OCR
RECOGNISING ACHIEVEMENT

GCE

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)

MARK SCHEMES FOR THE UNITS

2680 The Physical Environment

Question			Gd	Expected Answers	Mks	Rationale
				Hydrological Systems		
1	**(a)**			**Study Fig. 1, which shows the relationship between size of drainage basin and mean discharge of selected British rivers.**		
		(i)		**What is meant by the term 'drainage basin'?** The area of land drained by a river and its tributaries: some idea of area for 1 mark, and of gathering of water for a river for 1 mark.	**[2]**	Reference to watershed may convey idea of area. Credit anything that implies the feeding of water through. Give credit where language is imprecise but sense is present.
		(ii)		**Describe and explain the relationship shown in Fig. 1.** **Indicative content:** descriptions identify positive relationship/as basin area increases so does discharge. May also comment on strength of relationship and/or anomalies. Explanations will concentrate on input/output relationships, recognising that larger basins have a greater input. **Level 2 (5-6 marks)**: candidates clearly describe the relationship with supporting evidence and/or development and provide a detailed explanation of the relationship. Reference made to how inputs become outputs. Effective use of geographical terminology will characterise the top of this level, and the use of technical terms will distinguish this level. **Level 1 (0-4 marks)**: candidates clearly describe the relationship, with supporting evidence; explanations are limited and lack development. Explanations will not develop beyond a simple statement of input/output relationship. Description with no explanation is max of 3 marks. Limited use of geographical terminology will characterise this level.	**[6]**	The key to L2 is the link between input and output, and the consequent transfer of water within the drainage basin, such as run-off, overland flow, and tributaries. If an answer contains only explanation but no description, max top of L1 – 4 marks.

Question			Gd	Expected Answers	Mks	Rationale
		(iii)		**The river labelled X has a low discharge for the size of its drainage basin. State and explain <u>two</u> possible reasons for its relatively low discharge.** **Indicative content**: possible reasons could include climate, precipitation input, underlying geology, relief, land use/vegetation cover, nature of soils, drainage density and human activities eg dams, abstraction. Explanations might refer to lower inputs, higher outputs (eg evapotranspiration), to changes in stores and flows as a result of these reasons. **Level 2 (5-6 marks)**: candidates state and explain two reasons in detail. Explanation is clearly linked to discharge. Effective use of geographical terminology will characterise the top of this level. **Level 1 (0-4marks)**: candidates identify and explain two reasons with an element of development, or identify one reason and develop it in detail. One reason explained in detail is worth 4 marks. At the lower end of this level the identification of correct reasons is worth one mark per reason.	**[6]**	Under climate, long-term drought is acceptable. If basin shape is referred to it needs to be developed in relation to distance travelled and time taken to be worthy of credit. L2 is characterised by why a factor is responsible for discharge through reference to specific stores and/or transfers. One detailed reason and stated reason which is undeveloped + L2 (5 marks).

Question			Gd	Expected Answers	Mks	Rationale
	(b)			**With reference to one or more named drainage basins, describe and explain different ways in which human activities can influence river discharge**. **Indicative content**: both direct and indirect ways of influencing river discharge are relevant. Direct ways may include: dams, weirs, sluice gates, overflow channels, channel lining, Increased channel size, levees, and flood retention basins. Indirect ways might include most changes to land use: afforestation, deforestation, switch from arable to grazing, urbanisation. Explanations of influences should refer to the effect of changes in stores and flows within the drainage basin as a result of the specified human activities. **Level 3 (8-10 marks)**: candidates describe and explain in detail at least two ways in which people can influence river discharge. Effective use of geographical terminology will characterise the top of this level. **Level 2 (5-7 marks)**: candidates either describe and explain in detail one way in which people can influence river discharge, or describe and explain, with some development, two ways in which people influence river discharge. Some use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates identify ways in which people can influence discharge, but provide no explanation of how such ways operate. Geographical terminology will generally be used inaccurately. Max 6 if no named drainage basin.	**[10]**	"ways" need not be different human activities, but different influences: eg urbanisation might include impermeable surfaces (tarmac, etc) or improved drainage. Reference to both size of discharge and lag time are worthy of credit. The discriminator for L3 is likely to be the explicit link between human activity and discharge through a discussion of stores and flows. Implied reference to discharge through "flooding" gives access to bottom of L3. For the idea of a "named drainage basin" accept some sense of place. If no specific river mentioned, but clear locational knowledge is present, the max 6 mark does not apply.
				Total	**24**	

Question			Gd	Expected Answers	Mks	Rationale
				Ecosystems		
2	**(a)**	**(i)**		**Study Fig. 2, which shows vegetation and soil changes along a dune transect.** **Describe the changes in vegetation with distance from the sea.** **Indicative content**: changes should be identified through number of species and dominant plant types. **Level 2 (3-4 marks)**: candidates identify two changes in two features of vegetation and support these changes with specific reference to the table. Max. 3 if no figures/species mentioned. **Level 1 (0-2 marks)**: candidates either identify two changes, but provide no supporting evidence, or identify one change with supporting evidence.	**[4]**	Mention of changes to pH is not worthy of credit. Inferred characteristics (eg relative to height and vegetation cover) are worthy of credit.
		(ii)		**Describe and explain the differences in soil pH at site 1 and site 8.** **Indicative content**: descriptions identify a high pH near the sea and a low pH at sites furthest inland; explanations could include reference to high $CaCO_3$ content and salt spray near the sea, addition of acidic humus from decaying plant matter, acidic litter from heather. **Level 2 (5-6 marks)**: candidates describe the differences with reference to specific evidence from the graph and give one developed explanation for those differences. Effective use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates either describe the differences with reference to specific evidence from the graph, but provide no valid explanation, or describe the difference without evidence, and provide some developed explanation. Max 2 for description only.	**[6]**	Correct discussion of alkalinity and acidity should be recognised as development of description of pH, so worth 2 marks for description. L2 needs explanatory comments relating sources of CaCO3 or humus/vegetation affecting pH/acidity. L2 needs a clear difference described. Good explanation of one factor related to both locations qualifies for L2. L1 responses are likely to simply make a statement of the relationship between CaCO3 and pH. An answer explaining pH at one site only with no relation to site differences can gain a max of 4.

Question			Gd	Expected Answers	Mks	Rationale
		(iii)		**State and explain <u>one</u> reason for the low number of species found at site 8.** **Indicative content**: evidence could refer to the high acidity, the presence of pine shown on the table or the competition for light, nutrients and water from taller species such as Corsican pine.. **Level 2 (3-4 marks)**: candidates identify a valid reason and explain its link to the low species count. Evidence from the table can be counted as development to qualify for this level. **Level 1 (0-2 marks)**: candidates identify a valid reason, but with limited explanation. The identification of a valid reason only is worth one mark.	**[4]**	NB. Several candidates have taken "Corsican pine moss" as one species rather than two separate ones. Any reasons related to human activity must be followed through in relation to the number of species present to gain L2.
	(b)			**Deciduous woodland is the climatic climax vegetation for much of southern Britain.**		
		(i)		**What is meant by the term 'climatic climax'?** The final stage in succession/vegetation community (1 mark) in balance/equilibrium with its climatic conditions (1 mark).	**[2]**	A key idea here is the vegetation community, not an individual or single species. The idea of balance can be credited if it is implied rather than explicitly stated.

Question			Gd	Expected Answers	Mks	Rationale
		(ii)		**With reference to a named deciduous woodland ecosystem, describe and explain how human activities have affected nutrient flows and stores in the ecosystem.** **Indicative content**: relevant human activities may include coppicing, establishing conservation areas, introduction of new species, thinning, recreation, grazing animals. Nutrient flows may include changes in fallout, decay or uptake, leaching and run-off and changes in biomass, litter and soil stores. Named ecosystem may well be regional in scale. **Level 3 (8-10 marks)**: candidates describe and explain in detail at least two effects of human activity on flows and stores in a named deciduous woodland. Reference to both nutrient flows and stores necessary for this level. Effective use of geographical terminology will characterise the top of this level. **Level 2 (5-7 marks)**: candidates either describe and partially explain two effects, or describe and explain in detail one effect of human activity on flows and/or stores. One human activity explained in detail can reach the top of this level. Some use of geographical terminology will characterise the top of this level. No named deciduous woodland ecosystem is Max 6. **Level 1 (0-4 marks)**: candidates can identify human activities that affect flows and/or stores. Answers will not explain the effects. Geographical terminology will generally be used inaccurately.	**[10]**	If more than one named deciduous woodland ecosystem is discussed, the highest scoring ecosystem is credited. Does not need to be a named woodland, just a named deciduous woodland ecosystem. Tropical deciduous woodland is acceptable. The discriminator for L3 is the idea of the processes linking stores and flows and reference to specific flows and stores rather than a generic “flows” and “stores”. In L2, links between flows and stores are likely to be descriptive rather than explanatory.
				Total	**26**	

Question			Gd	Expected Answers	Mks	Rationale
				Atmospheric Systems		
3	**(a)**			**Study Fig. 3, which shows the global energy budget by latitude.**		
		(i)		**Describe the variation in outgoing long-wave radiation.** Increase towards equator/decrease polewards (1), uneven pattern or supported by evidence (1).	**[2]**	Identification of little variation is worth 1 mark.
		(ii)		**Explain why the incoming short-wave radiation is much lower nearer the poles.** **Indicative content**: explanations might include the angle of incidence of solar radiation at higher latitudes, linked to energy lost in the passage through the atmosphere and spread of energy over wider surface area. **Level 2 (5-6 marks)**: candidates explain the lower incoming short-wave radiation nearer the poles in detail. Effective use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates explain one reason clearly, or discuss more than one reason but with limited development. At the lower end of this level the identification of valid reasons is worth one mark per reason.	**[6]**	Amount of daylight is not an acceptable reason. Reference to reflection in the atmosphere (eg cloud cover) is acceptable, but not reflection related to surface albedo. Relevant diagrams, such as those showing solar ray bands striking the earth's surface, should be credited.

Question			Gd	Expected Answers	Mks	Rationale
		(iii)		**Describe <u>two</u> ways by which surplus energy near the equator is transferred to areas of deficit nearer the poles.** **Indicative content**: possible transfers include ocean currents, winds, air masses, weather systems. Development needs to relate to the polewards transfer of surplus energy. **Level 2 (3-4 marks)**: candidates identify and develop two different ways in which energy is transferred polewards. **Level 1 (0-2 marks)**: candidates either identify and develop one way, or simply identify two ways, without development, in which energy is transferred polewards.	**[4]**	The focus for L2 development should be on the transfer of energy, not simple movement. Examples of ocean currents and winds are appropriate development, but Trade winds are not allowed, because they are moving in the wrong direction.
	(b)			**Name <u>two</u> ways by which heat is transferred from the earth's surface into the atmosphere.** Any two of conduction/convection/terrestrial radiation/latent heat/sensible heat.	**[2]**	Albedo/short-wave radiation/reflection are not worthy of credit. Radiation on its own is not worthy of credit. Evaporation or condensation is not worthy of credit.

Question			Gd	Expected Answers	Mks	Rationale
	(c)			**Describe and explain ways in which human activity can influence the transfer of heat from the earth's surface to the atmosphere.** **Indicative content**: human activities could include urbanisation, industrial activity, polytunnels and other frost protection measures, reservoirs, and smaller scale examples of human-induced changes to the earth's surface. Influences on heat transfers might relate to latent heat, long-wave radiation, sensible heat and convection. **Level 3 (8-10 marks)**: candidates describe and explain in detail at least two ways in which human activity can affect the transfer of heat from the earth's surface to the atmosphere. Effective use of geographical terminology will characterise the top of this level. **Level 2 (5-7 marks)**: candidates either describe and partially explain two effects, or clearly describe and explain one effect of human activity on the transfer of heat from the earth's surface to the atmosphere. Some use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates can identify human activities that affect the transfer of heat from the earth's surface to the atmosphere, but do not explain the effects. Geographical terminology will generally be used inaccurately.	**[10]**	"Earth's surface" refers to anything related to the surface – buildings, crops, vegetation – and human activities at the surface. The focus of the answer should be on the transfer of the heat from the surface to the atmosphere. Answers referring to reduced heat transfer as well as increased heat transfer are equally valid. Pollution on its own is not a human activity. The source of pollution is needed. A range of scales may be appropriate, but the most successful responses are likely to focus on the local energy budget. Human factors which affect how much incoming solar radiation is received (eg related to ozone depletion/pollution) and subsequently emitted by the surface are relevant, but will need development to reach higher levels. L3 responses are likely to relate human activities to the transfer of heat and the processes involved in that transfer. L2 responses will relate human activities to heat transfer, but not develop the processes of such transfer. If no specific human activity is identified (eg pollution), the answer can gain a maximum of L1 only.
				Total	**24**	

Question			Gd	Expected Answers	Mks	Rationale
				Lithosphere		
4	**(a)**			**Study Fig. 4, which shows a valley slope in Shropshire.**		
		(i)		**State <u>two</u> pieces of evidence, which suggest that mass movement has taken place on the slope.** Evidence might include the absence of vegetation, the collapsed structure at the base of the slope, the marked scar, the loose material on the scar, loose material in the stream, titlted or fallen fence posts, terracettes. One mark per piece of evidence.	**[2]**	No credit for "presence of a fence" or for "tilted trees".
		(ii)		**State and explain <u>two</u> possible factors that may have contributed to mass movement on the slope shown.** **Indicative content**: possible factors include steepness of slope, sparseness of vegetation, basal erosion by river, precipitation input, temperature fluctuations, weathering processes, rock type, and earthquakes. **Level 2 (5-6 marks)**: candidates identify and explain two factors In detail. Factors need to be apparent from the photo, although this might be implicit rather than explicit. Effective use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates identify and explain two factors with an element of development, or identify one reason and develop it in detail. One factor clearly explained is worth 4 marks. At the lower end of this level the identification of correct factors is worth one mark per factor.	**[6]**	If the answer adopts a weathering approach, it will need to link to loosening of material and the consequent slope instability to reach L2. Relevant human activity can be credited, but will need development in relation to mass movement to reach higher level.

