

Geography A

Advanced GCE **A2 7832**

Advanced Subsidiary GCE **AS 3832**

Mark Schemes for the Units

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Advanced Subsidiary GCE Geography A (3832)

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Generic Descriptions for Levels Marking

- 1 On the 2680, 2681 and 2682/01 papers you will see that questions are marked out of the following maximum marks.

2
4
6
10
20

- 2 For most questions we will use **LEVEL MARKING** based on **generic descriptors** with clarification on the specific content requirements given on a question-by-question basis. Level marking will always be used for questions marked out of a maximum of 6, 10 and 20 and usually (but not always) for questions marked out of a maximum of 4.
- 3 On the following pages are the generic descriptions for the various maximum marks. Please use these when marking the level marked questions in conjunction with the main mark scheme document.
- 4 You will see that in the generic descriptions there are clear progressions in the standards expected. For example:
'High level' answers tend to be:

'detailed'
'good'
'effective'
'developed'
'clearly present'

'Middle level' answers tend to be:

'clear'
'sound'
'reasonable'
'present'
'some'

'Low level' answers tend to be:

'basic'
'little or no'
'lacks substance'
'limited'

The descriptors for 'middle level' answers could include the top of Level 1 in answers marked using only two levels.

Level marking - Questions marked out of a maximum of 4

Level 2: 3-4 marks

Level 1: 0-2 marks

Level 2

- A **detailed** answer with **good** understanding and knowledge
- Some **development** of ideas
- **Effective** use of geographic terminology
- A **clear** level of written communication

Level 1

- A more **limited** answer with **basic** understanding and knowledge
- **Limited** or **no** development of ideas
- **Basic** use of geographic terminology
- **Limited** level of written communication

Level marking - Questions marked out of a maximum of 6

Level 2: 5-6 marks

Level 1: 0-4 marks

Level 2

- A **detailed** answer with **good** understanding and knowledge
- **Development** of ideas
- Examples and or data/evidence **clearly integrated** into the answer
- Links are **effectively** made
- **Effective** use of geographic terminology
- **Clear** use of written communication

Level 1

- A **more limited** answer with perhaps **reasonable** knowledge but **basic** understanding
- **Limited** or **no** development of ideas
- **Limited** or **no** integration or use made of examples or data/evidence
- **Limited** or **no** links are made
- **Limited** use of geographic terminology
- **Limited** level of written communication

Level marking - Questions marked out of a maximum 10 or 20

Level 3: 8-10 marks/16-20 marks

Level 2: 5-7 marks/8-15 marks

Level 1: 0-4 marks/0-7 marks

Level 3

- A **detailed** answer with **good** understanding and knowledge
- Both description and explanation **clearly present**
- **Development** of ideas
- Examples/data/evidence are **clearly integrated** into the answer
- Links are **effectively** made
- **Effective** use is made of geographic terminology
- A **clear use** of written communication

Level 2

- A **clear/sound** answer with perhaps **reasonable** knowledge but **less convincing** understanding
- Both description and understanding are **present**
- **Some development** of ideas
- **Little use** of examples/data/evidence
- **Some attempt** at linkage is made
- **Some use** of appropriate geographic terminology
- A **reasonable level** of written communication is present

Level 1

- The answer **lacks substance** and offers **only basic or unconvincing or no** knowledge/understanding
- **Only one** of description or explanation is present
- **Little or no development** of ideas
- **No use** made of examples/data/evidence
- **Basic or no** links made
- **Little or no use** of appropriate geographic terminology
- **Basic level** of written communication

2680 The Physical Environment

Question			Gd	Expected Answers	Mks	Rationale
				Hydrological Systems		
1	(a)			Study Fig. 1, which shows monthly rainfall and river discharge for a drainage basin during one year.		
		(i)		<p>Describe the pattern of river discharge through the year shown in Fig. 1.</p> <p>Indicative content: Limited variation/small range, max. in spring/early summer, min. in winter, slow rates of change, data provided for max. and min. months and/or range. Anomaly of very low discharge in May.</p> <p>Level 2 (3-4 marks): candidates accurately describe the pattern, recognising the max. and min. components. Anomaly may be identified. Data is used as evidence. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidates describe the changes in the discharge through the year, but do not recognise the key features of the pattern. Months may be named and discharge data provided, but not used as evidence. Limited use made of geographical terminology.</p>	[4]	<p>Anomaly is a L2 indicator but not required for L2.</p> <p>Pattern necessary for top L2.</p> <p>Detailed month by month description, with no identification of pattern is L2-.</p> <p>Correct figures required for top L2.</p>

		(ii)	<p>Suggest how monthly rainfall may have influenced this pattern of river discharge.</p> <p>Indicative content: Highest rainfall occurs during the winter and this finds its way into river channels via run-off, throughflow, baseflow etc. increasing the discharge. However, there is a lag between max. rainfall (Dec) and max. discharge (April/June) suggesting that this happens relatively slowly. In summer the rainfall levels are lower and so less water enters the channel and the discharge is lower. Again, there is a lag between min. rainfall and min. discharge.</p> <p>Level 2 (5-6 marks): candidates show good understanding with clear linkages established between rainfall inputs and discharge outputs. Shows understanding of throughputs. Effective use made of geographical terminology. The lag/delay should be recognised for 6 marks.</p> <p>Level 1 (0-4 marks): candidates show awareness of input and output relationship, but the link is not explained effectively. Lag/delay not recognised. Limited use made of geographical terminology.</p>	[6]	<p>Recognition of the lag time involved is a L2 indicator, provided there is some evidence in support. Need link to the discharge pattern in the graph for L2.</p>
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Question			Gd	Expected Answers	Mks	Rationale
		(iii)		<p>Explain the effect of ONE other physical factor on this pattern of river discharge.</p> <p>Indicative content: Temperature/evaporation, relief, rock type, soil type, vegetation cover, drainage density, basin shape/size are all relevant factors. The influence is likely to relate to the speed of throughputs. Factors will determine whether the water mainly moves above (rapidly) or below (slowly) ground. In this example the low rates of change suggest slow, sub-surface movements.</p> <p>Level 2 (3-4 marks): candidates identify a valid factor, state its influence and then explain how it has this influence. There is a clear link made to the pattern. Effective use made of geographical terminology</p> <p>Level 1 (0-2 marks): candidates identify a valid factor, and state its influence. Explanation is not provided or is incorrect. The influence is not explicitly linked to the pattern. Limited use made of geographical terminology.</p>	[4]	A clear link to the pattern in the graph is needed for the top of L2.

Question		Gd	Expected Answers	Mks	Rationale
	(b)		<p>Describe and explain how human activities can influence the shape of storm hydrographs.</p> <p>Indicative content: People can influence hydrograph shapes through deforestation, urbanisation, agriculture, dam construction etc. Explanations should focus on how these activities alter the rate and/or amount of throughput of water through a river system. These changes should then be explicitly related to features of shape, such as lag time, height of peak and steepness of limbs.</p> <p>Level 3 (8-10 marks): candidates clearly identify at least two different human activities and describe and explain how these influence the features of hydrograph shape. Accurate use made of geographical terminology. Examples may be used to provide evidence.</p> <p>Level 2 (5-7 marks): candidates identify at least one human activity and describe and explain how they influence throughputs of water. Any references to hydrograph shape may be implicit. Reasonable use made of geographical terminology. Examples may be provided but not effectively used. One done well may reach the top of this level.</p> <p>Level 1 (0-4 marks): candidates identify relevant human activity/activities and/or offer basic description of influence. Lack of explained linkages. Inaccurate use made of terminology. Examples may not be specified.</p>	[10]	<p>Mirror images using deforestation and afforestation cannot gain double credit, unless different flows are discussed.</p> <p>eg urbanisation involves the building of impermeable surfaces, which prevents infiltration, meaning quicker flow to the river and a shorter lag time</p> <p>eg urbanisation increases peak discharge</p>
			Total	24	

Question			Gd	Expected Answers	Mks	Rationale
				Ecosystems		
2	(a)			Study Fig. 2, which shows the nutrient cycle for an ecosystem.		
		(i)		<p>How are nutrients transferred from biomass to litter and litter to soil?</p> <p>Indicative content: Minerals and nutrients are transferred from biomass to litter by leaf fall, animals dying, animals excreting etc. Transfers from litter to soil by decay/decomposition by bacteria and fungi. Earthworms and water entering the soil carry decomposed matter into the soil.</p> <p>Level 2 (3-4 marks): candidates address both transfers and show understanding of each. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidates address one transfer fully or both partially. Limited use made of geographical terminology. One done well may reach the top of this level.</p>	[4]	Some qualifying statement of the basic reason qualifies for the second mark under each transfer.
		(ii)		<p>Using Fig. 2, explain the possible influences of TWO physical factors that affect the size of the soil store.</p> <p>Indicative content: the soil store is directly affected by inputs from the biomass, the litter and weathering. It is also affected by the outputs to the biomass and to leaching.</p> <p>Level 2(5-6 marks): candidates explain the influence of two factors in some detail. Effective use made of geographical terminology.</p> <p>Level 1(0-4 marks): candidates provide basic explanation of the influence of both factors. Limited use made of geographical terminology. One factor done well may reach the top of this level.</p>	[6]	No credit for identification of factors shown on the diagram.

Question			Gd	Expected Answers	Mks	Rationale
	(b)	(i)		<p>What is meant by the term 'net primary productivity (N.P.P.)'?</p> <p>The (rate of) production of energy by primary producers/green plants by photosynthesis (1) minus the energy used by the plants themselves (in respiration) (1).</p>	[2]	Any answer that identified the idea of energy or biomass produced can gain 1 mark. NPP = GPP – respiration is 1 mark.
		(ii)		<p>Explain why the N.P.P. of an ecosystem can vary over time.</p> <p>Indicative content: NPP can vary seasonally. The difference in the input of solar energy between summer and winter means less energy is available for conversion by photosynthesis. Deciduous plants will lose their leaves in winter and be unable to photosynthesise. In the longer term, changes in vegetation density and type during succession mean that more/less plant matter is available for photosynthesis. Human activity (eg deforestation) and plant health (eg disease) may also play a part.</p> <p>Level 2 (3-4 marks): candidates fully explain at least one reason. Explicit links made to the potential for photosynthesis. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidates explain at least one reason partially. Links to the potential for photosynthesis likely to be implicit. Limited use made of geographical terminology.</p>	[4]	Longer term variations, such as drought, are also acceptable

Question		Gd	Expected Answers	Mks	Rationale
	(c)		<p>With reference to a located example, describe and explain the impact of human activity on the natural processes within a broadleaved deciduous forest ecosystem.</p> <p>Indicative content: Appropriate human activities include coppicing, introducing new species, recreation and leisure etc. The natural processes include those of succession, energy transfer, mineral-nutrient cycling etc.</p> <p>For example, coppicing often took place to allow stools to regenerate for timber and charcoal. Hazel was sometimes introduced as a good source of fence posts. Disruption to natural process may be minimal and possibly short-term, if effectively managed. However, more significant and possible less well-managed long term changes may occur, perhaps leading to a plagio-climax community.</p> <p>Level 3 (8-10 marks): candidates clearly identify at least one human activity and explain the influence on at least two natural processes. Explicit links are made to processes such as succession, for example. Accurate use made of geographical terminology. Examples effectively used to provide evidence.</p> <p>Level 2 (5-7 marks): candidates identify at least one human activity and explain the influence on the ecosystem. Any references to natural processes may be implicit. Reasonable use made of geographical terminology. Examples provided but not effectively used.</p> <p>Level 1 (0-4 marks): candidates identify relevant human activity/activities. Lack of linkage to the ecosystem. Inaccurate use made of terminology. Examples may not be specified.</p> <p>Max 6 marks if no located example.</p>	[10]	<p>Hydrological processes are acceptable.</p> <p>Use of tropical rainforest can gain a max of 6.</p>
			Total	26	

Question			Gd	Expected Answers	Mks	Rationale
				Atmospheric Systems		
3	(a)			Study Fig. 3, which shows a temperature inversion.		
		(i)		<p>Describe the pattern of changing temperature with altitude as shown in Fig. 3.</p> <p>Indicative content: The general trend is of decreasing temperature with increasing altitude. However, there is an anomaly to this pattern from 500m to 1000m altitude where the temperature increases slightly from 8 to 10 degrees.</p> <p>Level 2 (3-4 marks): candidates accurately describe the pattern, recognising the general pattern and the anomaly. Data is used as evidence. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidates describe the changes in the temperature with increasing altitude but do not recognise the general pattern. A list of heights/temperatures may be provided. Limited use made of geographical terminology.</p>	[4]	Descriptions which start at 2500m and work towards ground level are equally acceptable.
		(ii)		<p>Explain ONE reason why temperature inversions occur.</p> <p>Indicative content: The usual cause of this phenomenon is the sinking of cold, dense air towards the ground. This remains cold if the ground is not releasing heat itself. It can also occur when warm air moves across a cold surface and is cooled, eg sea breezes, or when warm air rises over colder, denser air at a front.</p> <p>Level 2 (3-4 marks): candidate offers detailed explanation of why temperature inversions occur. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidate offers limited explanation of temperature inversion with a valid reason stated. Limited use made of geographical terminology.</p>	[4]	Mention of hot gases/air emitted by tall chimneys at a higher level in the atmosphere is acceptable, but needs to be developed in relation to colder air beneath.

Question			Gd	Expected Answers	Mks	Rationale
		(iii)		<p>Describe and explain the impact of temperature inversions on weather conditions.</p> <p>Indicative content: Sometimes the inversion layer is high so that clouds can form due to condensation, but then they spread out under the inversion layer. This cuts out sunlight to the ground and prevents new thermals from forming. A period of cloudiness is followed by sunny weather as the clouds disperse. This cycle can occur more than once in a day. Fog and mist are common weather features when air moves horizontally and cools. This happens in coastal areas where warm, moist air from the sea moves over cold land and cools and condenses close to ground level. The capping air in an inversion layer may be suddenly breached leading to severe thunderstorms.</p> <p>Level 2 (5-6 marks): candidates explain the impact making explicit links between specific weather conditions and the inversion. Effective use made of geographical terminology.</p> <p>Level 1 (0-4 marks): candidates describe the impacts and attempt some explanatory links. However, these lack depth and detail. May become sidetracked onto impact on humans (smog etc.). Limited use made of geographical terminology.</p>	[6]	<p>Accept any reasonable weather conditions, including frontal rainfall.</p> <p>Up to 2 marks available for recognition of relevant weather conditions, even if explanations are invalid.</p>

Question		Gd	Expected Answers	Mks	Rationale
	(b)		<p>Describe and explain energy transfers that occur from low to high latitudes.</p> <p>Indicative content: There is an energy deficit between 40 and 90 degrees N and S of the equator with a peak between 60 and 70 degrees. Transfers of energy occur across latitudes to prevent this imbalance from causing the poleward regions to get colder and colder and the tropical regions hotter and hotter. The greatest rate of transfer occurs at 40 degrees, where the budget changes from a low latitude surplus to a high latitude deficit.</p> <p>There are 3 key transfer mechanisms at work. Ocean currents transfer energy stored in warm water at low latitudes to higher latitudes eg Gulf Stream. Surface winds of the general circulation move energy stored in the air at low latitudes towards polar regions eg within Hadley cells (upper air) and Ferrel cells (surface air). Weather systems such as depressions, anticyclones also transfer energy as they move, although this is often less dramatic/significant.</p> <p>Level 3 (8-10 marks): candidates accurately describe and clearly explain at least two of the three mechanisms. An overview of the global energy budget is provided. Accurate use made of geographical terminology. Examples effectively used to provide evidence.</p> <p>Level 2 (5-7 marks): candidates accurately describe and make some explanatory links between the mechanism and energy transfer. May lack an overview of the budget. Reasonable use made of geographical terminology. Examples provided but not effectively used.</p> <p>Level 1 (0-4 marks): candidates describe relevant transfer mechanism(s). Lack of explanatory linkages. Inaccurate use made of terminology. Examples may not be specified.</p>	[10]	<p>Candidates who mistakenly discuss energy transfers from low to high altitudes gain no marks.</p> <p>Also accept hurricanes/tropical storms.</p> <p>L3 answers need some reference to the energy budget and surpluses and deficits to provide the explanatory link to the transfers.</p> <p>Reference to imbalances in the energy budget may be implied in L2.</p>
			Total	24	

Question			Gd	Expected Answers	Mks	Rationale
				Lithosphere		
4	(a)			Study Fig. 4, which shows the global distribution of earthquakes.		
		(i)		<p>Describe the global distribution of earthquakes shown in Fig. 4.</p> <p>Indicative content: Earthquakes occur in linear belts/bands. These tend to be along the edges of continental land masses eg N. America, or in the middle of oceans, eg Mid-Atlantic. There are some anomalies away from these locations and in isolation or clustered groups eg East Africa, Australia.</p> <p>Level 2 (3-4 marks): candidates accurately describe the pattern. Anomaly recognised. Examples provided as evidence. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidates describe locations, but without recognising global pattern or anomalies. Provides named examples. Limited use of geographical terminology.</p>	[4]	For the top of L2, descriptions must give some indication of the linear pattern. Anomaly a L2 indicator, but not required for L2.

