4 marks

Sketch picks out key shapes/features

Adds some detail

Specific geographical terms used

Features clearly marked

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

- 7(b)(ii)** Shifting of loose material down a slope as one may be seen as a means of rapidly transforming the coast / cliffs (1) via sliding / slumping (1). The coast will retreat. (1) There will be a new supply of material on the beach (1) which can then be transported via longshore drift (1)
2 x 1/ 1 +1
- 2 marks**

7(c)(i) There is a sandy beach (1) which varies in width – seems to be narrowest at Mappleton (1). There are cliffs behind the beach (1) – these form a continuous line (1). **2 marks**

7(c)(ii) Buildings are near the edge of the cliffs, so it is likely that some of these would go into the sea. Those further away, such as the windmill and the church would survive longer. The road, B1242 is very close to the north edge of Mappleton and this would be threatened, reducing the accessibility to Mappleton. People would lose their homes and the threat of this would be daunting. Businesses near the coast would also go and people would lose their livelihood. People would be forced to move and leave family, friends behind. People may decide to protest and try to get coastal protection. **4 marks**

Level 1 (Basic) 1–2 marks

Simple, listed points.

General – no specific reference to map.

Will consider either settlement or residents.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Houses will fall into the sea. People will have to move. Businesses will close. The car park and picnic site will disappear.

Level 2 (Clear) 3–4 marks

Points are developed and linked.

Refers to map.

Considers both settlement and residents.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

People will be forced to leave the area leaving their friends and family behind. The closure of businesses will increase unemployment in the area. The possible closure of the B1242 will reduce accessibility of Mappleton which will deter industry as well as increasing transport costs for locals.

7(c)(iii) Any method suggested that is valid plus an explanation how it will work e.g. groyne is built at right angles to the coast (1) It will hold back the sand as it moves down the coast (1). (Visible on map) Beach will get bigger / protect cliffs (1). Could suggest sea wall (1), will deflect wave energy (1) 2 x 1 **2 marks**

7(d) Actual content will depend on coastal environment selected – likely to be sand dunes / saltmarsh / mudflats but could relate to area that has been industrialised and now being restored, a nature reserve, SSSI – indeed may be a combination of these. Whichever is selected, there should be reference to the ways in which the **8 marks**

area is managed and how this encourages maintaining the area as it is (or improving it), but allowing it to be used in a way that doesn't damage the area and is long term. E.g. for sand dunes, this may entail building paths, boardwalks, information / education centre where care for the area can be taught / people concentrated, signs put up, areas cordoned off, dunes stabilised. Links need to be made as to how these operate – e.g. boardwalks allow access and use, but protect the sand beneath.

Level 1 (Basic) 1–4 marks

Describes methods of managing the area.

Will be general.

Statements may be in a random order.

Knowledge of basic information

Simple understanding

Few links; limited detail; uses a limited range of specialist terms

Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

People are not allowed to walk everywhere. Signs are put up. Wardens are used. Organisations educate people about wildlife. The area is protected.

Level 2 (Clear) 5–6 marks

Begins to consider how management relates to conservation or sustainable use.

Some reference to case study.

Statements are linked.

Knowledge of accurate information

Clear understanding

Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Theddlethorpe dunes are a National Nature Reserve. This is run by English Heritage. Species are monitored by them to check habitat quality. Leaflets are published and visitors can learn about species and habitats from information boards. This encourages them to look after the area.

Level 3 (Detailed) 7–8 marks

Focus on management and how strategies encourage conservation and sustainable use.

Case study is used to illustrate.

Statements are linked and detailed.

Knowledge of accurate information appropriately contextualised and/or at correct scale

Detailed understanding, supported by relevant evidence and exemplars

Well organised, demonstrating detailed linkages and the inter-relationships between factors

Range of ideas in a logical form; uses a range of specialist terms where appropriate

Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.

Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Formby Point is an area of sand dunes on the Lancashire coast north of

Liverpool. It is a designated National Trust Reserve for the endangered Red Squirrel. 'Duck Boards' are used to allow access and use of the sand dunes whilst protecting the sand beneath. The dunes are stabilised using a planned programme of Marram grass planting. An Education centre on site provides education and information relating to caring for this environment and the accompanying wildlife habitats. Motor vehicle access is restricted a specially designated car parking site is next to the visitor centre and is surrounded by information boards encouraging visitors to look after this important ecosystem and listing restriction such as 'no fires'.

Total Marks for Question 7: 25