Question			Gd	Expected Answers	Mks	Rationale
		(iii)		**State and explain <u>two</u> ways in which the slope could be managed to reduce the occurrence of further mass movement.** **Indicative content**: ways might include fencing off the area to prevent human and animal access, basal support through a variety of methods (gabions, rocks, etc), revegetation of the slope, netting, drainage, reprofiling, terracing. **Level 2 (5-6 marks)**: candidates state and explain in detail two methods of reducing the risk of mass movement. Effective use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates state and explain two ways with an element of development, or identify one way and develop it in detail. One way explained in detail is worth 4 marks. At the lower end of this level the identification of correct methods is worth one mark per method.	**[6]**	
	(b)			**Study Fig. 5, which shows the main features of a tectonic plate boundary in the Pacific Ocean.**		
		(i)		**Describe the direction of plate movement at this boundary and outline the causes of this movement.** Description could refer to the movement of plates towards each other or for the movement of one plate beneath the other (downwards); The causes of these movements might refer to convection currents in the mantle (one mark), frictional drag, slab pull and ridge push or other development including the subduction process.	**[3]**	3 marks can be gained either by two elements of description plus one “outline” or for one element of description plus a more developed “outline”.
		(ii)		**Name the zone labelled X, and the features labelled Y and Z.** **Zone X** subduction/Benioff **Feature Y** island arc/volcanic island arc/volcano/volcanic island **Feature Z** ocean trench/deep sea trench/trench	**[3]**	

Question			Gd	Expected Answers	Mks	Rationale
		(iii)		**Explain the formation of Feature Y.** **Indicative content**: explanations might include reference to subduction and the underlying tectonic processes. Reference might also be made to melting of subducted oceanic crust in the aesthenosphere and the rise of low density magma through the weaknesses in the overlying crust. Uplift of crust by rising magma acceptable but not crumpling/folding. **Level 2 (5-6 marks)**: candidates provide a detailed explanation of the processes associated with island arcs or volcanoes. Explanations are likely to refer to both general and more local tectonic processes. Effective use of geographical terminology will characterise the top of this level. **Level 1 (0-4 marks)**: candidates provide limited explanation of the processes involved. Emphasis is likely to be on either general or local tectonic processes. At the lower end of this level, explanations will offer basic points.	**[6]**	Some idea of convergence is worthy of 1 mark.
				Total	**26**	

2681 The Human Environment

Question			Expected Answers	Mks	Rationale
Population					
1	**(a)**	**Study Fig. 1, which shows the distribution of population in Australia, 2005.** **With reference to Fig 1, describe the distribution of population in Australia.**	**Level 2 3 – 4 marks** A clear coherent description. The discriminator from Level 1 is that the response should include a summative comment that refers to the overall distribution of population. Reference to areas of both high and low population is also required for level 2. Max 3 marks if no reference to specific map evidence such as place names or states. **Level 1 0 – 2 marks** A basic description which is fragmentary with the overall distribution not stated. There may be reference to either areas of high or areas of low population only. There may be description state by state. ***Indicative content:*** Possible summative comments might refer to areas of high/low concentrations: • peripheral distribution/central interior • coastal areas/inland • close to/distant from large urban areas • south and east Australia/north and west.	**4**	

	(b)	**Population distribution can be influenced by a variety of factors. State and explain the influence of <u>two</u> physical and <u>two</u> economic factors on population distribution.**			
		(i) Physical factors	**Level 2 5 – 6 marks** Clear understanding of the links between physical factors and their influence on population distribution. The discriminator from Level 1 is that there is identification of the influence on population distribution of two physical factors, at least one of which is well explained. For full marks two reasons are well explained and one is clearly linked to population distribution. Exemplification is not essential but it may be credited where it confirms understanding at this level. **Level 1 0 – 4 marks** Basic understanding of the link between physical factors and population distribution. Explanation of the influence of one physical factor on population distribution may be awarded up to 4 marks. At the lower end of the mark range (max 2 marks) the link between physical factors and population distribution is very weak or non-existent perhaps with simple description of physical factors alone. ***Indicative content:*** Possible physical factors include: • altitude • relief • aspect • aridity/water supply • drainage • soil fertility • temperature • natural vegetation • mineral resources • disease and pestilence • hazard perception.	**6**	

		(ii) Economic factors	**Level 2 5 – 6 marks** Clear understanding of the links between economic factors and their influence on population distribution. The discriminator from Level 1 is that there is identification of the influence on population distribution of two economic factors, at least one of which is well explained. For full marks two factors are identified and well explained and one is clearly linked to population distribution. Exemplification is not essential but it may be credited where it confirms understanding at this level. **Level 1 0 – 4 marks** Basic understanding of the link between economic factors and population distribution. Explanation of the influence of one economic factor on population distribution may be awarded up to 4 marks. At the lower end of the mark range (max 2 marks) the link between economic factors and population distribution is very weak or non-existent perhaps with simple description of economic factors alone. ***Indicative content:*** Possible economic factors include: • employment opportunities (eg traditional manufacturing, modern high tech industry, retailing, tourism) • development of communications networks/accessibility • increasing wealth/car ownership linked to counterurbanisation and population growth in rural areas • investment in farming/farming practices • land values • services • mineral resources where linked to exploitation/employment opportunities • government investment and new towns	**6**	

	(c)	**For a named country or countries, describe <u>two</u> contrasting population policies and explain why these measures have been necessary.**	**Level 3 8 – 10 marks** Detailed knowledge and understanding are demonstrated in the context of one or more countries. There is explicit statement of the policies and the need for them is clearly linked/explained. The discriminator from Level 2 is that there will be explanation of two policies or two aspects of a national policy, at least one of which is well explained and illustrated. For full marks two policies should be well explained and illustrated. Max 9 marks if no reference to dates or figures. **Level 2 5 – 7 marks** Clear knowledge and understanding of one policy set in the context of a country may be awarded up to the top of this level. Responses in which two policies are identified and described but their necessity is less well understood should be placed in Level 2. At the lower end of the mark range the response will be mainly descriptive but the discriminator from Level 1 is that at least some relevant explanation is included. **Level 1 0 – 4 marks** Basic knowledge of a population policy or policies. There may be description of the measures only, without explanation of their necessity. At the lower end of the mark range (max 2) responses will be limited with simplistic, general remarks regarding national population policies. ***Indicative content:*** National population policies could include: • anti natal • pro natal • controls on mortality • immigration/emigration/redistribution. Other aspects of national policies could include: • rural/urban contrasts • regional variations • attitudes towards different socio-economic elements of the population policy changes through time	**10**	
			Total	**26**	

Question			Expected Answers	Mks	Rationale
2	**Rural Settlement**				
	(a)	**Cantal is a remote rural district in the Massif Central, France, (see Fig 2). Changes in net migration and natural increase/decrease in Cantal, 1962–2004, are shown in Fig 3.**			
		(i) With reference to Fig 3, describe the changes shown.	**Level 2 5 – 6 marks** A clear response which describes the changes in net migration and natural increase/decrease between 1962 and 2004. The discriminator from Level 1 is that there is description of the trends for both net migration and natural increase/decrease through time and there is reference to figures/dates for at least one of the elements. For full marks figures/dates for each are required. **Level 1 0 – 4 marks** A basic response in which description of one element through time, either net migration or natural increase/decrease plus figures/dates, may be awarded up to 4 marks. Basic recognition of the two trends with no supporting statistics may also be awarded up to 4 marks. At the lower end of this mark range, up to two marks may be awarded for basic recognition of a change in either net migration or natural increase/decrease alone. Maximum of 2 marks for listing of statistics for each element year by year with no recognition of trends.	**6**	

			Indicative content: Possible summative comments include: • overall, since 1962 the net migration loss has been decreasing, with a small gain since 1999 • at first, the natural change has been one of increase, 1962-1975, followed by a period of decrease, 1975-2004 • as net migration loss decreases there is a change from natural increase to natural decrease • the change from natural increase to natural decrease follows a period of significant net migration loss. Supporting comments which might be included in the descriptions could include: • a period of natural increase of between 0.2% and 0.3% from 1962 to 1975 • a period of natural decrease of between 0.1% and 0.3% between 1975 and 2004 • net migration loss declined from just over 0.6% to just over 0.1% between 1962 and 1990 • in the 1990s and early 2000s natural decrease has been at its greatest, with an average annual rate of approx 0.3% between 1990 and 2004 • recently, between 1999 and 2004, there has been a slight drop in the rate of natural decrease and a small net migration gain.		

		(ii) State and explain <u>two</u> push factors which could account for the migration of rural population away from remote rural regions. You may refer to Fig 2 in your answer.	**Level 2 5 – 6 marks** A clear response in which the emphasis is on push factors pertaining to conditions in remote rural regions. The discriminator from Level 1 is that there is identification of two push factors, at least one of which is well explained. For full marks two push factors are well explained with links to out-migration (which could be implied). Exemplification is not essential but it may be creditworthy if it helps to confirm good understanding. **Level 1 0 – 4 marks** An answer with basic statement of two push factors in outline may be awarded up to 4 marks. A response in which one push factor, causing loss of population, is well developed may be awarded up to 4 marks. At the lower end of the mark range (max 2 marks) responses may include very brief phrases which state conditions in remote rural regions but they are not explicitly linked to out-migration. ***Indicative content:*** Push factors could include physical, social, economic and political factors such as: • moorland/steep slopes/less fertile soil/pastoral farming/forestry/mechanisation of farming – offers few employment opportunities and supports only low population densities • poor accessibility with low density transport networks – narrow minor roads, longer distances and travelling times for services eg in emergency, or for higher order shops and entertainment • harsh climatic conditions eg high rainfall, lower temperatures, high incidence of snowfall and strong winds – low incomes in farming/rural poverty/dissatisfaction with rural way of life • few employment opportunities in manufacturing or service sector – limited investment/planning restrictions in National Parks/other protected areas • limited number and range of services • growth in second home ownership or counterurbanisation - increase in house prices/decline in rural services.	**6**	

		(iii) State and explain one possible reason for the changes in natural increase/decrease shown in Fig 3.	1 mark for recognising that rural depopulation is often age-selective with young leaving rural areas (or the possibility of inward retirement migration) 1 mark for understanding that this causes loss of those in the reproductive age group/leading to an ageing population. 1 mark for understanding that this affects natural increase by causing either a drop in birth rate or an increase in death rate or both. A response that recognises the decline in natural decrease since 1999 and makes the possible link to the net migration gain is also creditworthy.	**3**	

	(b)	**With reference to a named rural region or regions in an MEDC, describe and explain the effects of population change on service provision in settlements both close to, and remote from, large urban areas.**	**Level 3 8 – 10 marks** A Level 3 response should include detailed knowledge and understanding of the effects of population change on service provision within a rural area or areas in an MEDC. The discriminator from Level 2 is explanation of the effects of population change on service provision in settlements close to and remote from large urban areas. Reference to place names, population figures and/or specific services is expected at this level. **Level 2 5 – 7 marks** Clear knowledge and understanding of the effects of population change on provision of services in a rural region in an MEDC. There may be explanation of these effects for only one type of locality i.e. a settlement either close to, or remote from an urban area. Place knowledge and understanding of the effects of population change may be less secure than in Level 3. Whilst responses which are more descriptive than explanatory will be placed towards the lower end of this mark range, the discriminator from Level 1 is the presence of at least some appropriate explanation. **Level 1 0 – 4 marks** Basic knowledge and understanding of the impact of population change on service provision in a rural area. Factual knowledge is limited. No explanation is offered with description only of services in settlement either close to or distant from a large urban area. At the lower end of this mark range (max 2 marks) there will be description of services in one type of settlement alone with perhaps brief, simplistic comments. Indicative content: *Population change in rural settlements could include:* • *loss or gain in total* • *change in structure.*	**10**	*Effects on service provision in rural settlements could include:* • *loss or gain in total numbers* • *change in type.* For answers that are wholly generalised, maximum 6 marks.
			Total	**25**	

Question			Expected Answers	Mks	Rationale
3	**Urban Settlement**				
	(a)	**Study the 1:25,000 OS map extract which shows part of Birmingham's inner city.**			
		(i) With reference to the OS map extract, contrast land use in area A with area B.	**Level 2 5 – 6 marks** A clear response in which contrasts in type of land use are made between area A and area B. The discriminator from Level 1 is that at least two explicit contrasts are made. Maximum 5 marks if the answer is not supported by specific reference to place names, named features or grid references. **Level 1 0 – 4 marks** Basic descriptions in which the contrasts in type of land use between area A and area B are less explicit. Responses in which only one contrast in type of land use between area A and area B is identified and described may be awarded up to 4 marks. Max 2 marks for simple listing of types of land use; a third mark could be awarded if there is explicit statement of map evidence. ***Indicative content :*** There are two possible approaches: a) Contrasts in the major land use in each of the areas A and B such as residential or industrial. b) Contrasts in types of land use: • Residential o B has a high proportion of residential land use, mainly traditional Victorian terraces covering much of the area, between Saltley and Washwood Heath; whereas housing in A covers a smaller area, confined to the east, with mainly redeveloped modern housing schemes at Nechells Green.	**6**	

			• Industrial o A has a higher proportion of industrial land use, mainly smaller buildings, with works and gas holders next to the Birmingham and Fazeley Canal and the A4540 and A47 main roads; whereas in B the industrial buildings are larger including the Business Park. • Communications o A has higher density network of major trunk roads / A38(M) and canals; whereas in B, the Saltley area has a higher density of minor roads with a rectilinear pattern connected by B roads. • Open space o In B the open space is more regularly distributed, being largely confined to the gardens of the terraced housing plus small school playing fields; whereas in A there are more sporadic but larger areas of open space such as the sports ground, open spaces amongst the housing blocks of Nechells Green and the University campus. • Education o B has four schools; A, a university and two schools.		

		(ii) Suggest reasons for the lack of open space in the OS map extract.	**Level 2 3 - 4 marks** A clear response which explains the lack of open space/high density of buildings. It is expected that the reasons given will be generic and applicable to most inner city areas in MEDCs; credit may be given for specific evidence from the Birmingham resource which helps to confirm this understanding. The discriminator from Level 1 is the identification of two reasons, one of which is well explained. For full marks it is expected that both reasons are well explained. **Level 1 0 – 2 marks** A basic response in which two reasons are given in outline only may be awarded up to 2 marks. One reason that is identified and well explained may also be awarded up to 2 marks. ***Indicative content:*** Reasons for the lack of open space/high density of buildings in this inner city area could include: • High land values/bid rent due to demand for land/accessibility in the inner city • high demand for the next available space beyond the existing built-up area/commercial centre (but close to it) for the expansion of 19th century industrial development • construction of small high density terraced houses for low paid factory workers at a time when urban transport systems were poor/within easy walking distance of work • the attraction of river and canal side locations for ease/low cost of transport for early industry • local authority housing schemes as part of inner city regeneration • redevelopment of old industrial/brownfield sites – modern industrial estates, business parks • provision of many services to meet the needs of high density inner city population – schools, places of worship • land adjacent to current CBD is in high demand for expansion outwards of current CBD functions/offices • lack of concern for urban environment in 19th century – limited open space	**4**	

		(iii) The OS map extract shows part of Nechells ward in which minority ethnic populations constitute 62.6% of the population. **With the help of the OS map give <u>two</u> reasons for this high percentage.**	**Level 2 5 – 6 marks** A clear response in which there is explanation of the high % of ethnic minorities. The discriminator from Level 1 is that two reasons are identified, at least one of which is well explained and supported by OS map evidence. For full marks both reasons should be well explained. At this level it is expected that at least one reason is linked to the generally lower economic status of most minority ethnic populations in the inner city. Maximum 5 marks if no map evidence. **Level 1 0 – 4 marks** A basic response. Two reasons given in outline, perhaps with no reference to map evidence, may be awarded marks up to the top of this level. A response in which only one appropriately developed reason is given, with map evidence, may also be awarded up to 4 marks. At the lower end of the mark range there may be brief undeveloped phrases only or merely description/listing of evidence from the OS map. ***Indicative content:*** Reasons for which there is clear map evidence: • cheaper accommodation – terraced housing, flats, local authority housing scheme/redeveloped housing estates – link to lower economic status of many ethnic minorities in the inner city • reduced costs of journey to work – proximity to employment – industrial areas in the inner city or lower paid jobs in the nearby CBD/university/schools – again link to lower economic status. Other possible reasons for high % of ethnic minorities in the inner city: • religion - proximity to places of worship such as churches, temples or mosques • access to services such as ethnic schools/shops • proximity to people of similar culture/language • kinship ties • security against discrimination • flight of the original population to outer more expensive suburbs leaving ethnic minorities highly concentrated in the inner city	**6**	