		(ii)	<p>Explain how tectonic processes cause earthquakes at location X on Fig. 4.</p> <p>Indicative content: Earthquakes are caused by the movement of tectonic plates driven by convection currents in the asthenosphere. They occur when energy is suddenly released due to the dislocation of the plates, predominately at their edges. This is due to compression at destructive boundaries such as X as one plate subducts under another, usually due to higher density.</p> <p>Level 2 (3-4 marks): candidates accurately explain the processes involved. This is likely to include a generic statement as well as details of the boundary movements. Effective use made of geographical terminology.</p> <p>Level 1 (0-2 marks): candidates offer some explanation. This may be generic, or relating to this type of boundary. Limited use of geographical terminology.</p>	[4]	<p>Idea of plate sliding past each other, creating stress through sticking and subsequent release of pressure is worthy of credit.</p> <p>L2 responses need some reference to tectonic processes, such as convection currents, slab pull, ridge push, subduction.</p>
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	(b)		<p>How are mid-ocean ridges formed?</p> <p>Indicative content: Mid-ocean ridges form at constructive plate margins. As plates diverge, tensional faults form which allow low density, high temperature magma to escape onto the sea bed. Successive outpourings build up to raise the level of the bed and form a ridge. This is also affected by a doming up of the sea bed by rising magma unable to escape.</p> <p>Level 2 (5-6 marks): candidates explain the formation with explicit reference to the processes involved that cause a raising of the sea bed level. Effective use made of geographical terminology.</p> <p>Level 1 (0-4 marks): candidates describe the movement of the plates at the boundary and the escape of magma, but this is not explicitly linked to the raising of the sea bed level. Limited use made of geographical terminology.</p>	[6]	
	(c)	(i)	<p>What is meant by the term ‘weathering’?</p> <p>The breakdown/decay of rock (1) “in situ”, or equivalent (1), or by chemical and physical mechanisms. (1).</p>	[2]	

Question			Gd	Expected Answers	Mks	Rationale
		(ii)		<p>Using examples, describe and explain the impacts of weathering on limestone landforms.</p> <p>Indicative content: Limestone landscapes are sometimes known as “karst”. The key weathering process is carbonation, although freeze-thaw and biological weathering also contribute. Stripping of overlying soil/vegetation by glacial processes may contribute in exposing bare limestone surfaces. The main landscape features are limestone pavements, scree, shake holes, sink holes, dolines, poljes. The main factors influencing the processes are climate and the physical and chemical characteristics of the limestone.</p> <p>Level 3 (8-10 marks): candidates accurately describe and clearly explain the impact of weathering on at least two landforms. Accurate use made of geographical terminology. Examples effectively used to provide evidence.</p> <p>Level 2 (5-7 marks): candidates accurately describe and make some explanatory links between the processes and the landforms. These may be limited in number and range. Reasonable use made of geographical terminology. Examples provided but not effectively used. One done well may reach the top of this level.</p> <p>Level 1 (0-4 marks): candidates describe some appropriate landscape features and/or identify relevant processes. Lack of explanatory linkages. Inaccurate use made of terminology. Examples may not be specified.</p> <p>Max 6 marks if no examples.</p>	[10]	Examples here include types of landform
				Total	26	

2681 The Human Environment

Question		Expected Answers	Mks	Rationale
1	Population			
	(a)	Study Fig. 1, which shows infant mortality rates in central and south west Asia, north east Africa and eastern Europe, 2007.		
	(i)	<p>With reference to Fig. 1, describe the spatial variation in infant mortality rates.</p> <p>Level 2 5-6 marks A clear description. The discriminator from Level 1 is that the response will include a summative comment which relates to the overall spatial variation in IMRs. Reference to areas of both higher and lower values is required for full marks. Max 5 marks if no reference to specific countries, figures or anomalies.</p> <p>Level 1 0-4 marks A basic description in which there is no recognition of overall spatial variation in IMRs. There may be reference to areas of higher values or lower values only. At the lower end of the mark range (max 2 marks) there may be listing of countries/values only.</p> <p><i>Indicative content:</i> Possible summative comments include:</p> <ul style="list-style-type: none"> • Higher infant mortality rates in lower latitudes/lower rates in higher latitudes • Higher IMRs in south and central Asia (Uzbekistan/India axis) and in NE Africa/lower rates in eastern Europe, Middle East and Saudi Arabia <p>Anomalies include:</p> <ul style="list-style-type: none"> • Sri Lanka, Saudi Arabia, Oman (lower values in areas 	6	Focus on geographical pattern. Allow also idea of distance decay from Afghanistan and Somalia.

Question				Expected Answers	Mks	Rationale
				of relatively low latitudes) • Iraq (high values relative to neighbouring Middle East and Gulf states) • Egypt (relatively low values in NE Africa)		
		(ii)	Suggest <u>two</u> possible reasons for this spatial variation.	<p>Level 2 5-6 marks A clear understanding of the reasons for spatial variation in infant mortality rates. The discriminator from Level 1 is that at least two reasons are well-explained. At least one of the factors is explicitly linked to the IMR.</p> <p>Level 1 0-4 marks A basic response. Up to 4 marks may be awarded for a well-developed explanation of one factor. Equally, two factors, each of which is less well explained and only linked to the IMR by implication may be awarded up to 4 marks. At the lower end of the mark range understanding is weak with brief undeveloped phrases.</p> <p><i>Indicative content:</i> Possible reasons for spatial variation in the IMR include:</p> <ul style="list-style-type: none"> • Nutrition/food supply, famine • Standard of health care - ante/post natal • Access to health care • Female literacy/education • Sanitation • Water supply • Disease - endemic, epidemic • Wealth 	6	Allow impact of war in explaining poverty, lack of aid, and reduced ability to invest in health care.

	(b)	<p>Explain why ‘infant mortality rate’ is a more useful indicator of a country’s level of development than ‘crude death rate’.</p>	<p>Point marking, 3 statements/reasons @ 1 mark each, as below. Two marks should be reserved for comparative reference to the IMR/CDR.</p> <p><i>Indicative content:</i> A typical response might include:</p> <ul style="list-style-type: none"> • definition or some understanding of one or both of the two terms, to achieve the first mark:- <p>eg The infant mortality rate is a standardised mortality rate ie the total number of deaths per 1000 people of a given age (1); it is the annual number of babies per 1000 live births who die before their first birthday (1); the crude death rate is the annual number of deaths per 1000 of the total population (1).</p> <ul style="list-style-type: none"> • followed by reference to the relative value of IMR and CDR as indicators of development, to achieve the 3rd mark:- <p>eg The IMR is one of the most widely used statistics of development since deaths of infants can be specifically linked to other indicators of development such as levels of nutrition, education, and health care (1); LEDCs invariably have high IMRs and MEDCs invariably have low IMRs (1).</p> <p>The CDR has its shortcomings; it does not take into account the overall age structure of a population (1); it is a rate based on the entire population (1); many LEDCs (youthful populations) have lower crude death rates than MEDCs (ageing populations) (1).</p>	3	
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	(c)	<p>With detailed reference to examples, describe and explain socio-economic consequences of international migration.</p>	<p>Level 3 8-10 marks Detailed knowledge and convincing understanding of the consequences of international migration. At this level, consequences will be linked explicitly to specific localities and/or groups of people perhaps distinguished by age, ethnicity or income. The discriminator from Level 2 is that there is detailed explanation and exemplification of at least two socio-economic consequences of international migration.</p> <p>Level 2 5-7 marks Clear knowledge and understanding of the consequences of international migration. Place knowledge and understanding of the two socio-economic consequences may be less convincing than in Level 3; there may be more emphasis on description. It is the presence of explanation that distinguishes the response from Level 1. One well-illustrated and well-explained consequence may be awarded up to 7 marks.</p> <p>Level 1 0-4 marks Basic knowledge of the consequences of international migration. The response offers little more than description of socio-economic consequences. Factual/place knowledge is limited.</p> <p><i>Indicative content:</i> Consequences may be positive and/or negative, short and long term. Historic and modern examples of migration are equally acceptable. The effects may be on geographical areas at a wide variety of scales and locations either in the place of origin or the destination; and, on a particular group of people or an individual.</p>	10	<p>Breadth approach also valid eg several consequences with some development and which may be linked</p>
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			<ul style="list-style-type: none"> • Economic: resolution of labour shortages; increasing affluence; reinvestment of financial remittances in the area of origin; impact on economy in the area of loss • Social: tension arising from establishment of segregated socio-economic groups; improvements in the quality of life, social well being and freedom; changes in type of service provision; exported culture as result of colonisation • Social (demographic): scale of total loss/gain; age-selected loss/gain; impact on birth rate and natural increase; spatial redistribution of population 		
			Total	25	

Question		Expected Answers	Mks	Rationale
2	Rural Settlement			
	(a)	Study Fig. 2, which shows photographs of two rural settlements. <u>A</u> is situated in the Andes of northern Peru. <u>B</u> is situated in Snowdonia, North Wales.		
	(i)	<p>Describe the layouts of settlement <u>A</u> and settlement <u>B</u>.</p> <p>Level 2 3-4 marks A clear description of the layouts of the two settlements. The discriminator from Level 1 is that reference is made to the overall shape of each village plus more detailed description of the internal layout of at least one of the villages. For full marks specific reference to characteristic patterns of the buildings and/or roads shown on the photographs is required for both settlements.</p> <p>Level 1 0-2 marks A basic description in which there is a simple, bald statement of the overall shape of each village with no further relevant development is worth two marks eg 'settlement A is nucleated and settlement B is linear'.</p> <p>Indicative content: Settlement A is a nucleated village; the buildings are located close together around a central point where four tracks/roads converge.</p> <p>Settlement B has an overall linear shape; the buildings are aligned, close together, along one side of a single road.</p>	4	

		(ii)	<p>With reference to evidence from the photograph of settlement A, state and explain <u>two</u> possible reasons for its layout.</p>	<p>Level 2 5-6 marks A clear response. The discriminator from Level 1 is that the answer includes two well-explained reasons. A Level 2 response should make explicit links to the evidence of photograph A for each reason. Max 5 marks if reference to only one piece of photographic evidence.</p> <p>Level 1 0-4 marks A basic response. One well-explained reason which explicitly relates to the photograph of settlement A may be awarded up to 4 marks. Max 3 marks if no photographic evidence. Equally two reasons stated in a more basic way or with no explicit reference to the photograph may be awarded up to 4 marks. At the lower end of the mark range (max 2 marks) responses include brief, simplistic phrases.</p> <p><i>Indicative content:</i> Reasons/evidence for the development of the nucleated settlement in photograph A include:</p> <ul style="list-style-type: none"> • Communal farming practices - concentration of buildings at one point with access to most of the fields • Concentration of built up area to maximise use of the limited flat land/richer soils for farming • Route convergence - tracks form crossroads, a point of access, convenient for trade/commercial activity • Clustering of buildings around open space - market place, recreational area • Elevated dry site • Limited area of flat land - ease of building 	6	
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		(iii)	<p>State and explain <u>two</u> possible reasons why places such as settlement <u>B</u> have experienced rural depopulation.</p>	<p>Level 2 5-6 marks A clear response in which there are two developed reasons for loss of population. The focus of the answer should be on the push factors prevalent in upland areas such as Snowdonia (rather than the generic pull factors which could exert an influence on migrants from any type of area). Exemplar material is not essential but if photographic evidence is used in this instance or if reference to other similar places is made, credit may be given up to full marks if it demonstrates/enhances understanding.</p> <p>Level 1 0-4 marks An answer with basic statement of two reasons in outline may be awarded up to 4 marks. Equally one reason for loss of population which is well developed may be awarded up to 4 marks. At the lower end of the mark range (max 2 marks) responses may be entirely descriptive for example, in this instance, listing of evidence from photograph B only.</p> <p><i>Indicative content:</i> Possible reasons for rural depopulation, in upland areas such as Snowdonia, include:</p> <ul style="list-style-type: none"> • Few employment opportunities - moorland, steep slopes, pastoral farming, forestry supports only low density population, limited number and range of types of job, closure of slate quarry • Limited number and range of shops and services - only a few small settlements widely dispersed which provide mostly low order functions- threshold populations increasingly difficult to achieve • Low incomes in rural jobs, especially for young local people/rural poverty - plus higher costs of living eg fuel, food, housing 	6	
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				<ul style="list-style-type: none"> • Dissatisfaction with rural way of life - upland area, harsh environmental conditions (eg higher rainfall, lower temperatures, higher incidence of snowfall, strong winds) • Second home ownership - increasingly driving up house prices - loss of local services • Poor accessibility/longer travelling times - narrow minor roads/low density network - affects access to vital services, larger settlements, higher order facilities, entertainment facilities. 		
	(b)	(i)	<p>What is the difference in the meaning of the terms 'central place' and 'centrality'?</p>	<p>Level 2 3-4 marks A clear response in which definitions of the two terms are correctly stated and compared. Three marks may be awarded if one of the two definitions is less precise.</p> <p>Level 1 0-2 marks A basic response in which 2 marks may be awarded if only one of the terms is correctly understood, or one mark for each of two definitions which are less precise.</p> <p><i>Indicative content:</i> A central place is a settlement supplying goods and services to its own inhabitants and those of the surrounding area. Centrality is the term which refers to the importance or status of a central place relative to other settlements in the area/settlement hierarchy.</p>	4	

		(ii)	<p>Suggest <u>two</u> reasons why the centrality of a rural settlement can increase through time.</p>	<p>Level 2 5-6 marks A clear response which considers increase in status or importance of a rural settlement. The discriminator from Level 1 is that the answer includes at least two well-developed reasons.</p> <p>Level 1 0-4 marks A basic response. Two reasons stated more basically, may be awarded up to 4 marks. One reason well-explained may be awarded up to 4 marks. At the lower end of the mark range (max 2 marks) responses will be brief, simplistic phrases.</p> <p><i>Indicative content:</i> Centrality might be measured on the basis of number and type of shops and services, total retail floor space, retail turnover, size of catchment/trade area. Any significant development of these characteristics would cause a rural settlement to increase its importance or status within the settlement hierarchy as retail or service thresholds are achieved. Possible reasons include:</p> <ul style="list-style-type: none"> • Counterurbanisation • Urban - rural migration • Growth of the tourism industry • Increase in accessibility • Planning initiatives eg key settlement policy, development of superstores • Exploitation of a mineral resource 	6	<p>Allow teleworking</p>
			Total		26	

