GEOGRAPHY **9768/04**

Paper 4 Research Topic **May/June 2017**

MARK SCHEME

Maximum Mark: 50

Published

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This document consists of **21** printed pages.

Question	Answer	Marks
	Study Fig. 1, which shows annual and forecast changes in rent for retail properties in selected Scottish cities from 2003 to 2018.	
1(a)	**Giving evidence from Fig. 1, which city is expected to have a lower change in rent in 2018 than in 2003?** • Glasgow • Change in 2003 is +2.7%, change in 2018 is +2.2(3)%	**2**
1(b)	**Using Fig. 1, compare and contrast the changes in rent between 2009 and 2018 for retail properties in Edinburgh and Glasgow.** Accept any valid comparisons or contrasts e.g. : • Both start in 2009 at a similar figure (–7.5) • Both show an increase from '09 to '18 • Both decline from 2011 to 2013 • annual change is always greater for Edinburgh • gap between the 2 decreases from 2013 to 2018 • Mark 3 complete contrasts/comparisons @ 1 plus the 4th mark for supporting data; must be at least one comparison and one contrast	**4**
1(c)	**Study Fig. 2, which shows floorspace use in the centres of selected Scottish towns and cities in 2013.** **To what extent are the percentages of convenience goods and comparison goods floorspaces similar between the Scottish towns and cities shown in Fig. 2?** There are many acceptable approaches and, given the limited mark (and time) allocation we can't expect too much detail. A good answer will arrive at a judgement well supported by information from the graph. Accept any reasonable judgement as long as it is well supported. One possible approach would be to consider the overall figure (i.e. the blue and orange bars together) as well as considering the comparison and convenience figures separately. It will be necessary to draw out the differences as well as the similarities so that a sensible judgement can be made. **L3** **(5–6 marks)** Sophisticated treatment with a supported judgement – similarities are weighed against the differences. Accurate data support. **L2** **(3–4 marks)** Some assessment of the similarities and differences shown on the graph Provides some data to support points **L1** **(0–2 marks)** Little attempt to address the question; simple description Data support inaccurate or lacking	**6**

Question	Answer	Marks
1(d)	**A company is looking to set up a large new retail store in the centre of Glasgow. Assess the benefits and limitations of the information provided in Figs. 1 and 2 to the company as they consider their final decision.** A question to which a very wide range of responses is possible. Fig. 1 gives important economic information about changes in rent, but fails to give exact locations within the cities; the robustness of the forecasts must also be in doubt. Fig. 2 shows the type of landuse but gives percentages only; also the data is only for one year 2013. In addition, other types of information would be very useful, for example, • road networks and access • pedestrian footfalls in the proposed new location • potential custom from settlements beyond the city boundary • consumer survey around Y about shopping behaviour and consumer needs or wants • City Council planning policy and other official decisions affecting the sector • plans of rival department store chains **L3** **(6–8 marks)** A clear understanding of the strengths and limitations of the resources with evaluation to the fore. Knowledge of other resources/information which would be of use. Mature assessment. **L2** **(3–5 marks)** Discussion of the pros and cons of the resources but assessment weakly developed. Very limited knowledge of other resources which may be of use. Provides support for some observations. **L1** **(0–2 marks)** Little understanding of the question, perhaps simple description. Support is inaccurate or lacking	8

Question	Answer	Marks
2(a)	**Study Fig. 3A, which shows e-buyers in EU member states as a percentage of the total population aged 16 to 74 in 2015.** **Fig. 3B shows the EU member states in 2015.** **To what extent is there an East-West divide to the distribution shown in Fig. 3A?** Although there appears to be a clear N/S divide, an E/W divide is less obvious. The lower percentages (<30%) are to the East (Poland, Romania and Cyprus). Italy is an exception, appearing to straddle the divide (notional) between E and W. As for the highest figures (>70%) there's a more even split Sweden and Finland to the E, UK to the W, with the Netherlands, Germany and Denmark sitting astride the divide. Accept a judgement anywhere on the spectrum as long as it is well supported. **L3** **(4–5 marks)** Clear and detailed discussion with assessment to the fore. Fig. 3A is well used to support the points made. **L2** **(2–3 marks)** A valid attempt to address the question. Evidence is used to support the points made. Lacks the detail or clarity needed for L3 **L1** **(0–1 marks)** Simple description with little attempt to address the question.	5