	(b)	**Identify one way in which the pattern of urban land use in MEDCs differs from that of LEDCs.**	2 marks for two contrasting localities/types of land use which demonstrate a clear difference. 1 mark for statement of one locality/type of land use in either an MEDC or an LEDC urban area where the contrast is not explicitly made. ***Indicative content:*** Possible differences in the patterns of urban land use include: • poorer housing quality in outer areas, recent squatter settlements in LEDCs whereas it is found mainly in the inner city, older terraced housing in MEDCs • more expensive housing in central areas or in enclaves in LEDCs whereas it is mostly in outer suburbs of MEDCs • industrial locations are strongly sectorial along arterial roads in LEDCs whereas they tend to be more zonal in MEDCs.	**2**	Accept for full marks responses which are: • theoretical, based on urban models • based on specific case knowledge alone More specific, named locations/land use types should be given full credit.
	(c)	**Explain how <u>two</u> different stages in the family life cycle can influence where people live within an urban area in MEDCs.**	**Level 2 5 – 6 marks** A clear response. At this level candidates are expected to have identified the stage in the family life cycle and made an explicit link to an appropriate intra-urban locality. The discriminator from Level 1 is that two different stages in the life cycle are identified and for at least one the link between characteristics of that stage (eg age/wealth/family status) and locality (in terms of requirements such as housing/access to work/services/amenities) is well explained. For full marks clear links should be made in two instances. **Level 1 0 – 4 marks** A basic response. Up to 4 marks may be awarded for answers which identify stages in the family life cycle but the link to intra-urban locations is implicit/not clear or vice versa. An answer that identifies one stage in the life cycle and explains the link to an appropriate intra-urban location may be awarded up to 4 marks. At the lower end of the mark range (max 2) answers may briefly describe a stage(s) in the family life cycle but there is no attempt to link this to an intra-urban location.	**6**	.

			Indicative content: There are many possibilities; possible stages in the family life cycle (eg based on Burtenshaw's model)/intra-urban locations could include: • pre-child/single/young couple – rented room in inner area eg student bed-sit in terraced house or if high earners, a gentrified property/Docklands apartment • pre-child/child rearing – owned starter home, small garden, inner suburbs • child rearing/child launching – owned larger family house and garden, outer suburbs • post-child retirement – owned bungalow, outer suburbs or return to inner suburbs/apartment, flat. Equally creditworthy would be answers based on a lower-income life-cycle perhaps more restricted to council property either in inner city areas or in peripheral estates		
			Total	**24**	

2682 Geographical Investigation

1 (a) Describe the usefulness of each of two types of data used in your geographical investigation. [10 marks]

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

- Types acceptable
  - Two different forms of data, e.g. field data (qualitative and quantitative assessments, measurement, questionnaire), map, photograph, census data, telephone directories, GIS data, raw data, processed data.
  - Data can be considered in terms of whether it is primary or secondary.
  - Two different variables within a form of data, e.g. cross sectional area and velocity on a river.
- Usefulness can be in terms of
  - How the data helps to answer the question for investigation, e.g.
    - Field data: cross sectional area and velocity used to calculate discharge which showed that discharge does increase downstream in accordance with geographical theory.
  - What the specified type of data is used for, e.g.
    - Map used to determine sampling location(s), shows spatial relationships, able to plot collected data on map.
    - Photographs annotated to demonstrate specific characteristics of sampling sites and to explain outcomes (especially anomalies).
    - Census data used to support field data and to provide reasons for field data outcomes.
    - Specific types of data presentation and analysis that can be used as a result of collecting the data, e.g. bar charts etc, statistical tests.
  - Success of sampling methodology used to collect the data for the investigation, e.g.
    - Collected pedestrian data at different times of day and days of week therefore obtained a representative sample which showed variations in pedestrian flows and contributed to defining the CBD.
    - Stratified data collected on sand dunes therefore representative of the psammosere.
  - Primary and secondary data
    - Primary data: raw data collected by the candidate is often the basis of the investigation, i.e. the material to be tested against a hypothesis or question for investigation.
    - Secondary data is used to identify models/theories to be tested.
    - Secondary data is used to support primary data.
- Usefulness can be interpreted as "how useful" therefore credit limitations of usefulness, e.g.
  - Cross sectional data alone cannot explain changes downstream.
  - Pedestrian counts alone will not fully define CBD boundary.
  - Poor strategy therefore inappropriate data collected so results not satisfactory.
  - Data collection was not carried out well so results not satisfactory.

The following skills are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the description.
- Discussion relates to the candidate's own investigation.
- Relevance of the material presented.
- Understanding the usefulness of the types of data discussed.
- Balance between the two types of data discussed.

Level 3 (8-10 marks)

Usefulness of **two** types of data are discussed **in detail**.
Limitations of data may be discussed.
Refers to own geographical investigation.
The answer is logically ordered.

Level 2 (5-7 marks)

Either Usefulness of **two** types of data are discussed **clearly (less detail)**.
Or Usefulness of **one** type of data discussed **in detail and** the **other basically or not at all**.
Limitations of data may be discussed.
May refer to own geographical investigation.
Max. top Level 2 if only one type of data.
Max. top Level 2 if theory(ies) not clear.
There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Usefulness of **one or more** types of data are discussed **basically**.
Unlikely to refer to own geographical investigation.
There are considerable gaps and/or errors in the answer.

1 (b) To what extent did the findings of your geographical investigation relate to geographical theories? [10 marks]

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

- "To what extent" requires a discussion of how much the findings did and did not fit with geographical theories.
- More than one finding per theory is acceptable.
- Geographical theories clearly stated:
  - E.g. cross sectional area increases with increasing distance downstream.
  - E.g. vegetation cover increases with increasing distance inland.
  - E.g. CBD can be delimited according to type of land use.
- Consideration of reasons that results did match geographical theory
  - E.g. Took measurements correctly, e.g. different groups measuring in same way, equipment did not fail, weather favourable, plenty of time
  - E.g. Repeated data collection on, e.g. different times of day/days of week/seasons, different weather conditions.
  - E.g. Good sample size.
  - E.g. Risk assessment done properly so able to sample at planned locations so results representative.
  - E.g. No errors in data analysis, e.g. computation, drawing graphs
- Consideration of reasons that results did not match geographical theory
  - E.g. Did not take measurements correctly due to, e.g. different groups measuring differently, equipment failure, intervention of weather, lack of time, overhanging trees
  - E.g. Did not repeat data collection on, e.g. different times of day/days of week/seasons, different weather conditions.
  - E.g. Small sample size.
  - E.g. Risk assessment was not done properly so unable to sample at planned locations so results not representative.
  - E.g. Error in data analysis, e.g. computation, drawing graphs.

The following skills are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the discussion.
- Discussion relates to the candidate's own investigation.
- Relevance of the material presented.
- Understanding the relevance of the chosen investigation to the stated geographical theories.

Level 3 (8-10 marks)

Two or more findings are discussed in relation to **relevant** geographical theories in **detail**.

"To what extent" addressed.
Refers to own geographical investigation.
The answer is logically ordered.

Level 2 (5-7 marks)

One or more findings are discussed in relation to **relevant** geographical theories **clearly (less detail)**.

"To what extent" may be addressed: likely to concentrate on *either* fitting *or* not fitting theories.
May refer to own geographical investigation.
Max top Level 2 if geographical theory not clear.
Theory is referred to.
There are lapses in the logic of the answer.

Level 1 (0-4 marks)

One or more findings are discussed in relation to geographical theories discussed **basically**.

Geographical theory may not be relevant to investigation or may be absent.
"To what extent" unlikely to be addressed: concentrates on *either* fitting *or* not fitting theories.
Unlikely to refer to own geographical investigation.
There are considerable gaps and/or errors in the answer.

2 (a) With reference to *either* Fig. 1 *or* Fig. 2 suggest how you would take account of risks when planning to collect data from this location. [10 marks]

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

- Risk in terms of the successful completion of the data collection, e.g. variety in vegetation for a vegetation survey; take waterproof covers for notes if rain forecast.
- River risks
  - Slippery concrete under bridge
  - Vertical drop from concrete
  - Overhanging trees
  - Recirculating water
  - Deep water
  - Uneven river bed
  - Misbehaving -> falling from bridge
  - Emergency procedures
  - Don't take samples from most dangerous locations
- Avoiding/overcoming river risks
  - Taking due care and attention
  - Not moving fast
  - Support in water
  - Footwear with traction
  - Always someone on safety watch
  - Work as a group
  - Plan before arrival
- City risks
  - Buses at bus stops
  - Moving traffic
  - Parked vehicles
  - Scaffolding
  - Pedestrian crossings
  - Adverse people behaviour
  - Don't take samples from most dangerous locations
- Avoiding/overcoming city risks
  - Taking due care and attention
  - Always someone on safety watch
  - Work as a group
  - Plan before arrival
  - Emergency procedures
  - Consider time of day

The following skills are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the discussion.
- Discussion relates to the resource.
- Relevance of the risks chosen.
- Understanding of how risks can be averted or overcome.
- Understanding of impact of risk on planning data collection.

Level 3 (8-10 marks)

Methods of avoiding/overcoming **two or more** risks are discussed **in detail**.
May refer to figure.
Refers to data collection.
The answer is logically ordered.

Level 2 (5-7 marks)

Methods of avoiding/overcoming **one or more** risks are discussed **clearly (less detail)**.
May refer to figure.
May refer to data collection.
Max top Level 2 if no reference to figure.
There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Methods of avoiding/overcoming **one or more** risks are discussed **basically**.
Unlikely to refer to figure.
Unlikely to refer to data collection.
There are considerable gaps and/or errors in the answer.

2 (b) Explain the advantages and disadvantages of two sampling methods. [10 marks]

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

- Random (random numbers tables/generators or by pin) *or*
  - A: no personal or methodological bias.
  - D: poor coverage (i.e. clumping), difficult to analyse (especially statistical tests), same site could be chosen twice if use random numbers
- Systematic (equal intervals or every n^{th} item) *or*
  - A: good coverage, data analysis often made easy, no personal bias.
  - D: methodological bias (e.g. if area/transect has natural / in built pattern the sampling may fit this)
- Pragmatic (opportunistic)
  - A: may have good coverage, adapt to site constraints
  - D: personal and methodological bias, may not have good coverage, difficult to analyse (especially statistical tests)
- Random / systematic / pragmatic can be
  - *Either* Transect (line)
    - A: sample in proportion to population distribution according to selected criteria.
    - D: time consuming, does not cover whole of an area
  - *Or* Area (grid/parallel transects)
    - A: very good coverage
    - D: time consuming
  - *Either* Points along transect or across area
    - A: quick.
    - D: poor coverage
  - *Or* Quadrats along transect or across area
    - A: good for vegetation sampling
    - D: time consuming
  - Stratified (sample in proportion to population distribution according to selected criteria)
    - A: representative
    - D: time consuming; could be biased
  - NB: each of the above will be acceptable without being linked to random / systematic / pragmatic – although an actual investigation would have to do this.
  - Answers must not be generic to all types of sampling.

The following skills are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the discussion.
- Understanding of sampling methods.
- Balance of the response between the two sampling methods.
- Balance of the response between advantages and disadvantages.

Level 3 (8-10 marks)

Advantages and disadvantages of **two** sampling methods are discussed **in detail**.

Does not simply state that advantage of one method = disadvantage of the other method.
At least 2 advantages and 2 disadvantages altogether.
The answer is logically ordered and balanced.

Level 2 (5-7 marks)

Either **Advantages and disadvantages** of **two** sampling methods are discussed **clearly (less detail)**.

Or **One** of **advantages *or* disadvantages** of **two** sampling methods are discussed **in detail and** the **other basically**.

Or Advantages and disadvantages of one sampling method discussed in detail and the other sampling method discussed basically or not at all.

Does not simply state that advantage of one method = disadvantage of the other method.
Max top Level 2 if only one creditworthy sampling method.
Max top Level 2 if only advantages **or** disadvantages.
There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Advantages *or* disadvantages of **one or more** sampling methods discussed **basically**.

Simply states that advantage of one method = disadvantage of the other method
There are considerable gaps and/or errors in the answer.

3. Fig. 3 shows the environmental degradation and mean age of two cities of similar size.

(a) What are the advantages and disadvantages of using pie charts to compare the differences in the environmental degradation of these two cities?
[10 marks]

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

- Advantages
  - Visual output.
  - Easy to construct.
  - Data can be grouped.
  - Segments of charts show differences between cities.
  - Sample size large enough.
  - Shows spread of results.
  - All data taken into account.
- Disadvantages
  - Not a statistical test that gives levels of confidence in accepting or rejecting a hypothesis.
  - Time consuming.
  - Difficult to decide how to group this spread of data so that charts can be interpreted easily for both cities.
  - Grouping leads to loss of detail.
- Credit: advantages / disadvantages expressed in terms of why better / worse than a named alternative.

The following skills are applied to each level:
- Level of detail.
- Use of geographical terminology.
- Clarity of the discussion.
- Discussion relates to the resource.
- Relevance of the advantages and disadvantages suggested.
- Balance of the response between the advantages and disadvantages.

Level 3 (8-10 marks)
Advantages and disadvantages of pie charts discussed **in detail**.
The answer is logically ordered.

Level 2 (5-7 marks)
Either **Advantages and disadvantages** of pie charts discussed **clearly (less detail)**.
Or **Advantages *or* disadvantages** discussed **in detail and** the **other basically or not at all**.
There are lapses in the logic of the answer.

Level 1 (0-4 marks)
Advantages and disadvantages of pie charts discussed **basically**.
There are considerable gaps and/or errors in the answer.

3 (b) Suggest and justify one method of analysing the relationship between environmental degradation and the mean age of buildings in city A. [10 marks]

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

- Statistical technique:
  - Conduct a statistical test of association such as Spearman's rank correlation or Chi squared.
  - State a hypothesis that is tested and then accepted or rejected.
  - Can set a level of confidence at which to accept or reject hypothesis.
  - Sample size large enough.
  - Continuous data can be used (but needs converting to ordinal in case of Spearman and into Observed and Expected results for Chi squared).
  - All data taken into account.
  - Use of a scattergraph as a precursor to Spearman's is accepted as part of one method.
- Graphical technique:
  - Scattergraph is best: all data taken into account, visually attractive; shows positive and negative relationships between the 2 variables; can add line of best fit, predict outcomes and shows anomalies.
  - NOT methods that imply the location of the sites is in a transect (e.g. bar charts).
- Credit justification expressed in terms of why better than a named appropriate alternative.