Question		Expected Answers		Mks	Rationale
3	Urban Settlement				
	Study the 1:50,000 OS map extract which shows part of central and western Sheffield.				
	(a) With reference to specific evidence from the OS map, identify <u>two</u> factors which have influenced the shape of this part of Sheffield's built up area.	<p><i>In each instance award one mark for the stated factor and one mark for reference to specific OS evidence (either grid ref, place name or physical/human feature).</i></p> <p>Indicative content: Possible factors include:</p> <ul style="list-style-type: none"> • Rivers - as barriers - eg R. Rivelin and/or R. Loxley, 3189 • Flood hazard - flood plain avoidance eg 3285 • Steep slopes - Rivelin Valley, 3087 or 3187 • Golf course - 2986 and 3086 • Cemetery - 3287 and 3089 - fossilised land uses • School playing fields - eg 3184 • Farmland - Knoll Top Farm 2885 • Parkland/estate eg 3084 • Roads 		2+2	
	(b) (i) With reference to Fig. 3, describe <u>two</u> differences between the age structures of Fulwood and Broomhill wards.	<p>Level 2 3-4 marks A clear response. The discriminator from Level 1 is that two contrasting characteristics of the age structures are described. Max 3 marks if no reference to figures.</p> <p>Level 1 0-2 marks A basic response which contrasts the age structures in a more generalised way. Answers which refer to only one contrasting feature of the age structure may be awarded up to 2 marks.</p>		4	For full marks expect use of at least one term to categorise age group eg older working

				<p>Indicative content:</p> <ul style="list-style-type: none"> • Young dependents U16 - Fulwood has a higher % (15.4%/8.8%) • Young working population/students, 16-30 - Broomhill has a much higher (>double) % (56.5%/24.8%) • Older working population - 46-60 - Fulwood higher (double) % (20.5%/9.5%) • Retired - 61+ - Fulwood has higher % (21.7%/11.6%) • Broomhill age-structure tapers dramatically with age from 16 - 75 years whereas in Fulwood tapering is evident only from 46 years • Fulwood increase in % between 31 and 60 whereas in Broomhill tapering (decrease in %) continues 		
		(ii)	<p>With reference to OS map evidence and Fig. 3, suggest <u>two</u> reasons for the differences described in part (i).</p>	<p>Level 2 5-6 marks A clear response. The discriminator from Level 1 is that two reasons for contrasts identified in part (b)(i) are well explained. For full marks at least one reason must be explicitly linked to OS map evidence. Max 5 marks if no reference to the OS map.</p> <p>Level 1 0-4 marks A basic response. Reasons may be more generalised with no reference to the OS map. Up to 4 marks may be awarded for one appropriately developed reason; max 3 marks if no OS map evidence. At the lower end of this mark range there may be undeveloped reasons or mere listing of OS map evidence.</p> <p>Indicative content: Possible reasons/evidence include:</p> <ul style="list-style-type: none"> • Income - explains contrast in youthful groups in Broomhill/older groups in Fulwood - link to ability to afford housing type - evidence of smaller terraced housing in Broomhill v larger detached housing in Fulwood 	6	

				<ul style="list-style-type: none"> • Income - link to ability/means to commute from Fulwood v walk to work, university, services for Broomhill residents • Stage in family life cycle/size and composition of household - link to housing type/size, likely to be families with older children in Fulwood v single people, smaller younger families in Broomhill • Recreational demands of different age groups eg preference for living on rural-urban fringe for older/elderly groups in Fulwood eg golf club, rambling v access to leisure centres, university sports facilities, night clubs, pubs for more youthful element in Broomhill • Demand for housing type, low density, Fulwood v high density Broomhill - life cycle stage (relates to age, household composition and size, income, place of work) • Escape from negative externalities of inner city living - high density housing, traffic, noise and atmospheric pollution. • Attractions of positive externalities of the rural-urban fringe, proximity to national park (Stanage Edge, Hallam Moors, Rivelin valley, reservoirs, woodland), schools (320865, 3184), hospitals (308852, 296875) decentralised offices (286861). 		
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	(b)	<p>Describe and explain the effects of urban growth on the environment. Refer to a named example or examples of urban areas in MEDCs.</p>	<p>Level 3 8-10 marks Detailed knowledge and understanding of an MEDC urban area. The focus of a Level 3 response is on environmental consequences resulting from its growth/development. Intra-urban place knowledge is convincing such as population figures, named urban areas, roads, open spaces, areas of the rural-urban fringe or any physical features. The discriminator from Level 2 is that two effects on the environment are well-explained and exemplified.</p> <p>Level 2 5-7 marks Clear knowledge and understanding of the effects of urban growth on the environment in an MEDC urban area. The focus is still on the link between urban growth and the environment but the link is merely implicit. Place detail is less secure with limited, if any, intra-urban place knowledge. There may be more emphasis on description rather than explanation. One well-developed and exemplified reason may be awarded up to 7 marks. The discriminator from Level 1 is that there is explanation of at least one link between urban growth and the environment.</p> <p>Level 1 0-4 marks Basic knowledge of environmental effects, with perhaps a list of environmental problems only; there is an unconvincing link to urban growth ie an entirely descriptive response. Either urban growth or its effects on the environment is omitted. At the lower end of the mark range (max 2 marks) there will be brief, undeveloped phrases.</p> <p>Max 6 marks for detailed and accurate answers which are wholly generalised. Answers using the OS map evidence of Sheffield are acceptable, up to full marks.</p>	10	<p>Breadth approach also applicable for L3</p> <p>Look for link between urban growth and effects on environment</p>
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		<p><i>Indicative content:</i> Possible effects of urban growth on the environment include:</p> <ul style="list-style-type: none"> • Atmospheric pollution - increase in length of journey to work/use of cars • Flooding - buildings/impermeable surfaces reduce infiltration, increasing volume and speed of surface run-off • Impact of building/urban sprawl on natural ecosystems - eg loss of woodland/moorland habitats • Environmental costs of meeting demand for water - reservoir construction/ extraction • Waste disposal - landfill • Effects of subsequent planning responses (positive and negative) on the environment eg dereliction/creation of brownfield sites as a result of decentralisation • Changes in land use in the rural-urban fringe 		
		Total	24	

2682 Geographical Investigation

- 1(a) Identify and justify the factors taken into account when choosing the sample size for your investigation. [10 marks]

Indicative content – not all points are required to achieve full marks:

- Objectives of investigation
- Requirements for data analysis
 - Minimum sample size needed to be representative, eg range of housing types; gender and age balance; range of vegetation types need to be covered (ie requirements to provide a representative stratified sample).
 - Minimum sample size to carry out a test, eg for Spearman's.
 - Minimum sample size to construct a graph, eg isoline map of pedestrian flow.
- Human factors
 - Time available
 - Time to travel to and from data collection site.
 - Time at site.
 - Hours of daylight.
 - School constraints.
 - Number of visits possible – and when (eg day of week, time of day).
 - Capability of students: affects how long it takes to collect data. May need to repeat readings to correct errors.
 - Barriers created by landowners.
- Physical factors
 - Access to sampling sites, eg difficult/long footpaths; hard to carry equipment.
 - Local conditions, eg tides; stability of weather for climate data.
 - Type, quantity and quality of equipment available affects time taken to collect data.

The following are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the response.
- Discussion relates to the candidate's own investigation.

Level 3 (8-10 marks)

Justification of factors is discussed **in detail**.

At least two relevant factors.

Refers to own geographical investigation.

The answer is logically ordered.

Level 2 (5-7 marks)

Justification of factors is discussed **clearly (less detail)**.

At least two relevant factors.

May refer to own geographical investigation.

There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Justification of factors is discussed **basically**.

Limited number/irrelevant factors.

Unlikely to refer to own geographical investigation.

There are considerable gaps and/or errors in the answer.

Max Level 1 if only one factor.

Max Level 2 if no reference to own investigation in text.

- 1(b) Describe how your investigation could have been improved by the use of data not collected as part of the fieldwork by your school/college. [10 marks]

Indicative content – not all points are required to achieve full marks:

- Field studies centres: access to a range of data collected by diverse organisations
 - May add to student's own dataset with increased sample size or range of variables or other time periods.
 - Leads to more representative outcomes.
- Other schools: similar to FSCs.
- Professional organisations, eg Environment Agency, local authorities
 - Similar to FSCs.
 - Data collected more rigorously.
 - Data collected over a longer period of time.
- Census data
 - Support own findings.
 - Compare with own findings.
- Published data in books, documents, web sites: as Census data.
- Possible
 - Newspapers, books, web information: supporting information that helps to set the scene, formulate the strategy, interpret and evaluate the results.
 - Books describing geographical theory: test how well own data meets theory.
 - Derivation of formulae/statistical tests: apply to own data.
 - Maps: locational data; may contain information that explains outcomes.
- Increased sample size and new variables by the school/college.

The following are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the response.
- Discussion relates to the candidate's own investigation.

Level 3 (8-10 marks)

Description of information discussed in **detail**.

Improvements are **relevant/specified**.

Refers to own geographical investigation.

The answer is logically ordered.

Level 2 (5-7 marks)

Description of information discussed **clearly (less detail)**.

Improvements are **likely** to be **relevant/specified**.

May refer to own geographical investigation.

There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Description of information discussed **basically**.

Improvements are **not likely** to be **relevant/specified**.

Unlikely to refer to own geographical investigation.

There are considerable gaps and/or errors in the answer.

Max Level 2 if no reference to own investigation.

2 Study Fig. 1 which shows the strategy developed by a group of 12 students investigating factors affecting rural migration.

With reference to Fig. 1, identify the limitations of this strategy and explain how it could have been improved. [20 marks]

Indicative content – not all points are required to achieve full marks:

Sampling	Systematic sampling. 10 villages varying in size from 300 to 3,000 people. Villages located up to 40 miles from a town with a population of 120,000 people. Villages situated on a mixture of A and B roads.	Does not specify how sampling is established. It is not obviously systematic. If it was systematic, it would not be possible to see whether distance or size is a critical factor as both vary and it is not clear in what way. It is best described as a stratified sample (random or systematic). Direction of villages from town is not established. No reference to local geographical conditions that might influence how sampling is designed, eg rivers, relief. Mixture of road types is vague – more strata to take into account.
Dates, times and types of data collection	7 students working in 5 villages: Wednesday 5 th November 2008 (evening) Door-to-door survey 5 students working in 5 villages: Friday 7 th November 2008 (09:00 – 15:00) On-street survey at village shops and centre of village	Does not specify if students are working together. Does not specify which houses are sampled. Does not say if survey is completed by student or householder. Villages not all sampled at the same time of day. Unlikely to get representative sample at villages sampled during day time. Does not say how people are chosen for on-street survey. Different type of data collection on the different days.
Planned sample size	400. Same number in each village.	Sample not proportional to village size. Optimistic sample size for this number of students. No strategy to deal with risks.
Risk assessment	Being knocked over by cars Mugging	Does not specify how risk is assessed. Lacks detail about strategy to deal with risk.
Additional information to collect	Village services Environmental attractiveness of villages (rating 1 to 5) Village population	Lack detail about classification of services. Need more detail about environmental attractiveness descriptors. Could also have physical geographical factors, eg hills, rivers. Also public transport network. No source of information for village population size. No indication as to how to find out village size as opposed to the parish it lies in.

The following are applied to each level:

- | |
|--|
| <ul style="list-style-type: none">• Level of detail.• Use of geographical terminology.• Clarity of the response.• Discussion relates to the figure. |
|--|

Level 3 (16-20 marks)

Explanation of improvements to strategy discussed **in detail**.

At least 2 relevant limitations.

Refers to figure.

The answer is logically ordered.

Level 2 (8-15 marks)

Explanation of improvements to strategy discussed **clearly (less detail)**.

At least 2 relevant limitations.

May refer to figure.

There are lapses in the logic of the answer.

Level 1 (0-7 marks)

Explanation of improvements to strategy discussed **basically/only one limitation** discussed.

Limited number/irrelevant limitations.

Unlikely to refer to figure.

There are considerable gaps and/or errors in the answer.

3(a) Study Fig. 2 which shows data for two different locations that are being compared in a geographical investigation.

Describe and justify an appropriate way of comparing the data for the two locations using one of the following methods of representation: scattergraph, line graph or bar chart. [10 marks]

You may use a sketch diagram if you wish.

Indicative content – not all points are required to achieve full marks:

- Can consider a different method for each variable.
- Can consider problem of locations having very similar temperature data.
- Need to demonstrate understanding of comparing two locations.
- Most appropriate responses
 - Temperature only line graph of the two sites AND wind speed only bar charts of the two sites. Comparison between locations is justified as both sites placed on a single graph for each variable.
 - Combined temperature line graph and wind speed bar graph for each location. Comparison between sites is justified if use same scale on y axis for each location.
 - Line graphs for both temperature and wind speed for each location. Comparison between sites is justified if use same scale on y axis for each location.
- Acceptable responses
 - Bar graphs for both temperature and wind speed for each location will need adjacent bars for temperature and wind speed for each month: comparison between locations is visually harder to justify, even when y axis scales are the same for each location.
 - Scattergraph of temperature against wind speed for each location. Comparison between sites is justified if a line of best fit is added as a precursor to Spearman. Not ideal as time information is lost.
- Can consider describing overlays of graphs.
- Credit rejection of alternatives.

The following are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the response.
- Discussion relates to the figure.
- Balance of the response between description and justification.

Level 3 (8-10 marks)

Description and justification of chosen method discussed **in detail**.

The answer is logically ordered.

Level 2 (5-7 marks)

Either Description and justification of chosen method discussed **clearly (less detail)**.

Or Description or justification discussed **in detail** and the **other basically**.

There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Description and justification of chosen method discussed **basically**.

There are considerable gaps and/or errors in the answer.

- 3(b) State a question for investigation or a hypothesis that would benefit from being analysed by a test of difference between samples. Describe how you could interpret the outcome and significance of this test. [10 marks]

Test of difference between samples stated by candidate.

Indicative content – not all points are required to achieve full marks:

- Must refer to a difference, eg for Mann-Whitney
 - A question for investigation is stated which makes it clear what variables are being examined. AND/OR
 - H_0 There is no significant difference in light intensity between the coniferous and deciduous forests.
 - H_1 There is a significant difference in light intensity between the coniferous and deciduous forests.
- Meaning of outcome and its significance
 - A test of significance (usually at 95%) is carried out to see whether the difference could have occurred by chance.
 - If the smaller U number is less than critical value in the tables, accept the alternative hypothesis at the specified level of significance, ie there is a significant difference in light intensity between the coniferous and deciduous forests.
 - Refer to direction of difference (where light intensity is greater).
 - If there is a significant difference (eg light intensity in deciduous woods is greater at ground level than in coniferous woods) this suggests they are not identical populations/are drawn from different populations for the purpose of measuring light intensity because, eg, leaf cover and shape of tree allows differing light through to the ground).
- For χ^2
 - H_0 There is no significant difference in soil moisture between the coniferous and rural forest.
- Meaning of outcome and its significance
 - If $\chi^2_{\text{calc}} < \chi^2_{\text{tables}}$, accept the null hypothesis, ie there is no significant difference in soil moisture between the coniferous and deciduous forests at the selected level (usually 95%).

The following are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the response.
- Reference to appropriate geography examples.

Level 3 (8-10 marks)

Statement of question for investigation/hypothesis is **relevant**.

Description of interpretation and significance discussed **in detail**.

Appropriate geographical example referred to.

The answer is logically ordered.

Level 2 (5-7 marks)

Statement of question for investigation/hypothesis is **relevant or partially relevant**.

Description of interpretation and significance discussed **clearly (less detail)**.

Appropriate geographical example may be referred to.

There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Statement of question for investigation/hypothesis is **unlikely** to be **relevant**.

Description of interpretation and significance discussed **basically**.

Question for investigation/hypothesis is **relevant**.

Appropriate geographical example unlikely to be referred to.

There are considerable gaps and/or errors in the answer.

2683 Options in Physical and Human Geography

Group A Options

Answer **one** question from Questions 1 to 10.