Question	Answer	Marks
2(b)	**'Technological developments are now the dominant cause of changing retail patterns'.** **From your wider study of retail patterns, how far do you agree with this statement?** Given the mark and time (18 mins) allocation, we can't expect a comprehensive answer. Quality of argument will be the main discriminator rather than breadth of knowledge. An opportunity here for candidates to use the knowledge they've gained from their individual research to explore the causes of changing retail patterns. Any point of view is acceptable, but credit well those who are able to support their view with useful exemplar support. The best candidates will address the evaluative aspect of the question – this will indicate L3. Apart from changing technologies (include transport as well as digital) candidates will need to consider the role of some of the other drivers of change – political, social, demographic, economic and environmental – to arrive at a robust and balanced judgement. **L3** **(8–10 marks)** A clear focus on the question with appropriate exemplar support. There is a sophisticated understanding. The evaluation is well supported by exemplar material. Factors other than technology will be considered. **L2** **(5–7 marks)** Expresses a view and provides some support. Sound knowledge and understanding, perhaps overall lacking depth. May be limited in range or in explanation or in exemplification. Discussion of technology only might reach the top of this band. **L1** **(0–4 marks)** The approach is largely descriptive and superficial with little or no attempt to address the question. Little exemplar support.	10

Question	Answer	Marks
3	**EITHER** **With reference to your own investigation of retail patterns, discuss the extent to which the ways you presented and analysed your findings enhanced your investigation.** **Begin by stating the question or hypothesis that you investigated.** Answers should be based firmly on candidates' own investigations, quoting examples drawn from this. Much depends on the nature of the investigation, but good responses will discuss the pros and cons of the methods chosen to present and analyse the data along with an assessment of how far each method enhanced the investigation. The methods should cover a range of techniques which may be graphical, cartographical, ICT and statistical. **L4** **(13–15 marks)** The candidate displays a high order understanding. The value of the techniques are assessed in a mature fashion and are well supported with examples drawn from the candidate's own investigation. **L3** **(10–12 marks)** Good understanding of the value of the techniques used. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. **L2** **(7–9 marks)** More focused on the candidate's own investigation. Describes the techniques used, but in only a superficial fashion. Largely descriptive with little relevance to question will just reach this level. **L1** **(0–6 marks)** Discussion lacks detail. Perhaps descriptive, with only piecemeal comments. Little reference to candidate's own investigation.	15

Question	Answer	Marks
4	**OR** **With reference to your own investigation of retail patterns, discuss the criteria you considered when developing the question or hypothesis for your investigation.** **Begin by stating the question or hypothesis that you investigated.** Answers should be based firmly on candidates' own investigations, quoting examples drawn from this. Clearly, much depends on the investigation. The syllabus lists the following criteria: Be at a suitable scale; provide opportunity for research; be clearly defined with named locations; be based upon wider geographical theories, ideas or concepts. Additionally, the issues of safety and risk management, accessibility and the limitations of the resources available to candidates would also be relevant. The term 'discuss' implies there should be some evaluation, perhaps in terms of the trade-off between the criteria explored. **L4** **(13–15 marks)** The candidate displays a high order understanding and makes a mature assessment. The points made are well supported by examples drawn from the candidate's own investigation. **L3** **(10–12 marks)** Good understanding of the question and addresses relevant criteria. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. **L2** **(7–9 marks)** More focused on the candidate's own investigation. Attempts to address the question, but in only a superficial fashion. Only limited support from the candidate's own investigation. Largely descriptive with little relevance to question will just reach this level. **L1** **(0–6 marks)** Discussion lacks detail. Perhaps weak description only. Little reference to candidate's own investigation.	15