The following skills are applied to each level:

- Level of detail.
- Use of geographical terminology.
- Clarity of the suggestion and justification.
- Discussion relates to the resource.
- Relevance of method of analysis.
- Understanding of the application of the method to the subject matter.
- Balance of the response between suggestion and justification.

Level 3 (8-10 marks)

Justification of an appropriate method of analysing the relationship is discussed **in detail**.

Refers to environmental degradation and mean age of buildings.
The answer is logically ordered.

Level 2 (5-7 marks)

Justification of an appropriate method is discussed **clearly (less detail)**.

May refer to environmental degradation and mean age of buildings.
There are lapses in the logic of the answer.

Level 1 (0-4 marks)

Justification of an appropriate method is discussed **basically**.

Unlikely to refer to environmental degradation and mean age of buildings.
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 contrasting methods of coastal management. **[20]**

(b) Explain how sub-aerial processes influence the development of cliffs. **[25]**

(a)

The Spec makes clear that candidates are expected to have studied contrasting methods of coastal management.	
AO1+ AO2	• Quality of detail will inform Level. • Hard engineering – can be divided into two groups, shore-attached eg sea walls; revetments; embankments; groynes; cliff stabilisation (drainage, slope grading, netting, vegetation planting and offshore eg detached breakwaters. • Soft engineering eg beach nourishment; dune stabilisation. • Managed retreat.
AO3	• Level 1 max if only one type of management described eg hard/soft engineering. • Level 3 when clear link made between the method described and what is being managed.
AO4	• See generic mark scheme.

(b)

Sub-aerial processes are explicitly mentioned in the Spec and should be well known and understood in the context of cliff development. If the context is well explained, past processes no longer active can be relevant eg solifluction and slope-over-wall cliffs. Comments about the balance between sub-aerial and marine are relevant.	
AO1+ AO2	• Weathering processes – a wide range of possible processes eg crystal growth; freeze-thaw; wetting + drying; solution; hydration; hydrolysis; oxidation; chelation. • Mass movements – a wide range of possible processes eg rock falls/slides/toppling; slumps + rotational slides; creep; solifluction.
AO3	• Level 1 if only marine processes included. • Bottom of Level 2 if response consists of both marine and sub-aerial. • Bottom of level 2 if weathering/mass movement only. • Quality of link between sub-aerial processes and cliff development will help advise Level.
AO4	• See generic mark scheme.

Or

2 **(a)** Describe how the sea erodes and transports. **[20]**

(b) Account for variations in wave energy reaching the coast. **[25]**

(a)

Processes of marine erosion are fundamental to this Option and should be well known and understood by candidates. Care must be exercised regarding terminology as there are a variety of terms used for the same process.	
AO1+ AO2	• Quarrying/hydraulic action. • Abrasion/corrasion. • Solution/corrosion. • Attrition. • Mention of the sea removing material produced by sub-aerial processes and thus maintaining marine attacks are relevant. • Traction of larger calibre sediment. • Saltation of sands/gravels + small pebbles. • Suspension of small calibre sediment – a likely level 3 indicator. • Solution.
AO3	• Level 1 if only one process mentioned. • Level 2 for two processes. • Level 3 for three + processes.
AO4	• See generic mark scheme.

(b)

Waves represent a transfer of energy into the coastal system and are fundamental, therefore, to an understanding of coastal processes and landforms.	
AO1+ AO2	• Global scale pattern of high/medium/low wave energy. • Role of fetch. • Types of breaking waves – remember the variation in terminology here! • Seismic sea waves (tsunamis). • Wave refraction and diffraction – inclusion of the latter a likely level 3 indicator. • Tides.
AO3	• Bottom of Level 2 if ‘variations’, either temporal or spatial omitted. • Recognition of both temporal and spatial a likely Level 3 indicator.
AO4	• See generic mark scheme.

2682/01

Option 2: Fluvial Environments

Either

3 **(a)** Describe methods of investigating river velocity and discharge. **[20]**

(b) Explain the contrasts in energy required to pick up, transport and deposit sediment of different sizes. **[25]**

(a)

Methods of measuring velocity and discharge are explicitly stated in the Spec Comments about issues such as sampling and risk assessments are appropriate.	
AO1+ AO2	• Level 1 max if distinction between velocity and discharge unclear. • Credit anything that is appropriate for a sixth-former to be realistically capable of achieving. • Credit a variety of equipment.
AO3	• Level 2 max if no reference to bankfull conditions. • Level 1 if distinction between velocity and discharge omitted.
AO4	• See generic mark scheme.

(b)

The emphasis here is on the entrainment, transport and deposition of different types of sediment.	
AO1+ AO2	• General appreciation of Hjulström curve required for Level 2+. • Detailed appreciation of Hjulström curve required for Level 3. • Comments about nature of stream-bed (loose or tight packed) likely to indicate a Level 3 response. • Accurate use of term competence might indicate a Level 2/3 response.
AO3	• Level 1 max if different sizes not addressed. • Top of Level 2+ likely when contrast in energy required for entrainment and transport recognised. • Different types of transport required for Level 2+ eg traction for larger sediment; saltation for medium calibre sediment; solution for dissolved minerals; flotation for small, light sediment.
AO4	• See generic mark scheme.

Or

4 **(a)** Describe the causes of river flooding. **[20]**

(b) Explain how river flooding can be reduced and prevented. **[25]**

(a)

Floods are a major sub-heading in this Option and within that causes are explicitly stated. Responses can reach Level 3 via either a broad or deep approach.	
AO1+ AO2	• Inputs – high-intensity + prolonged rainfall; rapid snowmelt. • Stores + processes – antecedent conditions filling stores; role of geology; basin shape + size; drainage density; role of slope angles within basin; deforestation – accelerates water movement + lowers output; land drainage accelerates water movement; changing agricultural land-use eg pastoral to arable can accelerate water flow; urbanisation can accelerate water flow. • Outputs – drainage density; deforestation can increase sediment yield to channels thereby reducing channel capacity.
AO3	• Level 1 max if no mention of natural causes.
AO4	• See generic mark scheme.

(b)

The question is clear in its request for specific examples and so AO3 will assess this. A response focussed on one river can reach Level 3 if there are a variety of measures employed in that basin.	
AO1+ AO2	• Structural – embankments/levées; channel cleaning; channel straightening; flood relief channels; sluice gates; dams. • Non-structural – land-use change eg headwater afforestation; changes in agricultural practices eg arable to pastoral; zonation of land on flood-plains. • Level 3 likely for responses mentioning methods linked with drainage basin processes.
AO3	• Level 2 max without inclusion of both structural + non-structural. • Level 3 likely for a response addressing prevention + reduction. • Inclusion of prediction a likely indicator of Level 3.
AO4	• See generic mark scheme.

2682/01

Option 3: Glacial and Periglacial Environments

Either

5 **(a)** Describe the changing pattern of ice cover across the British Isles during the Pleistocene. **[20]**

(b) Explain the effects of multiple glaciation and deglaciation on lowland landscapes. **[25]**

(a)

The Spec mentions the Pleistocene in the British Isles and the extent of ice cover associated with this period. The focus in the question is on distribution but with a variety of nomenclature in texts, we should not be prescriptive as regards terminology.	
AO1+ AO2	• Level 2+ for idea of series of glacials separated by inter-glacials. • Extent of each advance different. • Accurate and detailed exemplification assessed at top of Level 2+. • Within each glacial were relatively short-lived stadials, periods of significant ice advance, separated by interstadials, ice retreat. Mention of this a likely Level 3 indicator.
AO3	• Level 1 if response includes non-British Isles material. • Level 1 if non-Pleistocene focus.
AO4	• See generic mark scheme.

(b)

An appreciation of the advance and retreat of ice and the effects on the landscape are important to an understanding of glacial environments. This particular question limits the discussion to lowland landscapes.	
AO1+ AO2	• Deposition – without reference to this process and its associated landforms, Level 1 max. • Erosion – inclusion of this process and its associated landforms likely to indicate a top Level 2 + response. • Deposition – till plains; moraines – allow terminal + recessional + push + rogen but not lateral nor medial which are the result of valley glaciation in upland areas; drumlins; sandur/outwash plain; esker; kames but not kame terrace. • Erosion – meltwater channels; sichelwannen; kettle holes. • Knock + lochan. • Credit reference to peri-glacial landforms + landscapes.
AO3	• Bottom of Level 2 max if no mention of advance and retreat. • Top of Level 2+ likely when response is clear about ice reworking previously deposited material eg drumlins. • Level should also reflect degree of focus on lowland; no acknowledgement of lowland Level 1 max.
AO4	• See generic mark scheme.

Or

6 **(a)** Describe the types and rates of ice movement in cold and warm-based glaciers. **[20]**

(b) Explain how drainage patterns can be modified by the advance and retreat of ice across a landscape. **[25]**

(a)

Candidates will have studied the glacier system within which, in the Spec, types and rates of movement are explicitly stated. The question is clear in its request for both aspects of ice movement to be covered.	
AO1+ AO2	• Level 2 max if either basal sliding or ice deformation absent. • Basal sliding – accounts for up to 90% of movement in warm based glaciers – slippage of bottom of glacier over thin layer of water just a few mm thick. Reduces frictional drag. • Regelation creep – warm based – movement over minor irregularities in surface under ice. Higher pressures on up-glacier side of obstacle lead to melting and water migrates to lee side of obstacle where it refreezes. • Bed deformation – relate to widespread movement of ice masses, usually warm based, over unconsolidated sediment, saturated with water due to glacier bed being at pressure melting point - a likely Level 3 indicator. • Internal deformation – both warm and cold based. Slippage within and between ice crystals, at its maximum at base were both stresses and, in the case of cold ice, temperatures are at their highest. • Glacial surges – warm based but can occur in cold. Initiated when ice in upper ablation zone becomes unstable, seems to be associated with substantial accumulation of basal water, and moves rapidly down-glacier, c. 5 metres/hour. Mention of this type of movement likely to indicate a Level 3 response.
AO3	• Level 1 max if no mention of cold/warm based glaciers. • Level 3 for types and rates of movement.
AO4	• See generic mark scheme.

(b)

Glacial advance and retreat can have a significant effect on the fluvial systems operating before ice moved through a landscape. The term drainage patterns can be given a wide interpretation as indicated below.	
AO1+ AO2	• River diversion due to a number of causes at different scales eg watershed breaching eg River Severn at Ironbridge; diversion due to terminal moraine blocking former path eg urstromtäler of North European Plain, rivers Oder and Elbe for example. • Glacial overflow/spillway eg Lake Pickering. • River capture often associated with breached watersheds. • Straightening of valleys. • Modification of long profile eg corrie lakes; ribbon lakes; rapids. • Lochans. • Kettle holes. • Whole scale (regional) deposition obscuring drainage patterns through infilling of former valleys eg East Anglia – a likely Level 3 indicator.
AO3	• An appreciation that ice moves into an existing landscape is a likely Level 3 indicator.
AO4	• See generic mark scheme.

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Option 4: Hot Arid and Semi-arid Environments

Either

7 **(a)** With the help of labelled diagrams, describe the following landforms; alluvial fan and bahada; wadi; inselberg. **[20]**

(b) Explain how past, as well as present, processes contribute towards the development of desert landforms. **[25]**

(a)

These three landforms are explicitly mentioned in the Spec and so should be well known to candidates.	
AO1+ AO2	• Inclusion of scale a possible Level 3 indicator. • Alluvial fan – fan- or cone-shaped mass of material, usually sand and gravel, deposited by a stream where it emerges from the constriction of a narrow valley at a mountain front, spreading on to a plain or into a wider trunk valley. Most have a radius of > 8 km but can be much larger. Apex points upstream, is the thickest part of the mass and has steepest gradient – likely Level 3 indicator. Sediment calibre graded across fan from larger at apex to finer where fan ends. Mean surface gradient in range 1^0 – 5^0. Stream breaks up into number of distributaries as it crosses fan. Adjacent fans may coalesce and extend some distance from mountain front to form a bahada. • Wadi – valley, often gorge-like but can be broad. Steep valley walls often covered with thick layers of weathered material, incised by gullies or with alluvial fans – a likely Level 3 indicator. May be dry but can contain an intermittent stream after a storm. Braided channels. Many are partly sand-filled. • Inselberg – steep-sided isolated hill of solid rock, rising abruptly from a plain. Can be rectangular in profile or domed – a likely Level 3 indicator.
AO3	• Level 1 for just one landform; Level 2 for two and Level 3 for three + four.
AO4	• See generic mark scheme.

(b)

Although linked with the landforms explicitly given in (a), the question is phrased so as to allow candidates to offer any landforms they deem appropriate. It is a key idea in the understanding of arid and semi-arid environments, that past processes are important when studying present day landforms. As the climates of deserts change over long timescales, the processes at work also change.	
AO1+ AO2	• Effects of running water important element – features owe their form, in part, to effects of flowing water in past millennia – this point required for top Level 2+. • Canyons are a useful eg here reflecting both water action and tectonic uplift. • Mesas, buttes, inselbergs – relic hills cut out + isolated by water erosion. • Bornhardts – dome-shaped granitic inselbergs developed as a result of deep chemical weathering of past more humid climate. Include tors here. • Salt lakes + chotts are relevant here.
AO3	• Level 1 for a simple description making no distinction between past/present. • Level 2+ once the response begins to link landforms with past + present processes.
AO4	• See generic mark scheme.

Or

8 **(a)** Describe the characteristics of soils in hot arid and semi-arid environments. **[20]**

(b) Explain how plants have adapted to living in hot arid and semi-arid environments. **[25]**

(a)

Soils (and vegetation) is a major heading within this Option. Here we are expecting a clear description of the soils typically found in these environments.	
AO1+ AO2	• Low organic content, > 3%. • Dominantly mineral soils of an immature and skeletal type. • Not particularly subject to leaching so soluble salts tend to accumulate at a depth in the profile equal to the depth of percolation or to level of water table. This point required for level 2 in AO2. • Concentration of salts – solonchaks (white alkali soils) when sodium chloride dominates and solonetz (black alkali) when sodium carbonate dominates. • Generally low clay content – mostly sandy or silty in texture = very free draining if no crust development.
AO3	• Level 1 max if no mention of organic content. • Level 2 max if no mention of salts.
AO4	• See generic mark scheme.

(b)

The key assessment task here is to identify the adaptations and how they link with arid + semi-arid environments	
AO1+ AO2	• Range of climate conditions but all locations considered here are short of water for continuous or even regular seasonal plant growth. • Plants need to adapt to such conditions eg halophytes. • Lack of moisture in the soil results in adaptations eg xerophytes – succulents store water in their leaves, stems and roots eg cacti; prickly pear + euphorbias. Large root system relative to plant mass above ground. Phreatophytes – long tap roots which seek out deep water eg date palm, tamarisk and mesquite. • Other plants evade drought by having a life cycle that sees them as seed capable of surviving for many years in the soil until rain arrives. The complete life cycle is then accelerated through a few weeks so that the next generation of seed is produced ready to survive the next prolonged drought. • Many desert plants are woody and spiny to prevent being grazed. Spines can replace leaves as this reduces water loss and a woody structure prevents collapse when water is particularly scarce.
AO3	• Level 1 max if simply a description of the plants typically found in these environments. • Level 2+ once the response begins to link plants with the environment. • Distinction amongst plants in different types of arid environment likely to indicate Level 3.
AO4	• See generic mark scheme.