Option 1: Coastal Environments

Either

1(a) Describe ways in which sediment moves in the coastal zone. [20]

(b) Explain how beaches with different cross-sections (profiles) result from the interaction of several factors. [25]

(a)

Many will immediately think of longshore drift, which is fine. There are, however, other ways in which sediment moves in the coastal zone. The fundamental processes are also appropriate to describe here.	
AO1+ AO2	<ul style="list-style-type: none"> • sediment movement in water; generally the larger the particle, the more energy is required to pick up + entrain it. Point about the very small calibre sediment being electrically bonded a possible Level 3 indicator in AO2. • types of movement; traction; saltation; suspension – this is a likely Level 3 indicator; solution. • onshore movement including post-glacial sea level rise; tidal currents • offshore movement; tidal currents • longshore movements – point that this is an irregular process a likely Level 3 indicator in AO2. • sediment cells. • sediment movement by wind eg saltation of sand grains – a possible Level 3 indicator in both AOs. • river's moving sediment into coastal zone • human activity eg dredging; beach nourishment
AO3	<ul style="list-style-type: none"> • Level 1 when longshore drift only. • Level 2 when other water borne movements included. • Level 3 when wind borne movements/range of ways included.
AO4	<ul style="list-style-type: none"> • see generic mark scheme.

(b)

A well known topic and much sound knowledge and understanding can be expected. The degree of 'interaction' discussed will help inform AO3.	
AO1+ AO2	<ul style="list-style-type: none"> • wave type – the response must be read with care to determine exactly how a candidate is using a particular term. • high energy waves – tend to have strong backwash relative to their swash and result in wide + flat beaches; one off storm events relevant • low energy waves have a relatively strong swash compared to backwash which produces a steeper profile. • seasonal changes in wave energy – a likely level 2 indicator. • sediment size – relate to angle of rest + percolation rates + water table – a Level 3 indicator. • tidal range + tidal cycle.

	<ul style="list-style-type: none">• role of wind.• human activity.
AO3	<ul style="list-style-type: none">• Level 1 max if only wave energy or sediment calibre.• Level 2 once more than one factor discussed. Where clearly interlinked then Level 3 likely.• Level 1 max where plan only.
AO4	<ul style="list-style-type: none">• see generic mark scheme.

Or

2(a) Describe the inputs, stores and outputs characteristically found in a cliff system. [20]

(b) Explain the effects of changing sea level on coastal landforms. [25]

(a)

The idea of an open system is a fundamental concept in this Option. Here it is applied to the cliff system.	
AO1+ AO2	<ul style="list-style-type: none"> Idea of exchange of energy + materials in + out of the cliff system is important for Level 3 in AO2. Energy inputs – solar, gravity, wind; tectonic change; isostatic+ eustatic change; waves + currents. With no reference to some of these, Level 1 max Material inputs – water from precipitation, run-off + groundwater; sediment (the spec makes explicit reference to the role of weathering + slope processes); geology. Stores – material stored on a cliff + at its base eg scree; soil; water Outputs – energy + materials, water, mass movements, biomass Human activity can be in any element of the system Biotic components eg plants + animals where appropriate.
AO3	<ul style="list-style-type: none"> Level 1 for a simple list of factors. Level 2 when an idea of interlinking included. Level 3 when idea of a system included.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

(b)

The results of sea level change, ie landforms, is a major heading in the spec. The question is clear that landforms resulting from both rising and falling levels are to be considered.	
AO1+ AO2	<ul style="list-style-type: none"> rising – shingle accumulations eg bars, tombolos driven onshore by post-glacial sea rise; drowned valleys – rias/fjords/fiords – latter a possible level 3 indicator; slope-over-wall cliff profiles; fossil forests allow. falling – fossil shore platforms, raised beaches and abandoned cliff lines.
AO3	<ul style="list-style-type: none"> level 1 max. if only rising/falling. quality of link between sea level change and landform will help advise level; level 1 max if no link.
AO4	<ul style="list-style-type: none"> see generic mark scheme.

Option 2: Fluvial Environments**Either**

3(a) Describe the inputs, stores and outputs characteristically found in a river system. [20]

(b) Explain the effects of changes in base level on channel and valley landforms. [25]

(a)

Rivers as open systems is a clear setting for this Option so the idea of the question should be familiar territory to candidates. Candidates can respond in a generic way or might focus their descriptions on a particular river, perhaps as a result of fieldwork.	
AO1+ AO2	<ul style="list-style-type: none"> idea of exchange of energy and materials across a watershed is important for Level 3 in AO2. energy inputs – solar, gravity – possible Level 3 discriminator. material inputs – water from precipitation, run-off + groundwater; sediment (the spec makes explicit reference to the role of weathering and slope processes). stores – sediment and water stores might be mentioned. outputs – energy and materials, load and water for example. human activity can be in any element of the system eg input + output transfer of water across watersheds – possible Level 3 indicator.
AO3	<ul style="list-style-type: none"> Level 1 for just one element. Level 2 for two. Level 3 for all three.
AO4	<ul style="list-style-type: none"> see generic mark scheme.

(b)

'Changes through time' is a major sub-heading within this Option. Disturbances in equilibrium are common in river systems as environmental conditions are rarely stable for long periods of time. Here it is the effects of such change that is the focus.	
AO1+ AO2	<ul style="list-style-type: none"> river terraces – downcutting increased due to climate change eg increased discharge during a wetter period; climate change eg fall in base level during glacial period as sea level fell; isostatic recovery. valley-in valley – same reasons as above. knick points, rapids + waterfalls – same reasons as above. canyons – tectonic uplift eg Grand Canyon carved c. 2km in c. 6 million years. incised meanders both entrenched (entrenched) + ingrown – fall in base level often associated with tectonic change.
AO3	<ul style="list-style-type: none"> inclusion of aggradation features a likely Level 3 indicator both in past times eg as glacial period ended and currently with rising sea levels due to climate change today. mention of tectonic change a likely Level 3 indicator. bottom of Level 2 if only one of long profile/cross profile included.
AO4	<ul style="list-style-type: none"> see generic mark scheme.

Or

4(a) Describe typical downstream changes in channel shape. [20]

(b) Explain how variations in river regime result from the interaction of several factors. [25]

(a)

Channel shape is adjusted to carry maximum discharge + sediment from upstream. The question allows both cross-section + planform to be considered.	
AO1+ AO2	<ul style="list-style-type: none"> generally depth + width increase. Level 3 indicator might be mention of width increasing more rapidly than depth in general. braiding found in a variety of locations. changes in bed roughness – a likely Level 3 indicator. changes in plan relevant – sinuosity; deltas pool + riffle patterns appropriate rapids + waterfalls
AO3	<ul style="list-style-type: none"> an equal treatment of cross-section and planform not required but omission of one Level 1 max. No link between changing shape and different locations along river's course, Level 1 max.
AO4	<ul style="list-style-type: none"> see generic mark scheme.

(b)

Annual flow regimes are explicitly mentioned in the Option in the sub-heading inviting candidates to study variations on flow patterns. Sketch graphs of regime patterns would be useful and can receive a consideration under AO4.	
AO1+ AO2	<ul style="list-style-type: none"> variations in input eg monsoon; snow/ice melt; high intensity rainfall in semi-arid + arid regions. variations in stores and processes within the basin eg geology; land-use. human activity eg role of dams + reservoirs; abstraction.
AO3	<ul style="list-style-type: none"> level 2 once more than one factor discussed. Where clearly interlinked then level 3 likely. a shopping list approach which simply lists the factors restricts response to bottom of Level 2. level 1 if regime not the focus ie a response based upon a short term hydrograph.
AO4	<ul style="list-style-type: none"> see generic mark scheme.

Option 3: Glacial and Periglacial Environments**Either**

5(a) Describe the landforms and landscapes characteristic of periglacial environments. [20]

(b) Explain how the distinctive climate in periglacial environments affects the weathering and slope processes commonly operating there. [25]

(a)

Periglacial landforms and landscapes are a key element in this Option. We should be aware of the assessment potential contained within any diagrams offered as part of the response.	
AO1+ AO2	<ul style="list-style-type: none"> • Ground ice – a collective term for all bodies of ice in areas of permafrost. Responses that draw attention to the variety of forms of ground ice give an indication of top Level 2/ bottom of Level 3 depending on the quality of the description. • Soil ice including needle ice and ice filling pore spaces. • Ice wedges. • Pingos, both open and closed system. • Thermokast. • Patterned ground. • Slope forms. • Valley forms eg asymmetric.
AO3	<ul style="list-style-type: none"> • Level 3 for those attempting both landscape and landforms. • Level 2 for the mention of either landscape or landforms. • Level 1 for those focussing on processes to the exclusion of landscape/landform.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

The highly seasonal nature of the climate is the key factor here. The alternating cycles of freeze and thaw need to be clearly related to weathering + slope processes.	
AO1+ AO2	<ul style="list-style-type: none"> • Intense cold of c. 8 months leads to formation of permafrost; c. 3/4 months of > 0°C – frost cracking + frost heave. • Frost shattering – needs to be clearly explained in terms of cycles +/- 0°C a possible Level 2 indicator. • Role of solifluction + gelifluction associated with thawing of top layer – some idea of rate of movement (1-10 cm/yr) might indicate a Level 3 response. • Asymmetric valleys a useful context here eg seasonal thawing of south-facing slope. • Sheetwash + fluvial processes associated with summer melt.
AO3	<ul style="list-style-type: none"> • A simple listing of the weathering + slope processes not linked with climate – bottom of Level 2. • Need not be equal treatment of weathering/slope processes but omission of one top of Level 1 max.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Or

6(a) Describe the landforms resulting from glacio-fluvial processes. [20]

(b) Explain how glacial landforms are influenced by rock type. [25]

(a)

A topic familiar to candidates. The focus here is the landforms not the processes.	
AO1+ AO2	<ul style="list-style-type: none"> • Outwash plain/sandur - extensive accumulations of gravel, sand + silt crossed by braided streams – latter point a likely Level 3 indicator. • Kame + kame terrace – kame steep sided ridge or conical hill of bedded (Level 3 indicator) material from crevasse-filling. When lowered by ice melting, bedding becomes chaotic. Kame terrace – flat-topped feature composed of bedded sediments. Usually located between valley glacier + valley side. • Esker – narrow sinuous ridge of partly stratified coarse sand + gravel. • Varves – thin laminar beds of sediment. Coarser sediment alternates with finer.
AO3	<ul style="list-style-type: none"> • Ideas of scale likely to indicate Level 3 response. • Focus on processes of formation Level 1 max.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

The influence of rock type is explicitly mentioned in the Spec. and this question asks for clear links to be made between rock type and glacial landforms. Rock type can include any geological aspect such as structure or chemical composition for example.	
AO1+ AO2	<ul style="list-style-type: none"> • Internal strength of rock – influence how steep post-glacial slopes can be eg particularly massive granites of Yosemite valley, California allow 700+ metre sheer valley sides. • Rock structures eg faults/jointing patterns influence direction of erosion eg corrie orientation; ribbon lake formation. • Presence of a more resistant rock in a valley can lead to roche moutonnée; crag + tail; knock + lochan; rock steps. • Rock type an ice sheet crosses can influence the boulder clay deposited eg chalk ridge crossed by ice sheets en route into East Anglia gives rise to chalky boulder clay. • Frozen chalk rendered impermeable. • Influence of rock type on pre-glacial landscape as much of the work of ice is modification of fluvial landscape – a Level 3 indicator.
AO3	<ul style="list-style-type: none"> • Top of Level 2 minimum if the link between rock type and landform emerges clearly. • Top of Level 1 if there is no link established. • Level 2 can be awarded once response includes material about rock type in the context of glaciation but where links tend to be implicit.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Option 4: Hot arid and Semi-arid environments**Either****7(a) Describe sand dune landscapes found in hot arid and semi-arid environments. [20]****(b) Explain how the distinctive climates in hot arid and semi-arid environments affect the weathering processes commonly operating there. [25]****(a)**

The popular image of a desert as a 'sea of sand', the classic erg, is misleading; nevertheless extensive areas of 'sand dune landscape' the term in the Spec. can be found. Indications of scale are likely to indicate a Level 3 responses in AOs 1 + 2.	
AO1+ AO2	<ul style="list-style-type: none"> Ergs – from Arabic and referring to an extensive area (>125 km²) of sand. Some are vast eg Rub'al Khali, Saudi Arabia 560 000 km². A wide variety of dune forms can be described here; <ol style="list-style-type: none"> barchan – crescent shaped, horns pointing downwind, height 1 – 30m. seif/linear – long, straight ridge parallel to wind direction. Up to 100m high and 100 km long. parabolic – U-shaped with open end of U facing upwind. Variable in scale. star – isolated hill resembling a star in plan. Ridges converge from basal points to central peak up to 100m high. transverse – asymmetric ridge up to 50 km long and up to 70m high. Parallel ridges about 1-2 km apart. Ripples – small scale features at right angles to prevailing wind direction. 1 to 500 mm high; allow as they are often found with sand dune systems.
AO3	<ul style="list-style-type: none"> Level 1 with no reference to dunes. Level 2 once three types of dunes are mentioned. Level 3 when ergs and dunes are described.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

(b)

Weathering processes are a key factor in understanding deserts and clearly have a close relationship with climate. Here the candidates are explicitly invited to consider the role of the desert climate in influencing the weathering processes typical of such regions.	
AO1+ AO2	<ul style="list-style-type: none"> Thermal fracture – cracking of rocks due to rapid changes in temperature across wide diurnal range. Exfoliation/insolation – breaking, splitting and peeling off of outer rock layers due to changes in temperature. Freeze thaw – relate to cycles of temp +/- 0°C; also some desert areas at relatively high altitude – a possible Level 3 indicator. Chemical weathering – relate to availability of water. Mention of previous climates a possible Level 3 indicator in AO2.
AO3	<ul style="list-style-type: none"> Response based on erosional processes will not get out of Level 1. Response focussed only on weathering processes with no link to climate limited to bottom of Level 2. Response making clear effort to link climate with weathering processes likely to reach Level 3.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

Or

8(a) Describe the influence of extreme temperature and high aridity on animals living in hot arid and semi-arid environments. [20]

(b) Explain how land degradation in hot arid and semi-arid environments results from the interaction of several factors. [25]

(a)

The Spec. mentions the adaptation of animals to extreme temperatures, physical and physiological drought.	
AO1+ AO2	<ul style="list-style-type: none"> • Various mechanisms to reduce water loss eg impervious outer skeletons of insects and arachnids. • Greater cooling eg desert fox and hare have large ears giving an extended cooling surface. • Avoidance of direct heat, known as estivation eg burrowing rodents. • Avoidance of surface heat eg 'dancing' lizards; insects that jump into vegetation for short periods of time. • Changing skin colour to reflect more heat during the day eg some snakes. • Camels. Lips, eyelashes, feet, food storage. Contrast between Arabian and Bactrian camels of central Asia a likely indication of Level 3.
AO3	<ul style="list-style-type: none"> • A simple listing of animal characteristics restricted to Level 1. • Need to link adaptation with the environment for Levels 2 + 3. • Contrasts between adaptations of semi-arid and arid likely to indicate Level 3.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

This is a complex topic but the use of 'interaction' steers candidates towards discussing a variety of factors. A combination of physical and human factors has the potential to take a response to the top of Level 3.	
AO1+ AO2	<ul style="list-style-type: none"> • Land degradation is process by which soil becomes less productive as a result of both physical factors eg drought and human factors eg overgrazing. • Human intrusion into these environments has increased over the past few decades eg pop. growth + tourism + recreation. • Dynamic equilibrium of these environments is easily disturbed as positive feedback takes over, accelerating change that can lead to degradation. • Desert pavements + crusts very fragile; once broken, finer materials eroded + transported by wind (especially flatter areas) + water leading to gully formation. • Over-grazing. • Over-cultivation. • Misapplication of irrigation techniques leading to salinisation. • Impacts of global climate change attributed to enhanced greenhouse effect.
AO3	<ul style="list-style-type: none"> • With either physical/human only, bottom of Level 2 max. • Separate lists of factors bottom of Level 2. • Response making clear effort to discuss interaction likely to be at top of Level 2+ • Contrasts in severity of degradation likely to be a Level 3 indicator.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Option 5: Applied Climatology**Either**