Section B: Managing Rural Environments

Question	Answer	Marks
Study Fig. 4, which shows the age structure for large urban and rural areas in Scotland.		
5(a)	**Giving evidence from Fig. 4, state the difference in percentage population between large urban and very remote rural areas for the 16 to 24 age group.** • 6 (or 5.5) • 14–8 (or 8.5)	2
5(b)	**Describe the similarities and differences in age structure between the three different types of rural areas shown in Fig. 4.** Accept any valid similarities or differences e.g.: • 45 to 59 – approx. the same (23/24) throughout • 25 to 44 – the same in remote and very remote rural (23), greater in accessible rural (26) • 60+ increases from accessible to very remote; 16 to 24 decreases • 0 to 15 decreases from accessible to remote rural areas Mark 3 complete similarities/differences @ 1 plus the 4th mark for supporting data; must be at least one similarity and one difference	4

Question	Answer	Marks
	Study Figs 5A and 5B. Fig 5A shows types of rural areas in Scotland, Fig. 5B shows the projected percentage population change from 2006 to 2031.	
5(c)	**Using Figs 5A and 5B, assess the extent to which there is a link between the types of rural areas and percentage population change in Scotland.**	**6**
	An opportunity to describe the pattern shown and to make a judgement about the distribution.	
	A response anywhere on the spectrum would be acceptable, as long as it is well supported	
	A good answer will cope comfortably with the variations shown They will have good support from both Figs 5A and 5B, and the evaluative aspect of the question will be to the fore.	
	L3 **(5–6 marks)** Clear and detailed assessment, well focused on the evaluative aspect of the question, with extensive and accurate data support from the resources	
	L2 **(3–4 marks)** Clear attempt to address the question Provides data support Evaluation likely to be brief or superficial/poorly supported	
	L1 **(0–2 marks)** Descriptive with little attempt to address the question. Data support inaccurate or lacking	

Question	Answer	Marks
5(d)	**Assess the value of Figs 4, 5A and 5B to those responsible for managing population issues in rural areas in Scotland.** There needs to be a consideration of both strengths and weaknesses to enable a valid assessment to be made, although there is no requirement for balance between the two. The assessment could be anywhere on the spectrum, but the judgement must be well supported to gain maximum marks. Expect reference to the following, though other valid points could well be made: Fig. 4 shows age structure for different types of rural areas and allows comparison with large urban areas. However, the figures are percentages; absolute values are not given. What exactly is meant by the terms "accessible", "remote" and "very remote"? Also, the data has no date. Figs. 5A and 5B add a spatial dimension to the information given. Fig. 5A has no date and also fails to define the different types of rural area. The question is deliberately wide in scope, so accept any valid comments about other information which would inform the work of those responsible for managing population issues in rural areas – e.g. rates of in and outmigration, employment figures etc. **L3** **(6–8 marks)** Clear and detailed analysis of the strengths and weaknesses, solid evaluation well supported. Clear understanding of other resources which might be useful. **L2** **(3–5 marks)** An understanding of some of the strengths and weakness, evaluation (if present) weakly supported. Some knowledge of other resources which may be of use. May simply be a listing of the strengths and weaknesses of the resources with little attempt to provide an evaluation. **L1** **(0–2 marks)** Little understanding of the strengths and weaknesses; perhaps simple description.	8

Question	Answer	Marks

6(a)	**Study Fig. 6, which shows part of North Yorkshire, England.**
	
	Using Fig. 6, how far does the map evidence support the view that Hunmanby is at a higher level in the rural settlement hierarchy than Burton Fleming?
	
	A fairly straightforward question but look for a range of clear comparisons and a judgement.
	