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Option 5: Applied Climatology

Either

9 **(a)** Describe ways in which meteorological conditions affect human comfort in different parts of the world. **[20]**

(b) Explain how building design provides 'human comfort' in different climates. **[25]**

(a)

Human comfort is a major heading within this Option. It is the range of temperatures and humidity values which humans feel comfortable within.	
AO1+ AO2	• Air temperature, relative humidity and wind speeds primarily influence human comfort. • High temperatures associated with high humidity eg equatorial regions. • High temperatures associated with low humidity eg desert regions. • High wind speeds associated with low temperatures eg higher latitudes – mention of wind chill a likely Level 2 + indicator. • High wind speeds associated with higher temperatures eg mid-latitude.
AO3	• Level 1 max if no spatial contrasts. • Broad regional generalisations are appropriate, but credit references to specific locations.
AO4	• See generic mark scheme.

(b)

The climatic protection offered by buildings is explicitly mentioned in the Spec We must be open to a wide variety of appropriate exemplification offered here. It is also a question that allows either breadth or depth in the approach of the response.	
AO1+ AO2	• Countering high temperatures and high humidity – verandas/porch allowing space 'outside' the house eg south-eastern USA; houses raised up off the ground to allow air to circulate eg tropics and sub-tropics. • Countering high temperatures alone – thick walls with small openings, often with an internal courtyard shaded by awnings and trees eg North Africa, Middle East. • Countering low temperatures – traditionally thick walls with small openings eg higher latitudes; references to modern insulation relevant allowing for example more glass to be used. • Countering high intensity sun – large overhang to shade walls and windows. • Countering high rainfall – steep pitch and large overhang.
AO3	• Level 1 when no spatial contrast. • Level 2 + when response links building design with human comfort.
AO4	• See generic mark scheme.

Or

10 (a) Describe the micro-climatic modifications brought about by buildings. **[20]**

(b) Explain how urban morphology influences urban climate. **[25]**

(a)

The modification of the climate adjacent to buildings is part of the Urban climate section in this Option. It is separate, however, from the heading dealing with the energy budgets of urban areas in their entirety.	
AO1+ AO2	• Temperature – buildings cast shade. • Sunlight – shade. • Wind – higher wind speeds between buildings, especially high-rise; shopping centres. • Wind – smaller scale eddies and turbulence are also found. • With increasing height of building the frictional effect reduces and so wind speeds are higher.
AO3	• Level 1 max for those responses dealing only with the larger scale issues of urban energy budgets eg urban heat islands.
AO4	• See generic mark scheme.

(b)

The shape of urban areas can have a significant influence on urban climates.	
AO1+ AO2	• Urban morphology – shape in three dimensions is relevant. • Winds and air movement - enhanced friction over urban areas leads to lower wind speeds in general. Within an urban area there will be variations in friction eg lower friction over open areas (parks; playing fields; lakes). • Winds and air movement – funnelling of wind through urban ‘canyons’ eg CBD and shopping centres. • Temperature – role of river valleys eg cold air sinks within urban heat island. • Temperature – shape in terms of plan will influence pattern of isotherms.
AO3	• Level 1 max if no reference to morphology. • Level 2+ once idea of morphology is introduced and discussed.
AO4	• 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 pattern of food shortages and famines in LEDCs. **[20]**

(b) Explain how food shortages and famines are the result from both physical and human factors. **[25]**

(a)

Within the heading of food supplies, the spatial distribution of food shortages and famines is explicitly mentioned.	
AO1+ AO2	• Famine – relatively sudden event involving mass mortalities from starvation within a short period. • Food shortage – endemic nutritional deprivation on a persistent basis. • LEDC clearly divided between Asia + latin. America and Africa – in latter there were some regions where food output per person actually fell. • Number of people suffering food shortage generally fallen in Latin America and Caribbean and most of Asia but risen in sub-Saharan Africa. • Famine – increasingly seen as a decline in the access to food rather than a decline in the available food supply – a likely Level 3 indicator. Either way, famines have a spatial pattern with sub-Saharan Africa often figuring. The more convincing responses are likely to identify locations throughout the LEDCs where famine has struck. • Reference to temporal pattern a possible Level 3 indicator.
AO3	• Level 3 reserved for response distinguishing between food shortages + famines.
AO4	• See generic mark scheme.

(b)

Causes of food shortages and famines are stated in the Spec and the question makes it clear that both physical and human factors should be discussed. Causation of famine and food shortages has often been linked to natural disasters, population growth and war. Recent analyses focussed on access to and control over food resources.	
AO1+ AO2	• Physical – often associated with natural disasters eg climate; flooding; tropical storm. • Human – rapid pop. Growth + mass poverty often linked with mass starvation; food security and entitlement are key ideas and likely top of level 2+ indicator; role of government/political factors eg China/N. Korea/Zimbabwe; limited infrastructure restricting distribution; use of land for export crops and or industrial crops eg pineapples/cotton rather than domestic food; land tenure. • Some examples link physical with human eg dust bowl of USA.
AO3	• Bottom of Level 2 if only either physical/human are included. • Distinction between food shortage/famine a likely top of Level 2+ indicator. • Historical examples relevant eg wars; Irish potato famine.
AO4	• See generic mark scheme.

Or

12 **(a)** Describe the diffusion of agricultural innovations. **[20]**

(b) Explain variations in the pattern of diffusion of agricultural innovation. **[25]**

(a)

Agricultural innovations and their spatial diffusion are highlighted in the Spec. The two elements required are stated in the question.	
AO1+ AO2	• Rate of diffusion – the model has a classic S shaped cumulative form with a slow rate of adoption at first, then an accelerated period followed by a slowing up in the rate of adoption. The graph also indicates spatial contrasts in the rate of adoption, a point that when described convincingly might indicate a Level 3 response. • Spatial spread – distance from the point of origin is important. Without this a response is unlikely to be more than bottom of Level 2 in AOs 1 and 2. Descriptions should point out the ripple effect. • Higher Level responses might include references to the acceleration both temporally and spatially of innovation when farmers migrate eg 19th century European migrations to North and South America.
AO3	• Level 1 max if either rate/spread omitted. • Level 3 likely when reference made to temporal changes.
AO4	• See generic mark scheme.

(b)

A key element in the study of agricultural systems is the influence of human and cultural factors. This is evident in contrasts in the pattern of diffusion of agricultural innovations, the focus of this sub-part.	
AO1+ AO2	• Physical factors – where environmental conditions favour the use of an enterprise, it is more likely that there will be innovation concerning that particular type of farming eg spread of hybrid maize in USA ie Corn Belt outwards; physical barriers eg mt ranges. • Farm size – generally the larger the size of farm the more open the farmer is to new ideas. This is related to other factors such as capital availability and education. • Specialist enterprise - the more specialist the farm, the more likely to take up an innovation. • Government influence – where this is available then innovation more likely. • Communications – availability of TV and radio and most recently ICT, enhance the spread of new ideas. A Level 3 point in AO2 might be that ICT can diminish the role of linear distance. • MEDC/LEDC contrast – innovation more rapid in former than latter. • Cultural eg role of education; avoidance of risk factors eg subsistence farmers in LEDCs.
AO3	• A clear factor-led discussion is likely to reach top of Level 2+.
AO4	• See generic mark scheme.

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

13 (a) Describe the influence of labour on the location of manufacturing. **[20]**

(b) Explain why the consequences of manufacturing unemployment vary from place to place. **[25]**

(a)

Industrial location factors is a major heading within this Option and the influence of labour is explicitly stated.	
AO1+ AO2	• On average labour accounts for c 25% of total costs in manufacturing. • At global scale, considerable differences in labour costs. New International Division of Labour relevant here eg growth of manufacturing in LEDCs and NICs. • Labour skills – can relate to locational differences between hq, r&d and manufacturing plants; also where skills are particularly specialist, residential preferences of workforce can be an important factor eg high-tech industry – Colorado; Rhone-Alpes. • Labour availability – high rates of unemployment may indicate labour surplus. May attract firms if wage levels are low eg China/Mexico. Within MEDCs the influence is less clear as areas of high rates of unemployment tend to persist despite efforts to attract manufacturing. • Unit labour costs - a likely level 3 indicator. These costs relate wage levels to productivity so that higher quality labour, more expensive, gives higher productivity, higher return.
AO3	• Level 1 max if only labour cost is considered.
AO4	• See generic mark scheme.

(b)

Unemployment and the threat to communities is a sub-heading within the section of the Spec looking at the economic, social and cultural consequences of manufacturing decline. This question asks candidates to explain spatial variations in the effects of manufacturing unemployment.	
AO1+ AO2	• Spatial concentration of some industries means that when they suffer decline, impact of unemployment particularly severe eg steel closures/ship building/textiles. Associated with scale of industry as some sectors have smaller scale producers in a wide variety of locations. • Some industrial regions are more diverse than others. • Some industries require very specialised labour so that if they decline, transfer of skills can be difficult and so unemployment is higher.
AO3	• Level 1 max if no references to ‘place to place’ variations.
AO4	• See generic mark scheme.

Or

14 **(a)** Describe the influence of industrial inertia on the location of manufacturing. **[20]**

(b) Explain how manufacturing industries have developed in LEDCs and NICs. **[25]**

(a)

Industrial location factors is a major heading within this Option and the influence of industrial inertia is explicitly stated.	
AO1+ AO2	• Industrial inertia is the survival of a factory/industry in an area even though the initial advantages of the location no longer exist. • Initial advantages often seen as local raw materials/energy supplies. • Local labour supplies once important but now mechanisation substituted capital for labour. • Inertia mainly due to relative immobility of fixed capital eg plant/machinery – needed for level 3.
AO3	• Level 1 if no reference to manufacturing – experience indicates that some candidat will focus on mining not manufacturing.
AO4	• See generic mark scheme.

(b)

Industrialisation in the particular context of NICs is explicitly stated in the Spec Import substitution, export-led industrialisation, and movement offshore in NICS are three stated phases in the process of industrialisation.	
AO1+ AO2	• Import substitution – domestic industries producing goods previously imported. Reduce need for 'hard' currency to buy imports. Begins multiplier process. • Export-led industrialisation – attracting foreign export-based firms using the country as a manufacturing base. This uses foreign capital as domestic capital inadequate for this next stage of development. Also developing own exporting industries – earning foreign 'hard' currency. • Movement offshore – as industrialisation progresses costs can rise leading to some firms moving out of the NIC into new cheaper labour locations eg Taiwan to China as domestic wage levels + skills improve.
AO3	• Level 1 for just one phase; Level 2 for two and Level 3 for three. • As there are no hard and fast definitions of precisely what is meant by an NIC, we must be open to a variety of examples. Conventionally the Asian tigers, S.Korea/Taiwan/Singapore/Malaysia/Hong Kong were so described as could be Mexico/Brazil. China and India are interesting examples and should both be included here. Level 3 is likely for a response that distinguishes between Pearl River Delta and other regions in China for example.
AO4	• See generic mark scheme.

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

Either

15 (a) Describe theories and models of retailing and office location within the CBD. **[20]**

(b) Explain how planning responses aim to enhance the status and quality of retailing in the CBD. **[25]**

(a)

Retailing and office locations within the CBD is a major sub-heading within this Option. Within this section attention is drawn to theories and models.	
AO1+ AO2	• Bid-rent – identifies contrasts between high-cost locations around the PLVI and the peripheral lower cost sites towards the edge of the CBD. Level 1 max in AO2 if not related to patterns in terms of types of service activity. • Core-frame model – traditionally uses CBHI + CBII to describe where high order activities locate, ie the inner core, cf. The outer core where lower order retailers, theatres, cinemas + public admin tend to be found. Beyond this is the frame where space extensive service activities exist eg car showrooms, transport termini and education. Mention of zones of discard and assimilation likely to indicate Level 3 response. • Zones of active + passive assimilation appropriate. Describe the margins of the CBD + zone of transition eg where solicitors/accountants/dentists take over former large houses, converting them into offices.
AO3	• Level 1 max if response only considers central place theory. • Level 2 is response is set clearly within the CBD but if only one theory/model described. • Level 1 max if no patterns.
AO4	• See generic mark scheme.

(b)

Planning responses are explicitly stated in the Spec in this section on the CBD. We need not be too prescriptive regarding 'planning' as any response will have been through the planning process and is, therefore, valid here.	
AO1+ AO2	• Development of enclosed centres, often joint enterprises between local authority and private capital eg insurance/pension/bank companies. • Improved access, road/rail including light rail eg Manchester metro, park and ride schemes, parking facilities. • Pedestrianisation. • Environmental improvements eg landscaping/cleaning of older buildings. • Planning restrictions on change of use away from retailing.
AO3	• Top of Level 1 max. If no retailing but only offices. • Status and quality required for Level 3.
AO4	• See generic mark scheme.

Or

16 **(a)** Describe the characteristics of: regional shopping centres; retail parks and hypermarkets. **[20]**

(b) Explain the effects of these new retail centres on traditional urban retailing hierarchies. **[25]**

(a)

All three of these types of service location are explicitly mentioned in the Spec.	
AO1+ AO2	• Regional shopping centre - planned edge of town shopping centre, comparable in scale and range of shops to the central shopping area of a large town or city. Offer the full range of high street shops. Dominated by chain stores, multiples. Most are fully enclosed with services such as restaurants/coffee bars/cinemas. Extensive car parking surrounds them. • Retail park – planned edge of town cluster of retailers occupying purpose built buildings, usually single storey. Type of retailers dominated by comparison goods stores often selling 'white goods' or furniture/carpets. Also d-i-y stores and in some locations car dealerships. Allow references to clusters of factory stores. Some include a hypermarket. • Hypermarket – very large retailing outlet, some texts suggest minimum floor area of 2 500 m^2. Tend to specialise in food but also offer a variety of goods eg clothes/household goods including 'white goods'. Extensive parking area often including petrol sales. • Good road access is common to all three.
AO3	• Level 1 for just one type; Level 2 for two and Level 3 for three.
AO4	• See generic mark scheme.

(b)

The effect of these relatively recent retail developments on traditional urban retailing hierarchies is explicitly stated in the Spec.	
AO1+ AO2	• Effect on CBD – can lead to decline especially in space extensive retailers eg furniture/carpets/white goods. • Effect on suburban shopping centres – can lead to decline of smaller retailers especially independents in almost any retailing sector. • Can lead to decline in smaller shopping parades in suburban locations if they are accessible to the new development. • Can have little or no impact on inner city shopping parades as population in these locations tend to have below average car ownership. • Can lead to rise of speciality independents in some suburban locations as relatively affluent use disposable income to purchase high quality food.
AO3	• Level 1 max if focus is on rural retailing. • Level 3 likely for a response identifying a positive effect.
AO4	• See generic mark scheme.