9(a) Describe the contrast in energy budgets between urban areas and their surrounding rural areas. [20]

(b) Explain the influence of city size on urban-rural climatic contrasts. [25]

(a)

Contrasting energy budgets are explicitly mentioned in the Spec. A systems approach might be the most secure framework for a response but candidates may reasonably use other approaches.	
AO1+ AO2	<ul style="list-style-type: none"> The basic surface energy budget is relevant here ie $R_n = LE + H + G$ where R_n is net radiation, LE is latent heat transfer, H is sensible heat transfer and G is ground heat flux. Without some basic idea of the energy budget then Level 1 is the maximum. Key point is the heat production resulting from human energy consumption by combustion in urban areas. This can exceed R_n during winter in some cities. Heat storage by surfaces is greater leading to greater nocturnal values of H; LE in city centres tends to be much less. The lack of LE means that by day some 70-80% of R_n is transferred to the atmosphere as sensible heat. Within urban areas energy is reflected off more surfaces before finally leaving the terrestrial environment and so more absorption occurs c.f. rural areas where outgoing radiation soon escapes into the atmosphere. Within urban areas the energy balance varies with altitude and aspect so that there can be striking contrasts even within one street. Such comments are likely to indicate a Level 3 response.
AO3	<ul style="list-style-type: none"> A response based solely on either urban or rural area will not rise above Level 1. Either inputs or outputs only restricts the response to level 1.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

(b)

Part of the urban climates section in this Option requires candidates to look at the influence of city size on rural – urban contrasts.	
AO1+ AO2	<ul style="list-style-type: none"> Larger urban areas tend to have a more pronounced heat island effect, especially under winter anti-cyclonic conditions. Higher temperatures associated with larger urban areas lead to lower local air pressure drawing in air from surrounding areas. Higher temperatures associated with larger urban areas lead to increased instability; increased energy in thunderstorm activity. Larger urban areas tend to produce more condensation nuclei and so higher precipitation might result.
AO3	<ul style="list-style-type: none"> With no contrast clear between urban and rural level 1 is the maximum. With comments about the size of the urban area top of level 2 is likely as a minimum.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

Or

10(a) Describe the climatological and meteorological factors that contribute to air pollution. [20]

(b) Explain how major air pollution episodes cause a variety of problems for humans. [25]

(a)

This pair of factors are explicitly mentioned in the Spec.	
AO1+ AO2	<ul style="list-style-type: none"> • Temperature including lapse rates and inversions; mention of pressure systems valid. • Wind – as regards directional spread of pollution and in relation to concentration of pollutants. Pressure systems relevant. • Precipitation – acid rain.
AO3	<ul style="list-style-type: none"> • Level 1 if no reference to either climatological or meteorological factors. • There need not be an equal treatment of both meteorological and climatological but the minimal reference to one will limit to Level 2.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

Air pollution is a major sub-heading within this Option. The human problems associated with air pollution are explicitly stated in the Spec. and there is a wide variety of material that could be included here. Either a breadth or depth approach are valid here.	
AO1+ AO2	<ul style="list-style-type: none"> • Air quality – health issues eg asthma. • Air quality – loss of economic productivity with people off work. • Air quality – children not at school. • Air quality – disruption of communications eg airport closure; visibility problems for drivers. • Credit reference to acid rain. • Credit reference to spread of radio-active material. • Focus on global warming likely to indicate only Level 1.
AO3	<ul style="list-style-type: none"> • Level 1 max if no reference to specifically human problems. • Level 1 max if focus is on remedies to air pollution. • Level 2 max if actual episodes ignored.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Group B Options

Answer **one** question from Questions 11 to 18.

Option 6: Agriculture and Food

Either

11(a) Describe the contrasting distribution of malnutrition and overnutrition at the global and regional scales. [20]

(b) Explain the advantages and disadvantages of food aid for receiving countries. [25]

(a)

The pattern of nutrition is the focus here; the two types identified in the question are explicit in the Spec.	
AO1+ AO2	<ul style="list-style-type: none"> Malnutrition – lack of adequate nutrition caused by an unbalanced diet. Widespread amongst LEDCs but also among the poorer socio-economic groups in MEDCs – a point likely to indicate a Level 3 response. Where there is an effective description that draws attention to the diversity in the pattern of nutrition among the LEDCs ie Latin America and Asia c.f. sub-Saharan Africa, this is a likely indication of Level 3. Undernutrition is a recognised term and can be allowed here – a possible Level 3 indicator. It's caused by too little food that can ultimately lead to death by starvation. FAO identify this as when people who do not consume enough food to maintain their body weight. In this respect the conditions in sub-Saharan Africa stand out. Overnutrition – caused by too much food. A feature of parts of the MEDCs in particular. Level 3 responses might point out contrasts such as Eastern Europe c.f. Western Europe.
AO3	<ul style="list-style-type: none"> Need not be equal treatment of global + regional but omission of one restricts response to Level 2. Need not be equal treatment of mal and overnutrition but omission of one restricts response to Level 1.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

(b)

Food aid is explicitly mentioned in the Spec. The focus here is on two sides of the argument.	
AO1+ AO2	<ul style="list-style-type: none"> Short-term emergency relief simply to keep people alive. Not a long-term solution to problem of food supply. Cheap foreign imports can undermine local agriculture. Receiving country can become dependent on food aid. Can lead to inappropriate agricultural systems developing eg Nigeria's 'wheat' trap. India's Operation Flood as a qualified success.
AO3	<ul style="list-style-type: none"> Need not be equal treatment of disadvantage/advantage but omission of one restricts response to Level 2. Comments about donor countries irrelevant. Comments about non-food aid irrelevant. Comments about intra-national variations a possible Level 3 indicator.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

Or

12(a) Describe farming techniques designed to overcome hydrological difficulties. [20]**(b) Explain the influence of the market on agricultural systems. [25]****(a)**

Manipulations of the environment is a significant element in the Option. Here it is hydrology, the term used in the Spec., which is the focus. Either a 'breadth' or 'depth' approach is valid here. There might be some helpful exemplification from fieldwork.	
AO1+ AO2	<ul style="list-style-type: none"> • Drainage – variety of techniques possible. • Irrigation – variety of techniques possible. • Appropriate choice of farming enterprise eg type of crop. • Terracing of steep slopes. • Stone walls along contours in Sahel.
AO3	<ul style="list-style-type: none"> • For Level 2+ the focus must be on farming techniques. • Level 1 when all that is described are dams and their associated canals.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

Under the heading 'the influence of human factors' the market is explicitly mentioned. The market can be seen not just as a point in space but also in terms of consumer demand.	
AO1+ AO2	<ul style="list-style-type: none"> • Classic von Thünen patterns but must have the focus on agricultural systems. Sinclair's modification a possible Level 3 indicator. • Increased affluence – decreasing demand for basic foodstuffs especially those needing preparation: increasing demand for processed and convenience foods. This can lead to changes in varieties grown or reduction in certain crops in total. • Changing taste – eg less liquid milk and more processed in particular yoghurts; increase in chicken consumption and decline in beef. • Increasing preference for organic foods; changing farm enterprises. • Increased ability to pay for foods out of season in one location eg UK influences change at locations where crops can be grown eg strawberries from Spain. • Comments about subsidies eg CAP appropriate if related to market; a likely Level 3 indicator in AO2.
AO3	<ul style="list-style-type: none"> • Link with agricultural systems needs to be made for Level 2+; simple description of 'market' leaves response at bottom of Level 2. • Changing preferences rather than simply economic factors are possible Level 2+ indicators.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Option 7: Manufacturing Industry: Location, Change and Environmental Impact**Either**

13(a) Describe ways in which government policies can influence manufacturing locations.
[20]

(b) Explain how the growth of manufacturing influences the development of core and peripheral regions.
[25]

(a)

The locational influence of governments and governmental policies are a major heading within this Option. The focus here is on description of these policies.	
AO1+ AO2	<ul style="list-style-type: none"> • Different types of government eg command; free market; mixed. • Scale of government eg supra-national - EU, national and regional/local. • Direct measures – regional policies including financial aid; state ownership of industry – responses that go beyond the command economies or nationalised industries in Western Europe, often now ‘former’, to the state industries of NICs such as South Korea, Pohang Iron and Steel for example are likely to be at Level 3 in AO1 and 2; tariff protection. • Indirect eg macro-economic fiscal measures eg currency support; infrastructure developments eg Severn Bridge crossings; educational programmes eg in many LEDCs; these are likely to be a Level 3 indicator in both AO1+2.
AO3	<ul style="list-style-type: none"> • Level 1 when link between policy and industrial location is not made. • Level 2+3 when link is clear.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

This sub-part focuses on the link between manufacturing growth and the development of core and peripheral regions. An entirely theoretical response is possible but appropriate exemplar material will enhance an answer.	
AO1+ AO2	<ul style="list-style-type: none"> • Starting point is the location of a new industry in a region. • End result is the emergence of a core region with strong agglomeration economies. • Cumulative causation works against peripheral regions. • Resources eg labour, investment attracted to the core as backwash effects set in and local industries decline under competition from the core. • Reference to historical examples valid eg emergence of textiles. Lancashire + Yorkshire in late 18th + early 19th centuries. • Cores and peripheries mentioned on a world scale a likely Level 3 indicator.
AO3	<ul style="list-style-type: none"> • Top of Level 1 max where link between industrial growth and core/periphery not made. • There need not be an equal treatment of both core and periphery but the omission of one restricts response to bottom of Level 2.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Or

14(a) Describe the impact of Foreign Direct Investment (FDI) on manufacturing locations in MEDCs. [20]

(b) Explain how and why the influence of transport on manufacturing locations has changed. [25]

(a)

FDI is a well known influence on manufacturing and here the focus is on its role in MEDCs.	
AO1+ AO2	<ul style="list-style-type: none"> • Can aid reinvestment and reindustrialisation of regional and national economies suffering from deindustrialisation eg North-east England/South Wales. • Can invest in areas outside traditional manufacturing locations eg growth of high-tech along M27 corridor; western Thames corridor. • Can speed up deindustrialisation when TNC takes over a firm and rationalises. • Can be dominated by branch plants and so more likely for closure when recession occurs.
AO3	<ul style="list-style-type: none"> • Level 1 when link between FDI and industrial location is not made. • Level 2+3 when link is clear.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

Transport is one of the key industrial location factors and has undergone substantial change both in modes of transport but also in costs and capacities.	
AO1+ AO2	<ul style="list-style-type: none"> • Transport capacity eg use of pipelines; containers; VLCCs has given greater flexibility for some manufacturing; reinforced some locations eg pipeline from Ekofisk to Tees-side; diminished others eg London docks. • Changing economies of scale especially sea transport reinforced role of tidewater for break of bulk operations; also aided industrial growth in some LEDCs and NICs. • Improvements in road transport increased footloose nature of some industries. • Improvements in road, rail + sea aided rationalisation. • Greater use of road allowed non-traditional rural and semi-rural in MEDCs a possible level 3 indicator.
AO3	<ul style="list-style-type: none"> • Simple description of transport costs unlikely to rise above top of Level 1. • Level 2+3 for those making determined effort to link transport changes with industrial locations. • Mention of different types of location likely to be not less than bottom of Level 2.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Option 8: Service Activities: Location, Change and Environmental Impact**Either**

15(a) Describe the advantages of out-of-town locations to both retailing and office services. [20]

(b) Explain how decentralisation of service activity can have social, economic and environmental impacts. [25]

(a)

Retailing and office location out-of-centre is a major heading within the Option. The focus is on description of the advantages for the services of such locations.	
AO1+ AO2	<ul style="list-style-type: none"> • Cheaper land. • More space – gives greater flexibility in layout. • Modern buildings more conducive to current methods of organisation _ operation eg economies of scale. • Access to trunk roads; aids deliveries + access for customers + employees.
AO3	<ul style="list-style-type: none"> • Level 1 if focus not the services. • Level 2 for one of retailing/offices. • Level 3 when both are considered.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

Within the same heading these three categories of impacts are explicitly mentioned.	
AO1+ AO2	<ul style="list-style-type: none"> • Social – disadvantage to some groups due to restrictions in mobility; advantage to groups living close to decentralised services. • Economic – loss of income to central areas; gain in income to peripheral areas. • Environmental – dereliction in central areas; loss of greenfield areas on periphery; allow for examples of brownfield redevelopment in periphery;
AO3	<ul style="list-style-type: none"> • Level 1 when only one of the three is discussed. • Level 2 when two or more are discussed. • Level 2 when both retail and offices discussed.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

Or

16(a) Describe the principles of central place theory. [20]

(b) Explain how retail patterns can be influenced by Information Technology (IT) and by the role of shopping as a leisure activity. [25]

(a)

An underlying theory to much of the study of services. The key assessment is the description of the principles.	
AO1+ AO2	<ul style="list-style-type: none"> Numbers of central places – at each successive order there is a 3x increase in the number of settlements. Spacing of central places – at each successive order there is a $\sqrt{3}$ times increase in distance between settlements of the same order; indication of increase in market area, nesting, a likely level 3 indicator. Numbers of services – increases proportionately to population but number of different types of services tends to be a logarithmic relationship. A likely Level 3 indicator. Creation of hierarchy. Comments about range and threshold valid.
AO3	<ul style="list-style-type: none"> Level 1 for simply numbers of central places. Level 2 when numbers of central places plus another aspect included. Level 3 when description adds another dimension.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

(b)

The need here is for a link to be established between retail patterns and these two recent factors.	
AO1+ AO2	<ul style="list-style-type: none"> People spending most of a day at a retail location lead to large scale agglomerations of retailers often at edge of town sites. Development of regional shopping centres eg Bluewater/Metro Centre which include not only retailers but also a variety of food retailers and leisure facilities such as cinemas/gyms. In some urban areas inner areas have been revitalised with a combination of retailing and leisure activities eg Albert Dock Liverpool; Baltic Exchange Gateshead. IT – development of internet retailing reduces need for customers to visit stores in person. Can be linked with home delivery that now extends to food. This trend also tends to fuel growth of national and trans-national retailers and reduce viability of independent smaller scale retailers.
AO3	<ul style="list-style-type: none"> Need not be an equal treatment of both IT and leisure but the omission of one leaves response at bottom of Level 2. Omission of patterns restricts to top of Level 1.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

Option 9: Tourism and Recreation and their Environmental Impacts**Either****17(a) Describe social and economic impacts of tourism on LEDCs. [20]****(b) Explain how the development of seaside resorts in MEDCs has been influenced by changing social and economic conditions. [25]****(a)**

Under the 'International tourism' heading, economic and social impacts are explicitly mentioned.	
AO1+ AO2	<ul style="list-style-type: none"> Social – loss of indigenous culture or its commercialisation; possible to argue that demand from tourists for indigenous culture aids its survival; tourism tends to be labour intensive so offers employment – also an economic point. Economic – foreign currency earnings aiding balance of payments; inward investment funds capital developments; local multiplier effect; leakage; vulnerable to sudden changes eg terrorism + fashion change; seasonal employment; much employment often poorly paid.
AO3	<ul style="list-style-type: none"> There need not be an equal treatment of both economic and social but the omission of one restricts the response to Level 1. Level 1 if MEDCs are the focus. Level 3 likely if both positive and negative impacts are included.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

(b)

The context is clear, seaside resorts in MEDCs. Candidates must deal with changes in social and economic and link these clearly with seaside resorts.	
AO1+ AO2	<ul style="list-style-type: none"> Economic – reduced costs of pleasure travel by train although initially train companies failed to appreciate market for low-cost tourist travel. Decline linked to cost of air travel relevant. Economic – at first the higher disposable income of the rich allowed them to participate; later, 1880s + 90s, growth in disposable income of working class + co-operative/friendly societies saving accounts allowed many to save and afford a holiday – a Level 3 indicator. Comments about C20th developments appropriate eg holiday camps in terms of affordability eg Minehead. Social - filtering down of tourism following trend set by aristocracy + upper classes in resorts eg Brighton + Weymouth; tourism as fashion. Social – industrialisation helped create new + prosperous middle class inclined to imitate habits of upper class. Social – last quarter of 19th century working class able to join trend; Bank Holidays Act 1871; helped promote some of the eastern resorts eg Skegness as railway network developed.
AO3	<ul style="list-style-type: none"> Level 1 if other than seaside resorts in MEDCs. There need not be an equal treatment of both economic and social but the omission of one restricts the response to bottom of Level 2. Bottom of Level 2+ once there is a clear link made between the change and seaside resorts.
AO4	<ul style="list-style-type: none"> See generic mark scheme.

Or

18(a) Describe changes in transport technology that have influenced the development of tourism. [20]

(b) Explain the recent growth of ecotourism and urban-based tourism. [25]

(a)

The role of changes in transport technology in the development of tourism is a strong theme in this Option.	
AO1+ AO2	<ul style="list-style-type: none"> • 19th century – role of railways. Accuracy regarding the timing of railway developments can be rewarded in AO1. Shortening of journey time + reduction of travel cost are likely to indicate a Level 3 response in AO2. • Internal combustion engine and its application in particular to private transport begins in the inter-war period for the higher socio-economic groups. Post war the impact is most clearly felt in continuing attraction of sea-side locations in 1950s and 60s. • Growth of private car ownership and developments of transport infrastructure eg m-ways encourage tourism to rural areas. • Growth of air travel has contributed to decline of traditional sea-side domestic tourism but growth of regions such as Costas; also growth in locations such as East Africa + Far East + North America. • Cruise liners.
AO3	<ul style="list-style-type: none"> • A link between transport change and tourism needs to be established for Levels 2+3. • Distinction between domestic and international tourism a possible Level 3 indicator.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

(b)

These two categories are relatively new elements within the tourist industry although the 'Grand Tour' included many urban destinations. Eco-tourism is a product of the late 20 th and 21 st centuries.	
AO1+ AO2	<ul style="list-style-type: none"> • Both benefit from increased disposable income; urban as many people are able to afford a mini-break as well as a longer summer holiday; eco as people can afford the higher cost of these holidays often in relatively remote locations. • Increased awareness – both urban + eco-tourism. • Fashion – both urban + eco-tourism. • Urban based mini-breaks benefit from changes in ways of booking trips eg use of IT for last minute deals. • Advertising – both urban + eco-tourism. • Increased personal mobility – both urban + eco but in different ways.
AO3	<ul style="list-style-type: none"> • There need not be an equal treatment of both urban and eco-tourism but the omission of one restricts the response to bottom of Level 2. • Simple descriptions of examples omitting reasons, bottom of Level 2.
AO4	<ul style="list-style-type: none"> • See generic mark scheme.

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GENERIC ASSESSMENT CRITERIA

1 Knowledge of content (0-8 marks)

Level 4	Candidates have detailed knowledge of appropriate themes, processes and specific environments and places. They have detailed knowledge of relevant concepts, principles and theories, and of a wide range of geographical terms. They have detailed knowledge of the connections between different aspects of geography represented in the specification.	7-8 marks
Level 3	Candidates have clear knowledge of appropriate themes, processes and specific environments and places. They have clear knowledge of relevant concepts, principles and theories, and of a range of geographical terms. They have clear knowledge of the connections between different aspects of geography represented in the specification. There must be evidence of synoptic connections with other parts of the specification to achieve more than level 2.	5-6 marks
Level 2	Candidates have sound knowledge of some appropriate themes, processes and specific environments and places. They have sound knowledge of some relevant concepts, principles and theories, and of some geographical terms. They have sound knowledge of some connections between different aspects of geography represented in the specification.	3-4 marks
Level 1	Candidates have basic knowledge of some appropriate themes, processes and environments and places. They have basic knowledge of some relevant concepts, principles, theories, and geographical terms. They have basic knowledge of some connections between different aspects of geography represented in the specification.	0-2 marks

2 Critical understanding of content (0-22 marks)

Level 4	Candidates have detailed critical understanding of the content of the specification and have detailed critical understanding of the connections between the different aspects of geography represented in the specification.	18-22 marks
Level 3	Candidates have clear critical understanding of the content of the specification and have clear critical understanding of the connections between the different aspects of geography represented in the specification. There must be evidence of synoptic connections with other parts of the specification to achieve more than level 2.	12-17 marks
Level 2	Candidates have sound critical understanding of some of the content of the specification and have sound critical understanding of some of the connections between the different aspects of geography represented in the specification.	6-11 marks

Level 1	Candidates have basic critical understanding of some the content of the specification and have basic critical understanding of some connections between the different aspects of geography represented in the specification.	0-5 marks
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3 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)*

Level 4	Candidates apply their knowledge and critical understanding of the specification content and connections to different aspects of geography represented in the specification, relevantly and where appropriate at a range of scales. They evaluate arguments, ideas, concepts and theories in detail.	18-22 marks
Level 3	Candidates apply most of their knowledge and critical understanding of the specification content and connections to different aspects of 12-17 geography represented in the specification, relevantly and where marks appropriate at a range of scales. They evaluate arguments, ideas, concepts and theories clearly. There must be evidence of synoptic connections with other parts of the specification to achieve more than level 2.	12-17 marks
Level 2	Candidates apply some of their knowledge and critical understanding of the specification content and connections to different aspects of 6- geography represented in the specification, relevantly. They attempt a marks basic evaluation.	6-11 marks
Level 1	Candidates explain contexts using basic ideas and concepts.	0-5 marks

*** Maximum 11 marks for application and 11 marks for evaluation**

4 Communication (0-8 marks)

Level 4	Candidates use an appropriate range of communication skills fluently and in different formats; present information within a logical and coherent structure; where appropriate, synthesise information from a variety of sources; use spelling, punctuation and grammar with a high level of accuracy; and employ geographical terminology with confidence.	7-8 marks
Level 3	Candidates use an appropriate range of communication skills clearly in different formats; present information within an effective structure; use spelling, punctuation and grammar with accuracy; and use a range of geographical terms.	5-6 marks
Level 2	Candidates use a limited range of methods to communicate knowledge and understanding; make some effort to structure their work; and use spelling, punctuation and grammar with some accuracy; and have a basic knowledge of geographical terminology.	3-4 marks
Level 1	Candidates use a limited range of methods to communicate knowledge and understanding; make only a basic attempt to structure their work; use spelling, punctuation and grammar with variable accuracy, and have only sparse knowledge of geographical terminology.	0-2 marks

Option 1: Geographical Aspects of the European Union

1. **‘Economic development in peripheral areas of the EU has been at the expense of the core.’ How far do you agree with this statement?** [60]

‘Peripheral’ may be seen geographically or in the social or economic sense. Areas could be regions or smaller areas such as part of a city – the economic or social periphery.

This invites backwash v spread type discussion.

It is acceptable to take the reverse of this argument – if entirely this then max top L3 in AO3.

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of the economic development of one or more peripheral areas. Clear knowledge of the causes of this development and its relationship with the development of the core is expected. Knowledge of appropriate models can be expected eg Myrdal. There should be detailed exemplification.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the economic development of one or more peripheral areas. Knowledge of the causes of this development and some of its relationship with the development of the core is expected. Appropriate models may be known. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the economic development of one or more peripheral areas. A limited knowledge of the causes of this development and some of its relationship with the development of the core is expected. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of some of the economic development of one or more peripheral areas. A limited, or inaccurate, knowledge of the causes of this development is likely. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of the inter-relationship of peripheral areas and the core. This may be underpinned by an effective use of concepts eg core-periphery or theories to explain the relationship of differences in regional development in the EU. Cause and effect of economic developments on the two types of area will be clear.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the inter-relationship of peripheral areas and the core. This may be underpinned by use of concepts eg core-periphery or theories to explain the relationship of differences in regional development in the EU. Cause and effect of economic developments on the two types of area may be limited.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the inter-relationship of peripheral areas and the core. Some attempt will be made to explain the relationship of differences between core and periphery in the EU. Cause and effect may be very limited or unclear.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between the core and peripheral areas.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of the inter-relationship of peripheral areas to the core to offer a detailed evaluation of the statement. Candidates at this level may argue that this varies with location (and its characteristics) scale (local, regional, national), type of periphery, with time/development. At this level candidates should appreciate this relationship is both dynamic and two-way and that 'expense' could be economic, social, environmental and political. There will be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of the inter-relationship of peripheral areas to the core to offer an evaluation of the statement. Candidates at this level may argue that this varies with location (and its characteristics) and with time/development. At this level candidates should appreciate this relationship is dynamic and that 'expense' could be seen in economic terms or in other ways. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of the inter-relationship of peripheral areas to the core to offer a limited evaluation of the statement. At this level candidates should appreciate this relationship is dynamic or changes over time. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the inter-relationship of peripheral areas to the core to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

2. **Evaluate the effectiveness of strategies used to manage issues arising from rapid growth in ONE named region in the EU.** [60]

This is not about problem regions as such but about the issues – environmental, economic, social and political – resulting from rapid growth. Growth could be economic or in terms of population.

If no named region then max top of level 2

A01 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)

Candidates will have detailed knowledge of a named region experiencing rapid growth and a range of the resulting problems (physical, economic, social and political) and the variety of strategies being used to tackle them - (these could include: immediate and longer term, direct and indirect, environmental v political v economic, central v local etc.) by the EU and other agencies/sources is expected. A knowledge of appropriate models and/or concepts can be expected eg multiplier, backwash etc. There should be detailed exemplification.

Level 3 (5-6 marks)

Candidates will have clear knowledge of a named region experiencing rapid growth and the resulting problems and the strategies being used to tackle them by the EU and other agencies is expected. A knowledge of appropriate models and/or concepts can be expected. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of a named region experiencing rapid growth and the resulting problems and some of the strategies being used to tackle them by the EU and other agencies is expected. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of a named region experiencing rapid growth and few of the resulting problems and the strategies being used to tackle them by the EU. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)

Candidates will demonstrate detailed understanding of the cause-effect of rapid growth in one region and a range of the resulting problems (economic, demographic, social, political and environmental). A detailed understanding of the effectiveness of the types of strategies used to deal with the problems in such areas can be expected.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of rapid growth in one region and a variety of the resulting problems. Clear understanding of the effectiveness of the types of strategies used to deal with the problems in such areas can be expected.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of rapid growth in one region and some of the resulting problems. A limited understanding of the effectiveness of the types of strategies used to deal with the problems in such areas can be expected.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the cause-effect of rapid growth in one region and a few of the resulting problems. A limited or inaccurate understanding of the effectiveness of the types of strategies used to deal with the problems in such areas can be expected.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of the causes of rapid regional growth and the range of remedial strategies to offer a detailed evaluation of their effectiveness in reducing the resulting problems for the region and in the wider EU context. They may also effectively show how EU responses may be helping or hindering the solution of these problems. Candidates may recognise that the effectiveness will vary with scale, time, location eg remote v less remote, and with the scale/type of problem. At this level candidates can be expected to recognise that the view of their effectiveness may vary between groups in the community. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of the causes of rapid regional growth and a variety of remedial strategies to evaluate their effectiveness in reducing the resulting problems for the region. They may also show how EU responses may be helping or hindering the solution of these problems. Candidates may recognise that the effectiveness will vary with location, and with the scale/type of problem. At this level candidates can be expected to recognise that the view of their effectiveness may vary. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of the causes of rapid regional growth and a variety of remedial strategies to offer a limited evaluation of their effectiveness in reducing the resulting problems for the region. They may also show in a limited way how EU responses may be helping or hindering the solution of these problems. Candidates may recognise that the effectiveness will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the strategies or a region undergoing rapid growth to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

3. **Assess the view that the negative impacts of the Common Agricultural Policy on rural environments in the EU have outweighed the benefits.** [60]

Rural environments include both the physical environments and the human environments including the rural community.

A single case study could meet the requirement of the question. The stress is on the impact on the rural environment but this may distinguish a higher level response.

An answer that disregards the impact on the rural environment can still score well into Level 3 especially in AO2 & 3.

A01 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)

Candidates will have detailed knowledge of the scope of the CAP and of its impact, both positive and negative, on a range of specific rural environments. These impacts could include: immediate and longer term, direct and indirect, environmental v social v economic. There should be detailed exemplification.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the scope of the CAP and of its impact, both positive and negative, on specific rural environments. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the scope of the CAP and of its impact, both positive and negative, on rural environments. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of some of the scope of the CAP and a limited range of its impacts, positive and/or negative, on rural environments. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)

Candidates will demonstrate detailed understanding of the cause-effect of the main elements of the CAP and a range of the resulting impacts (economic, demographic, social and environmental). A detailed understanding of the negative and positive impacts on rural environments – both physical and human - can be expected.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of the main elements of the CAP and the resulting impacts (economic, environmental). An understanding of the negative and positive impacts on rural environments – both physical and human - can be expected.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of the main elements of the CAP and some of the resulting impacts. A limited understanding of the negative and positive impacts on rural environments – both physical and human - can be expected.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between the CAP and a limited range of impacts.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of the CAP and its impact on rural environments to give a detailed evaluation of whether it is on balance beneficial or harmful. Candidates may recognise that the nature of the impact will vary with scale eg local v national, time, location eg remote v less remote, and with the type of rural landscape eg highland v lowland or rural population. At this level candidates can be expected to recognise that the view of the nature of the impact may vary between groups in the community. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of the CAP and its impact on rural environments to evaluate whether it is on balance beneficial or harmful. Candidates may recognise that the nature of the impact will vary with location eg remote v less remote, and with the type of rural landscape eg highland v lowland. At this level candidates may be expected to recognise that the view of the nature of the impact may vary. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of the CAP and its impact on rural environments to offer a limited evaluation of whether it is on balance beneficial or harmful. Candidates may recognise that the nature of the impact will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the inter-relationship of CAP and its impacts to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

Option 2: Managing Urban Environments

4. 'Shanty towns are areas of hope and potential rather than depressing slums.' How far do you agree with this view? [60]

Case studies or exemplification are vital to get into Level 3 & 4 in AO1 & 2.

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of a range of the nature and characteristics of shanty towns, both positive and negative. These could include: environmental, social, economic and political conditions. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the nature and characteristics of shanty towns, both positive and negative. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the nature and characteristics of shanty towns, both positive and negative. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of some of the characteristics of shanty towns. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of the cause-effect of the development and characteristics of shanty-towns and a range of the resulting impacts on the population (economic, political, social and environmental) that live there.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of the development and characteristics of shanty-towns and a range of the resulting impacts on the population (economic and environmental) that live there.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of the development and characteristics of shanty-towns and a limited range of the resulting impacts on the population that live there.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between the development and characteristics of shanty-towns and resulting impacts.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of shanty-town characteristics to offer a detailed evaluation of the viewpoint – whether they do generate hope and potential or not. Candidates may recognise that this will vary with scale, time, location eg remote v less remote, government intervention and with the type of shanty-town or its population. At this level candidates can be expected to recognise that either view is too simplistic. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of shanty-town characteristics to offer an evaluation of the viewpoint – whether they do generate hope and potential or not. Candidates may recognise that this will vary with government intervention and with the type of shanty-town or its population. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of shanty-town characteristics to offer a limited evaluation of the viewpoint – whether they do generate hope and potential or not. Candidates may recognise that this will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of shanty-town characteristics to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

5. 'Counterurbanisation has brought more benefits than problems to urban areas in MEDCs.' Evaluate this viewpoint. [60]

'Urban areas' is most likely to be seen as the originating areas but higher level answers may recognise that much of this movement (and hence benefits/problems) has been to smaller urban areas in rural areas.

Answers based on impact on rural areas max. L2

A01 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)

Candidates will have detailed knowledge of the process of counterurbanisation and its impact, both positive and negative. These impacts could include: local v national/regional, direct and indirect, environmental v social v economic. This may be underpinned by an effective use of concepts, eg spread, or theories to explain the process. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the process of counterurbanisation and its impact, both positive and negative. These impacts could include environmental v social v economic. This may be underpinned by an effective use of concepts to help explain the process. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the process of counterurbanisation and some of its impact, both positive and negative. There will be limited exemplification.