2682/01

Option 9: Tourism and recreation and their Environmental Impacts

Either

17 **(a)** Describe the characteristics of: mass tourism; ecotourism and urban tourism. **[20]**

(b) Explain the contrasting effects of both mass tourism and ecotourism on LEDCs. **[25]**

(a)

Both mass tourism and ecotourism are explicitly mentioned within the International tourism sub-heading. Allow reference to mass tourism in resorts such as Blackpool.	
AO1+ AO2	• Mass tourism – concentration of large numbers of tourists in relatively small areas eg resorts; product offered under mass production conditions; relatively accessible locations; significant physical, social + cultural impact on locality; economically dominated by large firms, some TNCs; can be highly seasonal. • Ecotourism – small scale; customised product and production; relatively remote locations; minimal physical, social + cultural impact – often designed to be benign or advantageous to locality; dominated by small scale specialist firms; can be highly seasonal. • Urban tourism – tourism exploiting some resource, usually cultural or heritage located in an urban area. Could be at a variety of urban scales eg Hay-on-Wye Book festival or Edinburgh festival. Level 3 in AO2 for mention of recent growth in industrial heritage in urban areas eg Saltaire; Albert Docks, Liverpool.
AO3	• Level 1 max if only one of the two mentioned. • Level 2 if two are mentioned. • Level 3 if three are mentioned.
AO4	• See generic mark scheme.

(b)

The impact of these types of tourist development is explicitly mentioned in the Spec. This sub-part restricts the context to LEDCs but there is a wealth of exemplar material available to candidates. The concept of sustainability is likely to be feature of responses, especially for Levels 2 + 3.	
AO1+ AO2	• Physical – mass – much impact mainly seen as negative whereas eco-has minimal effect. Comments about energy + water consumption might be a useful level 3 indicator. Visual intrusion, noise and light as well as comments about building impacts. Extension to include infrastructure eg airports and ports to handle large scale cruise liners appropriate. • Economic – mass – leakage likely to feature for level 2. Ecotourism includes much local benefit. Low volume, high cost/return/value is the phrase often used. Issues of dependency appropriate here for mass. • Cultural – mass - much impact mainly seen as negative whereas eco- has minimal effect.
AO3	• Top of Level 1 if MEDC context only.
AO4	• See generic mark scheme.

Or

18 **(a)** Describe the role of tourism and recreation in national and regional development strategies. **[20]**

(b) Explain how changes in transport technology since the 18th century have affected patterns of international tourism**.** **[25]**

(a)

In the Spec, this topic comes under the heading of 'The influence of government'. This is the most likely context responses will be set in but include as credit worthy mention of organisations such as National Trust. There is often an integrated approach so the boundaries between government and NGOs are blurred.	
AO1+ AO2	• Level 3 in AO2 when different scales of government acknowledged. • National tourist boards – advertising campaigns to increase numbers of tourists. • Regional development agencies including tourist boards – advertising campaigns to increase numbers of tourists. • Part of the justification for some infrastructure schemes is their ability to facilitate tourism eg Severn bridge crossing; tunnel under River Conwy; Channel tunnel.
AO3	• Level 3 likely if distinction made between tourism and recreation. • Level 2 max if distinction between regional/national not clear.
AO4	• see generic mark scheme.

(b)

This sub-part invites candidates to consider the links between changes in transport technology and patterns of international tourism. Two key aspects for assessment are the quality of the links and how well patterns are picked up on.	
AO1+ AO2	• Early transport change had very little effect – time + cost distances still considerable. • First quarter of 20th century saw growth in international tourism as wealthy able to use boats/trains/planes to move more easily within Europe for example – a possible level 3 indicator. • Post-war period saw explosion in tourism travel – air. • Distinction between large scale movements to Mediterranean resorts and smaller scale movements to places such as Kenya a possible level 3 indicator. • Recent growth in cruises as ship technology improved eg Caribbean/Baltic. • Allowed access to remote destinations eg Andes/Vietnam.
AO3	• Level 1 max if the links are not made. • Bottom of Level 2 max if patterns are ignored.
AO4	• See generic mark scheme.

2684 Synoptic Geography: People and Environment Options

Option 1: Geographical Aspects of the European Union

1 'The Economic and Monetary Union in the EU results in changes in patterns of investment by multi-national companies.' Discuss the validity of this statement. **[60]**

Candidates should be aware that economic and monetary are not the same.
Pattern covers type, direction and volume of investment.

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of a range of implications of economic and monetary union together with a variety of patterns of investment by multi-national companies (both internal and external to the EU). These should be well exemplified.

Level 3 (5-6 marks)
Candidates will have clear knowledge of a range of implications of economic and monetary union together with patterns of investment by multi-national companies (both internal and external to the EU). These should be exemplified.

Level 2 (3-4 marks)
Candidates will have sound knowledge of some of the implications of economic and monetary union together with a limited range of patterns of investment by multi-national companies. These will be limited in exemplification.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of some of the implications of economic and monetary union and a limited or vague knowledge of patterns of investment by multi-national companies.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the inter-relationship of economic and monetary union and the pattern (type, direction and volume) of investment by multi-national companies. A clear cause-effect between the union and pattern of investment can be expected. This may be underpinned by an effective use of concepts or theories to explain causes of differences in patterns of investment eg backwash v spread.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the inter-relationship of economic and monetary union and the pattern (type, direction and volume) of investment by multi-national companies. Some cause-effect between the union and pattern of investment can be expected.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the inter-relationship of economic and monetary union and the pattern (type, direction and volume) of investment by multi-national companies. A limited, if any, appreciation of the cause-effect between the union and pattern of investment can be expected.

Level 1 (0-5 marks)
Candidates will demonstrate a limited or vague understanding of the links between the economic and monetary union and the pattern of investment by multi-national companies.

AO3 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 impact of economic and monetary union on the pattern of investment by multi-national companies to evaluate whether there have been changes (eg net gain or loss, core v periphery, concentration v dispersion etc) and whether these are the direct or indirect result of the EMU. Candidates at this level will argue that changes may vary with location (core v periphery, north v south etc) scale (local, regional, national) or with time/development.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the impact of economic and monetary union on the pattern of investment by multi-national companies to evaluate the implications for the EU. Candidates at this level will argue that implications may vary with location (core v periphery, north v south etc) or with time/development.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the impact of economic and monetary union on the pattern of investment by multi-national companies to evaluate the implications for the EU.

Level 1 (0-5 marks)
Candidates apply limited or vague knowledge and critical understanding of the impact of economic and monetary union on the pattern of investment by multi-national companies to offer little, if any, evaluation of the implications for the EU.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

2 'Isolation, rather than physical geography, is the greatest barrier to regional development in the E.U.' Consider the accuracy of this view. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of levels of regional development in the EU as well as clear knowledge of the level of isolation and the nature of the physical geography of a range of regions in the EU. Knowledge of relevant concepts or models eg core periphery model can also be expected.

Level 3 (5-6 marks)
Candidates will have clear knowledge of levels of regional development in the EU as well as knowledge of the level of isolation and the nature of the physical geography of some of regions in the EU. Knowledge of relevant concepts or models eg core periphery model may also be expected.

Level 2 (3-4 marks)
Candidates will have sound knowledge of levels of regional development in the EU as well as knowledge of the level of isolation and the nature of the physical geography of two or more regions in the EU. There is limited, if any, knowledge of relevant concepts/models.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of levels of regional development in the EU and limited, if any, knowledge of the nature of the physical geography of any regions in the EU.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the cause-effect of isolation (transport costs etc) and physical geography (climate, relief, coastlines/rivers, soils, minerals etc) on the development of regions – both negative and positive. This may be underpinned by an effective use of concepts or theories to explain causes of differences in patterns of regional development.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the cause-effect of isolation and physical geography on the development of regions – both negative and positive. Some understanding of the causes of differences in regional development is expected.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the cause-effect of isolation and physical geography on the development of regions. Some limited understanding of the causes of differences in regional development is expected.

Level 1 (0-5 marks)
Candidates will demonstrate a limited or vague understanding of the cause-effect of isolation and physical geography on the development of regions.

AO3 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 differences in regional development to evaluate the accuracy of the statement. Candidates should appreciate that isolation is relative and as such is constantly changing. They may also effectively show how EU responses may be helping or hindering the solution of these differences. Candidates may recognise that the accuracy of the statement will vary with: scale, location eg Core v periphery, time (eg backwash v spread), and with the type/aspect of physical geography eg climate v minerals in Sweden.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the causes of differences in regional development to evaluate the accuracy of the statement. Candidates may recognise that the accuracy of the statement will vary with: location eg Core v periphery, time (eg backwash v spread), and with the type/aspect of physical geography.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the causes of differences in regional development to offer a limited evaluation of the accuracy of the statement. Candidates may recognise that the accuracy of the statement will vary with the aspect of physical geography.

Level 1 (0-5 marks)
Candidates apply limited or vague knowledge and critical understanding of the causes of differences in regional development to offer a little or no evaluation of the statement.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

3 Evaluate the effectiveness of the Common Fisheries Policy. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of the reasons for, and the mechanisms of the Common Fisheries policy (CFP) both direct – quotas, control of fleet size, structural funds – and indirect eg research. Detailed knowledge of the relative success of these approaches is also expected.

Level 3 (5-6 marks)
Candidates will have a clear knowledge of the reasons for, and the mechanisms of the Common Fisheries policy (CFP) both direct and indirect and their relative success in making fishing sustainable.

Level 2 (3-4 marks)
Candidates will have sound knowledge of the reasons for, and the mechanisms of the Common Fisheries policy (CFP) and limited knowledge of their relative success in making fishing sustainable.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the Common Fisheries policy (CFP) together with vague knowledge of their relative success in making fishing sustainable.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of why the CFP was needed and how the approaches it has adopted were designed to impact on reducing over-fishing. A clear cause-effect will be demonstrated between strategy and impact. A clear understanding of what sustainable fishing means is expected.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of why the CFP was needed and how the approaches it has adopted were designed to impact on reducing over-fishing. Cause-effect will be demonstrated between strategy and impact. An understanding of what sustainable fishing means is expected.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of why the CFP was needed and how some of the approaches it has adopted were designed to impact on reducing over-fishing. Some limited cause-effect will be demonstrated between strategy and impact.

Level 1 (0-5 marks)
Candidates will demonstrate a limited or vague understanding of why the CFP was needed. Some vague, if any, cause-effect will be demonstrated between strategy and impact.

AO3 Application of knowledge and critical understanding in unfamiliar contexts (0-22 marks)

Level 4 (18-22 marks)
Candidates apply their detailed knowledge and understanding of the CFP's impacts to evaluate whether the impact (negative or positive) on making fishing more sustainable in EU waters is effective. Some appreciation that this is not easy with a mobile trans-national resource and that its effectiveness will vary with: scale, time, location (eg North Sea v Atlantic), and may vary with individual fishing communities can be expected at this level. There will be a clear evaluation of the comparative effectiveness of the CFP.

Level 3 (12-17 marks)
Candidates apply their knowledge and understanding of the CFP's impacts to evaluate whether the impact on making fishing more sustainable in EU waters is effective. Some appreciation that this is not easy with a mobile trans-national resource and that its effectiveness will vary with location and may vary with individual fishing communities can be expected at this level. There will be an evaluation of the comparative effectiveness of the CFP.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and understanding of the CFP's impacts to offer a limited evaluation of whether the impact on making fishing more sustainable in EU waters is effective.

Level 1 (0-5 marks)
Candidates apply limited or vague knowledge and understanding of the strategies' impacts to produce a limited, if any, evaluation of the impact on making fishing more sustainable.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

Option 2: Managing Urban Environments

4 To what extent are self-help schemes the most successful response to housing problems in LEDCs? **[60]**

Many will see this as the 'shanty town question' but self-help and housing problems are quite wide in interpretation.

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of examples of the housing problems in LEDCs (including shortage of housing, poor building quality, poor locations, lack of amenities etc) and of a range of self-help schemes.

Level 3 (5-6 marks)
Candidates will have clear knowledge of examples of the housing problems in LEDCs (including shortage of housing, poor building quality, poor locations, lack of amenities etc) and of self-help schemes.

Level 2 (3-4 marks)
Candidates will have sound knowledge of the housing problems in LEDCs and of self-help schemes. Knowledge of appropriate examples may be limited.

Level 1 (0-2 marks)
Candidates will have only limited or vague knowledge of the housing problems in LEDCs and of self-help schemes. Knowledge of appropriate examples may be vague or missing.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the relationship between various types of self-help schemes and a variety of housing problems (eg structural, services, social etc). Some understanding of the relative level of success of a range of schemes is expected.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the relationship between self-help schemes and a variety of housing problems. An understanding of the relative level of success of a range of schemes is expected.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the relationship between self-help schemes and a variety of housing problems. An understanding of the relative level of success of at least two schemes is expected.

Level 1 (0-5 marks)
Candidates will demonstrate limited or little understanding of the relationship between self-help schemes and a variety of housing problems.

AO3 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 how and why self help schemes impact on a variety of housing problems to evaluate the extent to which such schemes have solved (or are solving) the problems. Candidates may suggest more successful alternatives. At this level an appreciation that the success will vary with scale (both geographical and size of the problem), the nature of the housing problem(s), location eg inner v outer, over time (there is a cycle effect) and will vary between groups eg rich v poor is expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of how and why self help schemes impact on a variety of housing problems to evaluate the extent to which such schemes have solved the various housing problems. At this level an appreciation that the success will vary with scale and the nature of the housing problem(s), and will vary between groups in the community is expected

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of how and why self help schemes impact on a variety of housing problems to offer a limited evaluation of the extent to which such schemes have solved the various housing problems.

Level 1 (0-5 marks)
Candidates apply limited or vague knowledge and understanding of self help schemes' impact on a variety of housing problems to offer a vague, if any, evaluation of the statement.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

5 Evaluate strategies used to reduce urban multiple deprivation in MEDCs. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of the causes of multiple deprivation and a range of strategies that have been used to reduce this in inner cities (such as slum clearance, redevelopment, Neighbourhood Renewal etc) in MEDCs. Detailed examples are expected from one or more inner urban areas demonstrating knowledge of the relative success of the strategies.

Level 3 (5-6 marks)
Candidates will have clear knowledge of the causes of multiple deprivation and a variety of strategies that have been used to reduce this in inner cities. Exemplification is expected from one or more inner urban areas demonstrating knowledge of the relative success of the strategies.

Level 2 (3-4 marks)
Candidates will have a sound knowledge of the causes of multiple deprivation and a variety of strategies that have been used to reduce this in inner cities. Some limited exemplification is expected from one or more inner urban areas demonstrating limited knowledge of the relative success of the strategies.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the causes of multiple deprivation and a variety of strategies that have been used to reduce this in inner cities. Exemplification will be limited or missing.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate a detailed understanding of the cause-effect relationship between the approaches of the strategies and the relative success of their impact on multiple deprivation (both positive and negative) and its causes.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the cause-effect relationship between the approaches of the strategies and the relative success of their impact on multiple deprivation and its causes.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the cause-effect relationship between the approaches of the strategies and some understanding of the relative success of their impact on multiple deprivation and its causes.

Level 1 (0-5 marks)
Candidates will demonstrate a limited or vague understanding of the cause-effect relationship between the strategies and their relative success.

AO3 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 multiple deprivation to evaluate how successful the various strategies used have been in reducing the deprivation in inner cities. Some appreciation that this may vary with location eg north v south, scale, time or even between groups eg different social or ethnic groups, or depending on the nature of the cause, is expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the causes of multiple deprivation to evaluate how successful the various strategies used have been in reducing the deprivation in inner cities. Some appreciation that this may vary with location, or even between groups eg different ethnic groups, or depending on the nature of the cause may be expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the causes of multiple deprivation to offer a limited evaluation of how successful the various strategies used have been in reducing the deprivation in inner cities.

Level 1 (0-5 marks)
Candidates apply only limited or vague knowledge and critical understanding of the causes of multiple deprivation to offer a limited or vague evaluation of how successful the various strategies used have been.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

6 Evaluate strategies used to tackle pollution in urban areas. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will demonstrate a detailed and well exemplified knowledge of the main types (air, water, solid, visual, noise, thermal etc) causes (traffic, waste disposal, industry, buildings etc) and consequences of pollution in urban areas. Detailed knowledge is expected of a range of strategies used to reduce the effects and their relative effectiveness. Detailed knowledge of appropriate examples is expected.

Level 3 (5-6 marks)
Candidates will demonstrate a clear and exemplified knowledge of the main types and causes of pollution in urban areas. Clear knowledge is expected of a variety of strategies used to reduce the effects and their relative effectiveness. Sound knowledge of appropriate examples is expected.

Level 2 (3-4 marks)
Candidates will demonstrate a sound and exemplified knowledge of the main types and causes of pollution in urban areas. Limited knowledge is expected of a variety of strategies used to reduce the effects and their relative effectiveness. Knowledge of appropriate examples is expected.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the main types and causes of pollution in urban areas and of the strategies used to reduce the effects.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of how and why urban areas suffer pollution. A clear grasp of cause-effect relationships is expected as is an understanding of the relative success of remedial strategies (such as traffic controls, recycling, laws eg smokeless zones, taxes, land use zoning, decentralisation, ‘green lungs’ etc).

Level 3 (12-17 marks)
Candidates will demonstrate clear understanding of how and why urban areas suffer pollution. A grasp of cause-effect relationships is expected as is some understanding of the relative success of remedial strategies.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of how and why urban areas suffer pollution and an appreciation of the relative success of remedial strategies.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of how and why urban areas suffer pollution.

AO3 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 and consequences of pollution in urban areas to evaluate the relative effectiveness of a range of remedial strategies. At this level some appreciation that effectiveness may vary with: scale eg large cities v market towns, location eg LEDC v MEDC, types of pollution/cause and variations over time can be expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the causes of pollution in urban areas to evaluate the relative effectiveness of a variety of remedial strategies. At this level some appreciation that effectiveness may vary with: location eg LEDC v MEDC and types of pollution/cause can be expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the causes of pollution in urban areas to offer a limited evaluation of the relative effectiveness of at least two remedial strategies. At this level some appreciation that effectiveness may vary can be expected.

Level 1 (0-5 marks)
Candidates apply limited or vague knowledge and critical understanding of the causes of pollution in urban areas and the relative effectiveness of remedial strategies and offer little, if any, evaluation.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

Option 3: Managing Rural Environments

7 Evaluate the effectiveness of strategies to protect rural landscapes. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of a range of strategies used to protect rural landscapes (such as National Parks, AONBs, SSSIs, Nature reserves, greenbelts etc) as well as their impacts (positive and negative) on a range of rural landscapes. Detailed exemplification is expected.

Level 3 (5-6 marks)
Candidates will have a clear knowledge of a range of strategies used to protect rural landscapes as well as their impacts (positive and negative) on a range of rural landscapes. Sound exemplification is expected.

Level 2 (3-4 marks)
Candidates will have a sound knowledge of a range of strategies used to protect rural landscapes as well as at least two of their impacts on rural landscapes. Limited exemplification is expected.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the strategies used to protect rural landscapes as well as any of their impacts on rural landscapes. Exemplification will be limited or missing.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of how a range of various strategies protect (conserve v preserve v manage) rural landscapes and from what, and their relative level of success (both positive and negative).

Level 3 (12-17 marks)
Candidates will demonstrate clear understanding of how a range of various strategies protect (conserve v preserve v manage) rural landscapes and from what, and their relative level of success (both positive and negative).

Level 2 (6-11 marks)
Candidates will demonstrate sound understanding of how various strategies protect rural landscapes and from what, and some understanding of their relative level of success.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of how various strategies protect rural landscapes.

AO3 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 on the rural landscapes of various strategies aimed at protecting them to evaluate their relative effectiveness. An appreciation of the way this may vary with scale, location eg upland v lowland landscapes, and over time or how they may impact on different aspects or groups of/in the rural landscape can be expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the impacts on the rural landscapes of various strategies aimed at protecting them to evaluate their relative effectiveness. Some appreciation of the way this may vary with location eg upland v lowland landscapes or how they may impact on different aspects or groups of/in the rural landscape can be expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the impacts on the rural landscapes of various strategies aimed at protecting them to offer a limited evaluation of their relative effectiveness.

Level 1 (0-5 marks)
Candidates have limited or vague application of knowledge and critical understanding of the impacts on the rural landscapes of various strategies aimed at protecting them and so offer little, if any, evaluation.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

8 To what extent do recreation and tourism conflict with farming? **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of the characteristics of a variety of types of farming (intensive v extensive etc) and the types of conflicts with these that recreation and tourism can result in (trespass, pollution, trampling, fires, spreading of disease/weeds as well as those threats to recreation/tourism eg monoculture [green desert idea], agri-chemicals, drainage, use of machinery etc). Detailed exemplification of a range of conflicts is expected at this level.

Level 3 (5-6 marks)
Candidates will have clear knowledge of the characteristics of a range of types of farming and some of the types of conflicts with these that recreation and tourism can result in. Exemplification of a variety of conflicts is expected at this level.

Level 2 (3-4 marks)
Candidates will have sound knowledge of the characteristics of farming and the types of conflicts with these that recreation and tourism can result in. Limited exemplification of a variety of conflicts is expected at this level.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of a few examples of the conflicts between farming in general and recreation and tourism.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the cause-effect of why different types of farming and tourism/recreation are likely to conflict (such as different aims, access, land ownership, activities, costs/income, infrastructure needs etc). Some understanding of a range of underlying physical, economic, social and political factors/changes that have led to the growth of both of these rural activities is expected at this level.

Level 3 (12-17 marks)
Candidates will demonstrate clear understanding of the cause-effect of why different types of farming and tourism/recreation are likely to conflict.
An understanding of a range of underlying physical, economic, social and political factors/changes that have led to the growth of both of these rural activities is expected at this level.

Level 2 (6-11 marks)
Candidates will demonstrate sound understanding of the cause-effect of why farming and tourism/recreation are likely to conflict.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of why farming and tourism/recreation are likely to conflict.

AO3 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 range of conflicts between recreation/tourism and different types of farming to evaluate if these conflicts are actually inevitable. At this level some appreciation of how this may differ with: scale, location eg Yorkshire dales v highlands of Scotland, the nature of the types of farming (pastoral v arable) and recreation eg sailing v rambling, nature of the area eg coastal v inland is expected. Indeed farmers are increasingly seeing that the two activities can be complementary if effectively managed.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the range of conflicts between recreation/tourism and farming to evaluate if these conflicts are actually inevitable. At this level some appreciation of how this may differ with: location and the nature of the types of farming and recreation, is expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the conflicts between recreation/tourism and farming to offer a limited evaluation of whether these conflicts are actually inevitable. At this level some appreciation of how this may vary is expected.

Level 1 (0-5 marks)
Candidates are limited and vague in the application of their knowledge and critical understanding of the conflicts between recreation/tourism and farming to offer very limited, if any, evaluation.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria.

9 'The de-intensification of farming is having a significant impact on rural environments and communities.' Consider the validity of this viewpoint. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed knowledge of the reasons for (set-a-side, imports, conservation, green agenda etc), and the process of, de-intensification of farming and its impact on rural environments (physical and human) and communities. This will be supported by detailed knowledge of a range of examples.

Level 3 (5-6 marks)
Candidates will have clear knowledge of the reasons for, and the process of, de-intensification of farming and its impact on the rural environment (physical and human). This will be supported by clear knowledge of a variety of examples.

Level 2 (3-4 marks)
Candidates will have sound knowledge of the reasons for and the process of, de-intensification of farming and some of its impact on the rural environment. This will be supported by knowledge of at least two contrasting examples.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the reasons for, and the process of, de-intensification of farming and some of its impact on the rural environment.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the cause-effect relationship between de-intensification of farming (eg reduction in agri-chemicals, restoration of field boundaries, less factory farming, set-a-side etc) and the resulting impact on the physical and human rural environments and communities. Candidates should show an understanding of why/how some of these impacts may vary.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the cause-effect relationship between de-intensification of farming and the resulting impact on the physical and human rural environments. Candidates should show some understanding of why/how some of these impacts may vary.

Level 2 (6-11 marks)
Candidates will demonstrate sound understanding of some of the cause-effect relationships between de-intensification of farming and the resulting impact on the physical and human rural environments.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of the impacts of de-intensification of farming on the physical and human rural environments.

AO3 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 impact of the de-intensification of farming on rural environments and communities to evaluate the viewpoint that this impact is 'significant'. At this level some appreciation that the level of significance and nature of the impact will vary with: scale, location eg East Anglia v highlands of Scotland, time and the nature of the area eg soil fertility, relief, type of environment, type of farming eg pastoral v arable, groups in the community etc is expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding of the impact of the de-intensification of farming on the rural environment to evaluate the viewpoint that this impact is 'significant'. At this level some appreciation that the nature of the impact will vary with: location eg East Anglia v highlands of Scotland, and the type of environment, type of farming eg pastoral v arable, type of community is expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding of the impact of the de-intensification of farming on the rural environment to offer a limited evaluation of the viewpoint that this impact is 'significant'. At this level some appreciation that the nature of the impact will vary is expected.

Level 1 (0-5 marks)
Candidates apply only limited or vague knowledge and critical understanding of the impact of the de-intensification of farming on the rural environment to offer very limited, if any, evaluation of the viewpoint.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

Option 4: Hazardous Environments

10 To what extent is it possible to prepare for natural hazards? **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed and well exemplified knowledge of the nature, range and location of natural hazards eg plate boundaries, the tropics, steep relief etc, and the types of preparation areas may have or are possible. Also knowledge of short term v long term hazards can be expected at this level.

Level 3 (5-6 marks)
Candidates will have clear and exemplified knowledge of the nature and location of natural hazards and the types of preparation areas may have. Also some knowledge of short term v long term hazards can be expected at this level.

Level 2 (3-4 marks)
Candidates will have a sound knowledge of the nature and location of at least two contrasting hazards and some knowledge of possible preparation strategies. Exemplification may be limited in detail.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of hazards and how people can prepare for them.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate a detailed understanding of the relationship between the nature of and the frequency of occurrence of hazards and the level of, and approach to, preparation adopted by an area. There will be a detailed understanding of what is meant by ‘hazard’, whether it is physical or economic or in terms of short and long term hazards.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the relationship between the nature of and the frequency of occurrence of hazards and the level of, and approach to, preparation adopted by an area. There will be an understanding of what is meant by ‘hazard’.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the relationship between the nature of and the frequency of occurrence of hazards and the level of, and approach to, preparation adopted by an area. There will be a limited understanding of what is meant by ‘hazard’.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of the relationship between the nature of hazards and the level of, and approach to, preparation adopted by an area.

AO3 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 to evaluate the extent to which natural hazards can be prepared for. Some appreciation that this may vary with: scale (eg local v regional), location eg LEDC v MEDC, the type, scale and frequency of the hazard (or its impacts), the nature of the preparation (and its costs) over time (improved technology) can be expected. A clear conclusion to the evaluation is expected.

Level 3 (12-17 marks)
Candidates apply their clear knowledge and critical understanding to evaluate the extent to which hazards can be prepared for. An appreciation that this may vary with: location eg LEDC v MEDC, the type, scale and frequency of the hazard (or its impacts), and the nature of the preparation (and its costs) can be expected. A conclusion to the evaluation is expected.

Level 2 (6-11 marks)
Candidates apply their knowledge and critical understanding to offer a limited evaluation of the extent. An appreciation that this may vary with location eg LEDC v MEDC can be expected.

Level 1 (0-5 marks)
Candidates apply only limited or vague knowledge and critical understanding and offer little or vague evaluation of the ability to prepare.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

11 ‘Earthquakes rather than volcanic eruptions present a greater risk to human populations.’ Evaluate this statement. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 7-8 marks
Candidates will have detailed and well exemplified knowledge of the risks to human populations posed by earthquakes and volcanic eruptions including both the resulting primary and secondary hazards.

Level 3 (5-6 marks)
Candidates will have clear and exemplified knowledge of the risks to human populations posed by earthquakes and volcanic eruptions including both the resulting primary and secondary hazards.

Level 2 (3-4 marks)
Candidates will have sound knowledge of the risks to human populations posed by earthquakes and volcanic eruptions (although this may not be balanced). Exemplification may be limited or vague.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the risks to human populations posed by earthquakes and volcanic eruptions. Exemplification may be non-existent.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the inter-relationship of the nature of the hazards and the resulting risks (immediate, short and long term – physical, economic, environmental) to the population. Cause and effect will be well understood.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the inter-relationship of the nature of the hazards and the resulting risks to the population. Cause and effect will be understood.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the inter-relationship of the nature of the hazards and the resulting risks to the population. There will be a limited understanding of cause and effect.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of the inter-relationship of the nature of the hazards and the resulting risks to the population. Cause and effect will not be understood.

AO3 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 to evaluate whether earthquakes present a greater risk to human populations. Eruptions may be easier to predict than earthquakes but the 'when' aspect is equally unsure. Some appreciation that it is a complex debate and this will vary with: scale (eg local v global), location eg LEDC v MEDC, nature of the area (eg highland v lowland), population, level of technology, the type, scale and frequency of tectonic risk (eg lava flow v tsunamis) and vary over time can be expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding to evaluate whether earthquakes present a greater risk to human populations. Some appreciation that it is a complex debate and this will vary with: scale (eg local v global), location eg LEDC v MEDC, the type and scale of tectonic risk can be expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding to whether earthquakes present a greater risk to human populations. A limited evaluation is expected.

Level 1 (0-5 marks)
Candidates offer only limited or vague discussions of whether earthquakes present a greater risk to human populations. There will be no attempt at evaluation.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

12 Evaluate the strategies used to reduce hazards resulting from slope instability. **[60]**

AO1 Knowledge of content (0-8 marks)

Level 4 (7-8 marks)
Candidates will have detailed and well exemplified knowledge of the main types of mass movement hazards together with a detailed range of ways that humans seek to reduce or minimise their impacts. This could include: warning, planning, prevention, mitigation etc. There will also be detailed knowledge of types of slope management, both direct eg nets, slope grading, sheet piles, planting trees and indirect eg drainage, banning skiing in certain areas etc.