Level 1 0-2 marks

Candidates will have limited or vague knowledge of some of the process of counterurbanisation and little of its impact. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)

Candidates will demonstrate detailed understanding of the cause-effect of the counterurbanisation process and a range of the resulting impacts (economic, demographic, social and environmental) on the departure urban area. At this level some appreciation of the implications for urban areas in the receiving area and/or the country as a whole may be expected.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of the counterurbanisation process and the resulting impacts on the departure urban area.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of the counterurbanisation process and a limited variety of the resulting impacts on the departure urban area.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the counterurbanisation process and the resulting impacts.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of counterurbanisation and its impact to offer a detailed evaluation of whether it is beneficial or harmful or neutral for urban areas. Candidates may recognise that the nature of the impact will vary with scale eg local v national, time, location eg inner v outer urban areas, and with type of counter-urbanisation eg residential or industrial driven. At this level candidates can be expected to recognise that the view of the nature of the impact may vary between groups in the urban community. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of counterurbanisation and its impact to offer an evaluation of whether it is beneficial or harmful or neutral for urban areas. Candidates may recognise that the nature of the impact will vary with location eg inner v outer urban areas, and with type of counter-urbanisation eg residential or industrial driven. At this level candidates may be expected to recognise that the view of the nature of the impact may vary. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of counterurbanisation and its impact to offer a limited evaluation of whether it is beneficial or harmful or neutral for urban areas. Candidates may recognise that the nature of the impact will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of counterurbanisation and its impact to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria.

6. Assess the effectiveness of strategies to manage air and water pollution in urban areas. [60]

There are two elements to this question and both need to be covered but not necessarily equally. This question could be from a LEDC or MEDC or a combination viewpoint.

If lacks urban focus then max L2 in AO1 & 2.

If focus is on causes then max L2 in AOs 1, 2, 3.

A01 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)

Candidates will have detailed knowledge of a range of the causes of air and water pollution in urban areas (air – fumes from traffic, factories, homes; dust; gases; particulates etc. water – sewage, fuel spills, factory wastes etc.) and a range of strategies (local, city wide, regional, national) used to reduce these problems. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of a range of the causes of air and water pollution in urban areas and some of the strategies used to reduce these problems. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the causes of air and water pollution in urban areas and a limited range of the strategies used to reduce these problems. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of some of the causes of air and water pollution in urban areas and a very basic range of the strategies used. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)

Candidates will demonstrate detailed understanding of the cause-effect of air and water pollution in urban areas. A detailed understanding of how a range of strategies (preventative, reactive, remedial) attempt to reduce these problems can also be expected.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of air and water pollution in urban areas. An understanding of how a variety of strategies attempt to reduce these problems can also be expected.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of air and water pollution in urban areas. Some understanding of how a limited variety of strategies attempt to reduce these problems can also be expected.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the causes of air and water pollution in urban areas and have limited understanding of strategies.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of various strategies used to reduce air and water pollution in urban areas to offer a detailed evaluation of whether they are, or can be, successful. Candidates may recognise that the level of success will vary with scale, time, location eg inner v outer urban areas, and with the type strategy/pollution. At this level candidates can be expected to recognise that the view of the nature of the success may vary between groups in the community eg car users' v residents. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of various strategies used to reduce air and water pollution in urban areas to evaluate whether they are, or can be, successful. Candidates may recognise that the level of success will vary with location eg inner v outer urban areas, and with the type strategy/pollution. At this level candidates can be expected to recognise that the view of the nature of the success may vary. There will be some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of various strategies used to reduce air and water pollution in urban areas to offer a limited evaluation of whether they are successful. Candidates may recognise that the level of success will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the strategies used to reduce air and water pollution in urban areas to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

Option 3: Managing Rural Environments

7. 'Farming is of decreasing importance in rural environments'. To what extent do you agree with this view? [60]

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of well located rural environment(s) and a range of the relative roles of farming (as an employer, income generator, land user etc.) in that environment. Detailed knowledge may be expected of the role of other alternative activities such as tourism, recreation, second homes etc. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of well located rural environment(s) and the relative roles of farming in that environment. Some knowledge may be expected of the role of other alternative activities. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of rural environment(s) and some of the relative roles of farming in that environment. Some limited knowledge may be expected of the role of other alternative activities. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of rural environment(s) and a few of the relative roles of farming. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of the cause-effect of the changes in farming and the resulting impacts (economic, demographic, social and environmental) on the rural environment (natural and human). At this level some appreciation of the meaning of 'rural environment' can be expected.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of the changes in farming and some of the resulting impacts on the rural environment (natural and human). At this level some appreciation of the meaning of 'rural environment' may be expected.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of the changes in farming and a limited range of the resulting impacts on the rural environment. At this level little appreciation of the meaning of 'rural environment' may be expected.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between farming and rural environments.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of farming and its role in the rural environment to offer a detailed evaluation of whether it is of decreasing importance. At this level some discussion of the meaning of importance can be expected. Candidates may recognise that the nature or level of importance will vary with scale eg local v regional, time, location eg remote v less remote, with the type of rural environment eg highland v lowland or type of farming eg pastoral v arable, and with how importance is measured. At this level candidates can be expected to recognise that the view of whether it is decreasing in importance may vary between groups in the community. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of farming and its role in the rural environment to evaluate whether it is of decreasing importance. Candidates may recognise that the nature or level of importance will vary with location eg remote v less remote, with the type of rural environment eg highland v lowland or type of farming eg pastoral v arable, and with how importance is measured. At this level candidates may be expected to recognise that the view of whether it is decreasing in importance may vary. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of farming and its role in the rural environment to offer a limited evaluation of whether it is of decreasing importance. Candidates may recognise that the nature or level of importance will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the farming and its role in the rural environment to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

8. To what extent does sustainable forestry impact on rural environments? [60]

Sustainable Forestry can cover a wide spectrum of activity from large scale commercial forestry to local sustainable coppicing. Environments include both natural and human aspects.

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of sustainable forestry and a range of impacts, both positive and negative, of sustainable forestry (which may include afforestation, deforestation and sustainable strategies) on rural environments – both physical and human. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of sustainable forestry and its impact, both positive and negative, on rural environments – both physical and human. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the impact, both positive and negative, of sustainable forestry on rural environments –physical and/or human. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of sustainable forestry and an inaccurate idea of its impact. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of the cause-effect of various aspects of sustainable forestry and a range of their resulting impacts (economic, social and environmental) on both the physical and human environments in rural areas.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of various aspects of sustainable forestry and their resulting impacts on both the physical and human environments in rural areas.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of some of the aspects of sustainable forestry and some of their resulting impacts on the physical and/or human environments in rural areas.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the cause-effect of some of the aspects of sustainable forestry and an inaccurate understanding of their resulting impacts.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of sustainable forestry and forestry activities and their impact on the rural environment to give a detailed evaluation of whether it is beneficial or harmful or neutral. Candidates may recognise that the nature of the impact will vary with scale eg local v regional, time, location eg remote v less remote, and with the type of environment eg highland v lowland or type of forestry eg conifers v mixed or deciduous. At this level candidates can be expected to recognise that the view of the nature of the impact of forestry may vary between groups in the rural community. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of sustainable forestry and forestry activities and their impact on the rural environment to evaluate whether it is beneficial or harmful. Candidates may recognise that the nature of the impact will vary with location eg remote v less remote, and with the type of environment eg highland v lowland or type of forestry eg conifers v mixed or deciduous. At this level candidates may be expected to recognise that the view of the nature of the impact of forestry may vary. There will be some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of sustainable forestry and some of their impact on the rural environment to offer a limited evaluation of whether it is beneficial or harmful. Candidates may recognise that the nature of the impact will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of sustainable forestry and some of their impact on the rural environment to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

9. Assess the effectiveness of schemes to plan and manage national parks. [60]

The focus is on planning and managing but they do not have to be equally balanced – it will reflect their location of examples eg England v USA. The term ‘schemes’ is open to wide interpretation.

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of the nature of a range of schemes of planning and managing in national parks (local, park-wide, national) and the relative effectiveness of these schemes. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the nature of a variety of schemes of planning and managing in national parks and the relative effectiveness of these schemes. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the schemes of planning and managing in national parks and limited knowledge of the relative effectiveness of these schemes. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of schemes of planning and managing in national parks. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of why and how national parks need to have schemes that plan and manage them or parts of them. There will be a clear understanding as to why some schemes are more successful than others – possibly due to the area, politics, capital and technology available etc.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of why and how national parks need to have schemes that plan and manage them or parts of them. There will be some understanding as to why some schemes are more successful than others.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of why and how national parks need to have schemes that plan and manage them or parts of them. There will be limited understanding as to why some schemes are more successful than others.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of national parks and their need for planning and management schemes.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of schemes to plan and manage national parks to offer a detailed evaluation of their effectiveness. Candidates may recognise that the degree of success will vary with scale eg local v regional, time, location eg remote v less remote, the type of landscape eg highland v lowland or type of pressures eg residential or agricultural. At this level candidates can be expected to recognise that the view of the nature of the level of success may vary between groups in the community. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of schemes to plan and manage national parks to offer an evaluation of their effectiveness. Candidates may recognise that the degree of success will vary with location eg remote v less remote, the type of landscape eg highland v lowland or type of pressures eg residential or agricultural. At this level candidates can be expected to recognise that the view of the nature of the level of success may vary. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of schemes to plan and manage national parks to offer a limited evaluation of their effectiveness. Candidates may recognise that the degree of success will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of schemes to plan and manage national parks to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

Option 4: Hazardous Environments

- 10. To what extent is the distribution of hazardous events a reflection of tectonic plate boundaries? [60]**

If no reference to none plate boundary hazards then Max L2 in AO3.

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of the distribution, scale and type of hazardous events (climatic as well as tectonic) and a range of the hazards that are associated with different types of plate tectonic boundaries – constructive, destructive and conservative. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the distribution, scale and type of hazardous events (climatic as well as tectonic) and a variety of the hazards that are associated with different types of plate tectonic boundaries. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the distribution and type of hazardous events and some of the hazards that are associated with different types of plate tectonic boundaries. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or inaccurate knowledge of some of the distribution of hazardous events and some of the hazards that are associated with different types of plate tectonic boundaries. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of the cause-effect between being on or near a plate boundary and the creation of a hazard which in turn may result in a disaster (hazardous event). Candidates can be expected at least to distinguish a range of tectonic hazards from atmospheric showing a detailed understanding of their causes and relationship to plate tectonics.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect between being on or near a plate boundary and the creation of a hazard which in turn may result in a disaster (hazardous event). Candidates can be expected at least to distinguish tectonic hazards from atmospheric showing a clear understanding of their causes and relationship to plate tectonics.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect between being on or near a plate boundary and the creation of a hazardous event. Candidates can be expected to distinguish tectonic hazards from atmospheric showing a some limited understanding of their causes and relationship to plate tectonics.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between plate boundaries and hazardous events.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of the distribution of hazardous events to offer a detailed evaluation of the extent to which they coincide with plate boundaries. Candidates should recognise that there are significant hazardous events away from plate boundaries and go on to suggest other determining factors such as: location eg remote v less remote, non-tectonic hazards, the type of area eg highland v lowland coast, level of development or density of population. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of the distribution of hazardous events to offer an evaluation of the extent to which they coincide with plate boundaries. Candidates should recognise that there are significant hazardous events away from plate boundaries and go on to suggest other determining factors such as: non-tectonic hazards, the type of area eg highland v lowland coast, or density of population. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of the distribution of hazardous events to offer a limited evaluation of the extent to which they coincide with plate boundaries. Candidates may recognise that there are significant hazardous events away from plate boundaries due to other factors. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the distribution of hazardous events to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

11. To what extent can the impacts of hazards be reduced?**[60]**

This is a wide ranging question so candidates can not be expected to cover the full range of hazards. There are a number of ways of approaching this question all of which are equally valid.

A01 Knowledge of content (0-8 marks)**Level 4 (7-8 marks)**

Candidates will have detailed knowledge of the impacts (primary, secondary and possibly longer term) of a range of hazards. There will be detailed knowledge of a range of possible ways of reducing their impacts (prediction, warnings, planning, building design, evacuation, rescue and support etc.). Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the impacts (primary, secondary) of a variety of hazards. There will be clear knowledge of a variety of possible ways of reducing their impacts. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the impacts (primary, secondary) of a limited range of hazards. There will be some knowledge of a variety of possible ways of reducing their impacts. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of the impacts of hazards and possible ways of reducing their impacts. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)**Level 4 (18-22 marks)**

Candidates will demonstrate detailed understanding of the cause-effect of the hazards and their impacts (primary, secondary and longer term) but also a detailed understanding of how various strategies may or may not reduce these impacts.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of the hazards and some of their impacts but also an understanding of how various strategies may or may not reduce these impacts.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of the hazards and some of their impacts but also a limited understanding of how some strategies may or may not reduce these impacts.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between hazards, their impacts and possible strategies.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of the impacts of a range of hazards to offer a detailed evaluation of the extent to which these impacts can be reduced. At this level candidates may recognise that this will vary with the nature of the hazards and impacts, the type of area eg low lying coast v inland, level of development/technology eg ability to predict hurricanes, density of population, hazard frequency etc. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of the impacts of a range of hazards to offer an evaluation of the extent to which these impacts can be reduced. At this level candidates may recognise that this will vary with the nature of the hazards and impacts, level of development/technology. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of the impacts of a range of hazards to offer a limited evaluation of the extent to which these impacts can be reduced. At this level candidates may recognise that this will vary. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the impacts of hazards and reduction strategies to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

12. To what extent has the growth of coastal populations increased the impacts of hurricanes and tropical storms? [60]

Those answers that ignore growth are limited to max L3 in AO3.

A01 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)

Candidates will have detailed knowledge of the location and movement of hurricanes etc and the location of expanding coastal populations. There will be detailed knowledge of a range of the impacts of such storms – both primary eg strong winds and secondary eg flooding and the concept that risk and impact is associated with population. Exemplification should be detailed.

Level 3 (5-6 marks)

Candidates will have clear knowledge of the location and movement of hurricanes etc and the location of expanding coastal populations. There will be knowledge of a range of the impacts of such storms and the concept that the level of impact is associated with population. There should be sound exemplification.

Level 2 (3-4 marks)

Candidates will have adequate knowledge of some of the location and movement of hurricanes etc and some of the location of expanding coastal populations. There will be limited knowledge of a range of the impacts of such storms. There will be limited exemplification.

Level 1 (0-2 marks)

Candidates will have limited or vague knowledge of hurricanes etc and their impacts and a basic or inaccurate idea of expanding coastal populations. Little, if any, exemplification.

A02 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)

Candidates will demonstrate detailed understanding of the cause-effect of the growth of coastal populations and the increased level (severity, scale) and variety of impacts (direct and indirect, primary and secondary) from hurricanes etc. but also a detailed understanding of how hurricanes develop and move such that they pose major threats to coastal areas.

Level 3 (12-17 marks)

Candidates will demonstrate a clear understanding of the cause-effect of the growth of coastal populations and the increased level and variety of impacts from hurricanes etc. but also some understanding of how hurricanes develop and move such that they pose major threats to coastal areas.

Level 2 (6-11 marks)

Candidates will demonstrate an adequate understanding of the cause-effect of the growth of coastal populations and the increased level of impacts from hurricanes etc. and a limited understanding of how hurricanes develop and move such that they pose major threats to coastal areas.

Level 1 (0-5 marks)

Candidates will demonstrate a very basic or vague understanding of the links between the nature of hurricanes etc. and their impacts on population.