Level 3 (5-6 marks)
Candidates will have clear and exemplified knowledge of the main types of mass movement hazards together with a range of ways that humans seek to reduce or minimise their impacts. There will also be clear knowledge of types of slope management strategies.

Level 2 (3-4 marks)
Candidates will have sound knowledge of the main types of mass movement hazards together with ways that humans seek to reduce or minimise their impacts. Exemplification may be limited or vague.

Level 1 (0-2 marks)
Candidates will have limited or vague knowledge of the main types of mass movement hazards. There will also be limited or vague knowledge of types of control of mass movement.

AO2 Critical understanding of content (0-22 marks)

Level 4 (18-22 marks)
Candidates will demonstrate detailed understanding of the inter-relationship of management strategies and the causes of a variety of forms of slope instability hazard. There will be also an understanding of how and why humans try to control mass movement to reduce its impact. Cause and effect will be well understood.

Level 3 (12-17 marks)
Candidates will demonstrate a clear understanding of the inter-relationship of management strategies and the causes of a variety of forms of slope instability hazard. There will be also an understanding of how and why humans try to control mass movement to reduce its impact. Cause and effect will be understood.

Level 2 (6-11 marks)
Candidates will demonstrate a sound understanding of the inter-relationship of management strategies and the causes of a variety of forms of slope instability hazard. There will be some understanding of how and why humans try to control mass movement. Limited understanding of cause and effect.

Level 1 (0-5 marks)
Candidates will demonstrate limited or vague understanding of the causes of slope instability hazard. Little will be understood of how mass movement may be controlled. Cause and effect will not be understood.

AO3 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 to evaluate the extent to which management strategies can, or cannot, reduce the impacts of slope instability hazards. Ideas could include: little warning, sheer number of slopes, so common, cost, humans cause it (cost/benefit idea) etc. Some appreciation that strategies used will vary with scale, the nature of the hazard, the nature of the slope, level of technology, cost, likely impact, location eg LEDC v MEDC and vary over time can be expected.

Level 3 (12-17 marks)
Candidates apply their knowledge and critical understanding to evaluate the extent to which management strategies can, or cannot, reduce the impacts of slope instability hazards. Some appreciation that strategies used will vary with the nature of the area and hazard and its location eg LEDC v MEDC can be expected.

Level 2 (6-11 marks)
Candidates apply some of their knowledge and critical understanding to offer a limited evaluation of the extent to which management strategies can, or cannot, reduce the impacts of slope instability hazards.

Level 1 (0-5 marks)
Candidates offer only limited or vague discussions of the strategies used to reduce impacts of slope instability hazards. There will be no attempt at evaluation.

Maximum 11 marks for application and 11 marks for evaluation

AO4 Communication (0-8 marks)

Use generic assessment criteria

2686 Investigative Skills

1 (a) Study the 1:50000 O.S.Map extract of Salisbury showing an area in which an A level geographical investigation is to be undertaken.

(i) State an appropriate title for a geographical investigation, which could be undertaken within the area of the map extract. Outline two sets of data that you would need to collect for your investigation. [5]

Indicative content:

- River studies including flooding problems
- Village and settlement patterns and issues
- Woodland ecology, including comparisons of coniferous and deciduous woodland. Do not need to be named
- Slope comparisons and infiltration rates. Slope aspect level 3
- Microclimate issues.

Point marking

1 mark for an appropriate title. Inappropriate = 0 marks
I mark for a relevant data source and 1 mark for some detail such as GRs locations (x2)

Key notes
Rivers need to be named for title mark.
Care over previously prepared or undertaken field work that is not applicable to map extract.

(ii) Explain how geographical ideas that you have studied influenced your choice of title. [10]

Indicative content:
This is an opportunity for candidates to refer to work that they have covered at AS or A2.

- Theory / accepted views / processes should be clearly explained with diagrams if appropriate.
- The name or names of the authors could be included.
- A clear link established between the theory and aims of the study.

Level marking

Level 3 (8-10)
Clear, well argued discussion. Very firm grasp of theory/ accepted ideas. Relevant answers will show how a title has been derived logically from a theory or process . Correct use of vocabulary is level 3 indicator.

Level 2 (5-7)
Sound, reasonably argued discussion. Firm grasp of theory/ accepted ideas.

Level 1 (0-4)
Limited grasp of the theory/ accepted ideas. Excessive generalisation, lacking depth. Weak discussion.

(iii) Describe and justify how you would use sampling methodologies to collect the data sets identified in (i) [15]

Indicative content:
This question aims to allow the candidate to focus on a variety of techniques from large scale issues such as site selection to smaller scale issues such as transect and quadrat use or questionnaire creation.

- Clear statement of an appropriate range of techniques including specific sampling techniques.
- Candidates should establish a clear link between the techniques and the question/ hypothesis. More able candidates will give specific details related to sites and distances on the map.
- Any stratified sampling should have sub-sets clearly demarcated.
- Sampling intervals should be determined and explained.

Level Mark:

Level 3 (12-15)
A clear understanding and grasp of the necessary techniques. Both effective description and explanation with specific reference to the map [GR top L3] and clear links developed to the data sets.
What, where and why for top level3

Level 2 (7-11)
Sound answer dominated by either description or justification. Less reference to the map and an unconvincing grasp of sampling methodology. Some use of appropriate geographical terminology
Generic sampling essay highlighting methods max 7/8
Generic essay with some application or selection 9/11

Level 1 (0-6)
A basic unbalanced answer with little or no understanding nor reference to the map.
Poor use of geographical terminology.
1 or 2 sampling methods may appear.
Little ref to data sets

(b) Fig.1 shows a questionnaire created by a group of students as part of a geographical investigation into the shopping patterns in a town. Assess the strengths and weaknesses of this questionnaire and suggest improvements. [15]

Indicative content:
The questionnaire breaks most of the accepted conventions and needs reconstruction.
Some open questions need to be replaced by closed structured questions.

- Lack of brevity
- Ambiguous
- Unexplained terminology
- Personal /sensitive Questions
- Poor data grouping in parts
- No thank you or acknowledgements
- Postal or face to face

Level 3 (12-15)
A clear identification of the problem areas within the questionnaire and an effective range of alternative solutions offered.
Need strengths, weaknesses and improvements
Can either have a couple of each very well developed OR
A larger number in less depth.

Level 2 (7-11)
A sound identification of some problem areas with a reasonable range of solutions offered OR
Just s + w mentioned in depth with no improvements OR
The generic questionnaire answer with limited reference to the data given

Level 1 (0-6)
A basic identification of some problems with a limited range of solutions.

2682/01

Fig 1 A questionnaire created by a group of students

Can you answer the following questions?

Name …….. Personal, is it needed?

Age 13-18 19-30 31-45 46-60 61-75 over 75 Geographically sound

Address ……
…… Personal; post code better?

Which shops are you visiting?
……
…… Type of shop better(closed question)

How often do you visit them?
……..
…… Need a frequency table

What is your mean spend per visit?

0-£5 £5 - £10 £10 - £20 £20 - £50 £50 - £100 £100+ overlapping boundaries

How did you get to the shopping centre?
…… list of transport types (closed question)

What do you think about
Traffic congestion?……
……..
Parking? …… All too subjective and
…… so difficult to analyse
Litter?……..……..….
……
Range of shops? ……
……..……

How do you think the shopping centre could be improved?
……
……
……
…… Again too subjective a closed question would be better

Why do you think that many shops have closed down in the last ten years?
……..
……
……
……Relevent to question / hypothesis

2 (a) Study photograph Fig.2 which shows a sand dune area.

(i) State three pieces of information that you would add to the photograph for it to be a valuable resource in a finished report. Briefly outline how any two of these would be useful to your study. [5]

Point mark:

- Scale, north arrow, title , key, date annotations (1 mark per point max 3)
- Uses for clarity / explanation / comparison. (2 marks)

.

(ii) Photographs are valuable sources of secondary data. Describe how photographs such as this one could provide sources of data to enhance an investigation of this area? [10]

Indicative content:

- Planning primary data collection
- Position of transects
- Location of key factors
- Relationships between various key factors
- Changes over time
- Secondary factors
- Use to plot data collected to show changes over the area.

Level 3 (8-10)
- Make use of the stimulus material
- Three or four uses effectively described with developed detail OR
- Two well developed in detail.
- Good balance between primary planning and secondary uses

Level 2 (5-7)
- Some use of stimulus material
- Sound accuracy and detail
- Several uses present but lacking depth

Level 1 (0-4)
- Little use of stimulus material
- Basic understanding shown
- Lack of structure, understanding and knowledge
- No depth to answers

2 (iii) Fig.3 shows primary data collected on this dune area. Describe and explain how you could represent this data. You should include diagrams. [15]

Indicative content:

I would expect that the species data would be portrayed using Kite diagrams but most will use a divided bar chart at each location.
Wind data is best shown using bar chart possibly located on a transect. Accept a scatter graph showing wind speed and location

- A clear statement of the data presentation methodology and why they were selected
- A consideration of their use
- Why were they appropriate?
- The limitations of these methods
- How useful were the methods in portraying the information
- Clarity
- Effectiveness in showing patterns and trends
- Recovery of information
- Ease of construction
- Data range and scales employed.

Level marking

Level 3 (12-15)
Clearly presented diagrams constructed with full keys, titles and labels
An emphasis on reasons for choosing the data presentation methods. Clear and accurate choice and explanation. Clearly linked to the stimulus material.

Level 2 (7-11)
Sound description of methodology. Reasonable justification. Some links to the stimulus material will be a top L2 indicator. Data presented accurately but mainly description and lacking explanation.
No diagram Max L2
Just wind or vegetation illustrated … max L2

Level 1 (0-6)
Justification as “most appropriate / best” only. Errors and omissions present on the diagrams.
Just a diagram with poor annotations.

(b) Students investigated the relationship between wind speeds and distance from the sea on this dune system. Describe and explain how spatial sampling could generate this data. [15]

Indicative content:

- Location of transects..where they start + direction
- Belt transects .. need a line transect really
- Systematic sampling and concepts of scale .. interval distances
- Stratified element to ensure that the various environments were covered such as dune tops, slacks and vegetation areas (a level 3 discriminator)

Level marking

Level 3 (12-15)
Candidates may present several reasons, argue them cogently and illustrate from the map or stimulus material. I would expect clear and effective use of the correct terminology with a developed use of scale. A clear understanding of the different types of transect and the number of points needed to make a representative sample.

Level 2 (7-11)
Candidates will present one or more reasons for a type of transect, argue them in more general terms and perhaps illustrate using stimulus material. There will be a reasonable depth of understanding and discursive content.

Level 1 (0-6)
Candidates may have made unsubstantiated sweeping statements or fail to mention the stimulus material. Basically argued with vague references and little exemplification. Transects will be mentioned but there will be a lack of appreciation of scale. There will be little or no use of appropriate terminology.

3 (a) Study Fig. 4(a) and 4(b), which show average weekly earnings in part of South-East England

(i) Describe the advantages and disadvantages of using the choropleth map in Fig. 4(a) to show the data in Fig.4(b). [10]

Indicative content:

- A type of statistical map
- Shows spatial distributions
- Areas within a range of values are given a colour or shading density
- Placement reflects the location of the phenomenon
- The colouring or shading should be graded to show a progression of values
- The statistical areas are controlled by other distributions.
- Clear demarcations are unnatural
- Boundary lines are unclear in the smaller areas … colour range wrong?
- The map hides small area variations within the regions
- The maps are of different scale, making comparison difficult.

Level marking

Level 3 (8-10)
Several of the above points described with a clear balance between advantages and disadvantages. OR 3 done very well.

Level 2 (5-7)
Most of the above points clearly expressed or 2 well developed points. A lack of balance between advantages and disadvantages

Level 1 (0-4)
Lack of clarity and understanding shown

(ii) Outline an alternative method of showing this data on a map. [5]

Indicative content:

- Bar charts
- Proportional circles or any appropriate symbol
- Dot map
- NOT isoline map.

Point mark
One mark for the name
Three marks for method and 1 for justification

(iii) Describe and explain how a correlation technique would help in the statistical analysis of the data in Fig. 4(b). [15]

Indicative content:

- Spearman rank or Pearson's Product Moment are on the Specification.
- Both are appropriate though only one is needed
- A brief outline of the methodology may be included.
- Mean, mode ,median could be mentioned as inferential statistics
- Correlation measures the association between pairs of values in a data set.
- It gives a precise measure of association between +1 and -1
- The alternative is a scatter graph with regression analysis
- Best-fit lines can be calculated but are often just drawn by eye.
- Scatter graphs are subjective and open to varying interpretation but level three can be achieved without the graph.
- There are enough pairs to make this test statistically significant.

Level marking

Level 3 (12-15)

- A clear understanding of the statistical process
- A clear balance of description and explanation
- The correct use of the appropriate statistical test
- Effective understanding of the data analysis
- Clearly presented with an understanding of the impact of the statistical analysis
- Spearman rank + confidence levels clearly explained is L3 indicator
- Scatter graph and regression analysis L3 indicator

Level 2 (7-11)

- A sound understanding of the need for statistical analysis.
- An appropriate statistical test. This may take the form of a recipe with some explanation. Top L2 if this stops at Spearman calculation without progression.
- A reasonable understanding of the correlation technique
- Some understanding of the impacts of stats testing.
- Scatter graph and best fit line L2 max
- Inferential statistics L2 max

Level 1 (0-6)

- A limited understanding of detail.
- Little / no understanding of correlation techniques
- Basic understanding with poor balance of description and explanation.

(b) To what extent is statistical testing vital in any geographical investigation?

[15]

Indicative content:

- Candidates should appreciate the purpose of statistical testing
- A need for evaluation and a discursive approach
- What are the alternatives?
- Possible inclusion of fieldwork undertaken by the candidate.

Level marking:

Level 3 (12-15)

- Effectively argued with a clear evaluation of how useful statistical testing can be.
- Clear understanding of when /when not to undertake statistical testing.
- The element of chance and confidence levels
- Clearly presented arguments with a discursive content.

Level 2 (7-11)

- A reasonable argument with a sound evaluation
- A good balance achieved with some understanding of when to test
- A passing mention of chance and confidence levels will be a discriminator for the upper marks.
- Some discursive content.

Level 1 (0-6)

- Basic content
- or no argument with a limited / no evaluation
- Description with little discursive content.
- Limited understanding of statistics and their application.

Grade Thresholds

Advanced GCE (Subject) (Aggregation Code(s))
June 2008 Examination Series

Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
2680	Raw	100	71	64	57	50	43	0
	UMS	120	96	84	72	60	48	0
2681	Raw	75	50	45	40	35	31	0
	UMS	90	72	63	54	45	36	0
2682 01	Raw	60	39	36	33	30	27	0
2682 02	Raw	15	12	10	8	7	6	0
2682 Opt A	Raw	75	51	46	41	37	33	0
	UMS	90	72	63	54	45	36	0
2683	Raw	90	69	61	54	47	40	0
	UMS	90	72	63	54	45	36	0
2684	Raw	120	86	78	70	63	56	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	59	51	43	35	28	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	25.5	45.6	64.8	79.2	90.3	100.0	4,601
7832	30.9	62.5	85.0	96.5	99.4	100.0	3,874

8,475 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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