A03 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)**Level 4 (18-22 marks)**

Candidates apply their detailed knowledge and critical understanding of the growth and location of coastal populations and the risks posed by hurricanes to such populations to give a detailed evaluation of whether these impacts have increased. At this level candidates may recognise that the nature of the impacts also varies with the type of coast eg low lying, latitude, level of development/technology eg ability to predict hurricanes, density of population, hurricane frequency etc. There should be clear evidence of Synopticity.

Level 3 (12-17 marks)

Candidates apply their knowledge and critical understanding of the growth and location of coastal populations and the risks posed by hurricanes to such populations to evaluate whether these impacts have increased. At this level candidates may recognise that the nature of the impacts also varies with the type of coast eg low lying, latitude, level of development, density of population, etc. There will some evidence of Synopticity.

Level 2 (6-11 marks)

Candidates apply some of their knowledge and critical understanding of the growth of coastal populations and the risks posed by hurricanes to such populations to offer a limited evaluation of whether these impacts have increased. At this level candidates may recognise that the nature of the impacts varies. Limited, if any, Synopticity.

Level 1 (0-5 marks)

Candidates apply limited or vague knowledge and critical understanding of the risks posed by hurricanes to coastal populations to offer little, if any, evaluation of the statement. No attempt at Synopticity.

Maximum 11 marks for application and 11 marks for evaluation

A04 Communication (0-8 marks)

Use generic assessment criteria

2686 Investigative Skills

- 1 The assessment levels and mark ranges used on this paper are as follows:

Level	Max 15 marks	Max 10 marks	Max 5 marks
3	12-15	8-10	
2	7-11	5-7	4-5
1	0-6	0-4	0-3

- 2 Each question will be level marked using generic descriptors with clarification on the specific content requirements given on a question-by-question basis.
- 3 The generic descriptors are given below. Please use these in conjunction with the main mark scheme document.
- 4 There are clear progressions in the standards expected:

	Level 1	Level 2	Level 3
Key words	Basic Little or no Lacks substance Limited	Sound Reasonable Present Some	Clear Good Effective Developed Clearly presented

Level marking**LEVEL 3****Candidates show:**

- Good knowledge of sources of information and have a clear sense of place and location, where relevant.
- Their knowledge is applied appropriately to familiar and unfamiliar geographical contexts. Candidates display skill in interpreting a range of sources of spatial and/or temporal geographical information where appropriate.
- They identify appropriate geographical questions in a range of contexts and formulate effective approaches to enquiry.
- Candidates demonstrate application of a range of skills and techniques to present and analyse the data.
- Where relevant, the candidate shows a wide knowledge of primary and secondary data sources.
- Conclusions are reasoned, with the outcomes and methods being evaluated.
- The limitations of the investigation are recognised.
- The work follows a logical and coherent structure with geographical terms used confidently.
- Spelling, grammar and punctuation are accurate.

LEVEL 2**Candidates demonstrate:**

- A sound knowledge of appropriate techniques and understanding of the nature of geographical investigation.
- There is a sense of location and place.
- Geographical questions are formulated with reasonable effectiveness with some application of techniques to familiar and unfamiliar geographical contexts.
- Some skill is shown in the interpretation of spatial and/or temporal geographical information.
- Knowledge is applied to reach some valid conclusions and candidates are able to comment upon the effectiveness of their methodology and the validity of the outcome.
- Written answers are structured and spelling, punctuation and grammar are used with reasonable accuracy.
- A range of geographical terms are used.

LEVEL 1**Candidates show:**

- A basic knowledge of the nature of geographical enquiry and of the techniques specified.
- Explanation and understanding of skills required in geographical investigation are limited.
- Candidates can identify basic relevant geographical questions when presented with familiar contexts and can suggest and adopt approaches to enquiry.
- Basic techniques are used with a limited range of methods to present and analyse evidence.
- Candidates are able to reach simple conclusions and identify strengths and weaknesses of their enquiries.
- Written work is poorly structured often with inaccurate spelling, punctuation and grammar.
- Basic and sometimes inaccurate use of geographical terms.

- 1 (a) Study the 1:25 000 O.S. Map extract of the Seaford area, in which an 'A' level geographical investigation is to be undertaken.

- (i) Outline and justify an appropriate geographical investigation within the area shown on the map. [5]

Indicative content:

There are a range of potential enquiries based upon

- River studies and coastal studies
- Slope studies
- Settlement issues /tourism studies
- Woodland ecology/micro climates
- Transport studies /urban structures and investigations
- Service provision

Level marking:

Level 2 (4-5)

A clear and appropriate question or hypothesis based upon the map that could be carried out in an appropriate time scale. It must be justified by including GR's on map/named places/ purpose of study linked to map. Some mention of underlying theory will be a top level 2 indicator.

Level 1 (0-3)

A basic or less appropriate question based upon the map extract lacking justification or a realistic time frame. Top level 1 may have names and GRs.

- (ii) Describe and justify the primary data you would collect in the investigation you outlined in part (i). [10]

Indicative content:

- A clear statement of what is to be collected showing an understanding of primary data.
- Several sources should be explored, outlining why the data is collected.
- The choices should be justified, indicating how it is linked into the enquiry.
- A clear use of the map, including names and grid references.

Level marking:

Level 3 (8-10)

A **detailed** indication and explanation of at least three of the above statements to include map names and refs. Some expectation of theory.

Level 2 (5-7)

A **clear** understanding of at least one of the above with some detail shown.

Level 1 (0-4)

A **basic** answer, thin on content, detail and understanding.

- (iii) With reference to the O.S. map extract, describe and justify appropriate sampling strategies that you would use to collect the primary data identified in part (ii). [15]

Indicative content:

- Clear statement of an appropriate range of techniques including specific sampling techniques.
- Candidates should establish a clear link between the technique and the question/hypothesis. More able candidates will give specific details related to sites and distances on the map.
- When stratified sampling is identified then the sub-sets should be clearly demarcated.
- Sampling intervals should be determined and explained
- I expect that the number of methods employed would mirror the range of data collected.

Level Marking:

Level 3 (12-15)

A **detailed** understanding and grasp of the necessary techniques. Appropriate types of sampling will be included. Both description and justification needed with specific reference to the map. Standard deviation and inter quartile range will be good L3 indicators.

Level 2 (7-11)

Answer dominated by either **clear** description or justification. Less reference to the map and an unconvincing grasp of sampling methodology.

Level 1 (0-6)

An unbalanced **basic** answer with little understanding nor reference to the map. All description and little /no justification.

- (b) To what extent could the effectiveness of an enquiry be influenced by the scale of the maps and diagrams used? Give examples in your answer. [15]

Indicative content:

- O.S. map 1:50000 useful to look at regions and linkages within the region.
 1. large scale studies as cover wide area in general detail.
 2. history of coverage allowing comparison over time.
- 1:25000 more detailed and show field boundaries and buildings
- 1:10000 useful for built up areas showing buildings clearly.
 1. Goad maps useful for urban studies for towns with a population over 50000. Draw backs should be mentioned.
- Superplan series are expensive but show exceptional amounts of detail 1:2500 and 1:1250
 1. show streets and buildings could be combined with Goad Map.

Level Marking:**Level 3 (12-15)**

A **detailed** argument, combining explanation of at least two types of map and their use in enquiries. A good use of field work examples will be evident and top level 3 will refer to candidate's individual experiences.

Level 2 (7-11)

A **clear** understanding of at least one map type with some detail shown and links to field work. Answers limited to OS maps will be pegged at L2.

Level 1 (0-6)

A **basic** answer, thin on content, detail and understanding.

2 (a) Study Fig 1, a flow line map of commuter journeys in North East England.

(i) Describe ways in which Fig.1 could be improved. [5]

Indicative content:

- Scale for rays
- Key
- Map scale
- Place names
- Title
- North arrow

Level Marking:

Level 2 (4-5)

At least TWO **clearly** developed features or a range of features with less development.

Level 1 (0-3)

A **basic** list of features provided which lacks development.

(ii) Describe the steps involved in constructing this type of flow line map.[10]

Indicative content:

- Title and scale
- draw base map with simple background data included.
- examine range of data and decide scale for rays.
- use proportional scale if data range is too large.
- do the rays obscure the map at the scale chosen?
- If arrows used ensure that tail is over the origin and nose points to destination.
- If flow is two way then shading can be used on a split arrow to show proportions in each direction.

Level Marking

Level 3 (8-10)

A **detailed** indication and explanation of at least three of the above statements.

Level 2 (5-7)

A **clear** understanding of at least two of the above with some detail shown.

Level 1 (0-4)

A **basic** answer, thin on content, detail and understanding.

- (iii) Describe and explain how the use of proportional symbols could help in illustrating the outcome of a geographical investigation. Give examples in your answer. [15]

Indicative content:

- Symbols drawn on maps proportional in size to the size of the variable being represented.
- Are superimposed over a base map and so show spatial locations.
- Absolute values can be plotted.
- Time scale issues may be included in the charts. Bars of comparable years.
- Examples need to be included. Give credit for good geography and a sensible interpretation of the use of symbols. A range of types (bars and circles etc) would aid the answer.
- Links to appropriate field work and investigations will be needed.
- A purely theoretical explanation with no examples of usage in field work will be a maximum Level 2.

Level Marking

Level 3 (12-15)

Shows a **detailed** understanding of the methods with a discursive content about the applicability in a geographical investigation. Both description and explanation will be present. A viable fieldwork example(s) would be a high level 3 indicator.

Level 2 (7-11)

A **clear** understanding of several of the elements but the links are less well established as to how the diagrams could be used in field work.

Level 1 (0-6)

A **basic** understanding of the method and few links are established as to how this could be used in the candidate's field work.

- (b) Evaluate the effectiveness of two techniques, other than proportional symbols, for showing spatial distributions of population. [15]

Indicative content:

- Dot maps effectiveness depends upon:
 1. area boundaries on map
 2. define the data to be shown
 3. decide upon dot value – high enough to avoid overcrowding but low enough to avoid too many empty areas
 4. decide on dot size - not too large and not merge
 5. dot location vital – false impressions of the distribution
- Isoline maps effectiveness
 1. plot points
 2. isoline interval
 3. personal judgement needed
 4. show gradual spatial changes
- Choropleth maps
 1. base map with clear unit boundaries
 2. find data range and decide scale
 3. shading light to dark
 4. ensure clear key

Level Marking:

Level 3 (12-15)

A **detailed** evaluation of both alternative methods. Both merits and limitations should be included. Links to field work exemplars may be applicable. Good discursive content with an opinion about the best method.

Level 2 (7-11)

A **clear** evaluation of both alternatives with some detail and understanding shown. Some discursive content will move candidate towards top of level. There may be more description regarding how the maps are drawn and an opinion as to the best method.

Level 1 (0-6)

A **basic** evaluation shown. Any methods will be thin on content and applicability. Few, if any evaluations or limitations and no opinion offered.

This does not necessarily have to be confined to human populations.

Credit should also be given to:

- kite diagrams for populations of various species
- **topological maps displayed by size to show flows and directions**

	merits	limitations
Dot map	Useful for showing distributions of population where values are known and some indication about spatial distribution is given	Hard to count large numbers of dots so can only give an impression. Not easily recoverable data For accuracy, a large amount of background data is needed
Isoline map	Ideal for showing gradual changes over space and creates no boundary issues	Personal judgement over line placement is needed. Unsuitable for patchy distributions
Choropleth map	Easy to draw Good visual impression of change over space	False impression of abrupt changes at boundaries of units. Variations within areas are concealed so small units are preferred.

- 3 (a) Study Fig. 2, which shows the % organic content and soil depth along a transect in a deciduous woodland.

- (i) Explain why a histogram is an appropriate method of presenting % organic content. [5]

Indicative content:

- data can be grouped into sets within specific ranges
- bars proportional to the frequency with which the data set varies

Level Marking:

Level 2 (4-5)

A clear understanding of what a histogram is and why it is a useful tool in this case.

Level 1 (0-3)

A less clear or less appropriate understanding shown.

- (ii) Describe the advantages and disadvantages of the mean, median and mode to analyse data such as that shown in Fig. 2. [10]

Indicative content:

- A clear statement of some of the likely advantages and disadvantages
- A more manageable form of summary
- Mean is more useful with a standard deviation
- Median should have an inter quartile range
- Modal grouping shows the most common set and is not affected by extremes

Level Marking:

Level 3 (8-10)

A **detailed** series of statements mentioning most of the data descriptions. Two/three well described, clearly presented, justified and effective with the extension elements like SD and IQR.

Level 2 (5-7)

A **clear** answer showing some understanding but lacking in detail. One or two well described points with some justification. Unlikely to mention SD or IQR.

Level 1 (0-4)

A very **basic** answer lacking specificity and justification.

- (iii) **In what ways would a statistical technique help in analysing the relationship between the two sets of data shown in Fig 2?** [15]

Indicative content:

- The use of the correct statistical test. This should be a test of association and not difference. Spearman Rank or a similar test should be both explained and justified.
- A brief outline of the methodology involved should be included but should not form the crux of the answer. A more discursive approach is needed.
- The “help” aspect should include:
 1. this is more precise than a graph
 2. a comparison of several pairs of data from different locations is easier using mathematical than graphical comparison
- it is possible to test the correlation to see if it is significant or has occurred by chance.

Level Marking:

Level 3 (12-15)

All aspects of the testing programme may be included with detail. Good SR will be L3. Dealing with tied values is a good indicator
A strong discursive answer looking at how helpful this technique could be.

Level 2 (7-11)

Two of the above with some detail and understanding shown. Less of a discursive approach adopted.

Level 1 (0-6)

A lack of understanding and detail. Possibly just a Spearman test written out.

- (b) **To what extent is data reliability a compromise between a desire for accuracy and a need for practicality?** [15]

Indicative content:

- Assessment of data quality
- Sampling strategy and target population
- Training in use of equipment
- Job sharing within the group
- Accurate recording of material
- Use of secondary data as a checking technique
- Correct timing to allow equipment to re-set
- The need for practicality should be fully explored showing that candidates understand the limitations imposed by time scales and low tech equipment.
- The impact of the compromise on the results.

Level Marking:**Level 3 (12-15)**

A wide ranging **detailed** answer exploring the need for accuracy and practicality. The compromise should be clearly explored for a top level 3.

Level 2 (7-11)

Will have two or three **clear** ideas but it will lack detail and will include limited reference to any compromise.

Level 1 (0-6)

A poorly constructed **basic** answer lacking focus and detail. Some mention of accuracy and practicality but little mention of the compromise.

Grade Thresholds

Advanced GCE Geography A 3832 7832
June 2009 Examination Series

Unit Threshold Marks

Unit		Maximum Mark	A	B	C	D	E	U
2680	Raw	100	64	57	50	43	36	0
	UMS	120	96	84	72	60	48	0
2681	Raw	75	48	43	38	34	30	0
	UMS	90	72	63	54	45	36	0
2682 01 2682 02	Raw	60	35	32	29	26	23	0
	UMS	15	12	10	8	7	6	0
2682 Opt A	Raw	75	47	43	39	35	31	0
	UMS	90	72	63	54	45	36	0
2683	Raw	90	68	60	52	45	38	0
	UMS	90	72	63	54	45	36	0
2684	Raw	120	80	72	64	57	50	0
	UMS	120	96	84	72	60	48	0
2685	Raw	90	76	68	60	52	44	0
	UMS	90	72	63	54	45	36	0
2686	Raw	90	58	50	42	34	26	0
	UMS	90	72	63	54	45	36	0

Specification Aggregation Results

Overall threshold marks in UMS (ie after conversion of raw marks to uniform marks)

	Maximum Mark	A	B	C	D	E	U
3832	300	240	210	180	150	120	0
7832	600	480	420	360	300	240	0

The cumulative percentage of candidates awarded each grade was as follows:

	A	B	C	D	E	U	Total Number of Candidates
3832	35.4	59.5	78.5	91.1	98.0	100	1261
7832	35.1	65.8	86.3	96.4	99.5	100	3993

3589 candidates aggregated this series

For a description of how UMS marks are calculated see:

http://www.ocr.org.uk/learners/ums_results.html

Statistics are correct at the time of publication.

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