	Points that could be made in favour:
	    • H larger built-up area suggests larger population
	    • H railway station – none in BF
	    • H more complex road network than BF
	    • H has a tourism function (caravan and camp site) – none in BF
	
	Points against:
	    • Both have 2 places of worship
	    • BF has a pub and a post office – H has neither
	
	L3 **(4–5 marks)**
	Clear and detailed analysis. Well focused on the question, with evaluation to the fore. Evidence from Fig. 6 is convincingly used to support the points made.
	
	L2 **(2–3 marks)**
	A valid attempt to address the question. Evidence from Fig. 6 is used to support the points made. Evaluation limited.
	
	L1 **(0–1 marks)**
	Limited ability to interpret the resource, may simply describe. Support is inaccurate or lacking. No attempt to address the question.
		5

Question	Answer	Marks
6(b)	**'Economic and environmental changes result in both gains and losses for rural inhabitants.'** **From your wider study of managing rural environments, to what extent do you agree with this statement?** Given the mark and time (18 mins) allocation, we can't expect a comprehensive answer. Quality of argument will be the main discriminator rather than breadth of knowledge. Much will depend upon the examples chosen. Candidates might usefully consider different types of rural settlement and the impact economic and environmental changes have had on their populations. Some inhabitants could be seen as victims, whilst others may be regarded as winners. A good answer will consider this distinction and arrive at a balanced judgement, well supported by named and located examples **L3** **(8–10 marks)** The question is to the fore with sophisticated exemplar support. There is a clear and well supported attempt to address the evaluative aspect of the question. **L2** **(5–7 marks)** Attempts to address the question and there is some discussion, perhaps based largely on victims. Exemplar support, though present, may be limited in value. **L1** **(0–4 marks)** The approach is largely descriptive and piecemeal, only a limited attempt to address the question.	10

Question	Answer	Marks
7	**EITHER** **With reference to your own investigation of managing rural environments, discuss the extent to which the ways you presented and analysed your findings enhanced your investigation.** **Begin by stating the question or hypothesis that you investigated.** Answers should be based firmly on candidates' own investigations, quoting examples drawn from this. Much depends on the nature of the investigation, but good responses will discuss the pros and cons of the methods chosen to present and analyse the data along with an assessment of how far each method enhanced the investigation. The methods should cover a range of techniques which may be graphical, cartographical, ICT and statistical. **L4** **(13–15 marks)** The candidate displays a high order understanding. The value of the techniques are assessed in a mature fashion and are well supported with examples drawn from the candidate's own investigation. **L3** **(10–12 marks)** Good understanding of the value of the techniques used. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. **L2** **(7–9 marks)** More focused on the candidate's own investigation. Describes the techniques used, but in only a superficial fashion. Largely descriptive with little relevance to question will just reach this level. **L1** **(0–6 marks)** Discussion lacks detail. Perhaps descriptive, with only piecemeal comments. Little reference to candidate's own investigation.	15

Question	Answer	Marks
8	**OR** **With reference to your own investigation of managing rural environments, discuss the criteria you considered when developing the question or hypothesis for your investigation.** **Begin by stating the question or hypothesis that you investigated.** Answers should be based firmly on candidates' own investigations, quoting examples drawn from this. Clearly, much depends on the investigation. The syllabus lists the following criteria: Be at a suitable scale; provide opportunity for research; be clearly defined with named locations; be based upon wider geographical theories, ideas or concepts. Additionally, the issues of safety and risk management, accessibility and the limitations of the resources available to candidates would also be relevant. The term 'discuss' implies there should be some evaluation, perhaps in terms of the trade-off between the criteria explored. **L4** **(13–15 marks)** The candidate displays a high order understanding and makes a mature assessment. The points made are well supported by examples drawn from the candidate's own investigation. **L3** **(10–12 marks)** Good understanding of the question and addresses relevant criteria. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. **L2** **(7–9 marks)** More focused on the candidate's own investigation. Attempts to address the question, but in only a superficial fashion. Only limited support from the candidate's own investigation. Largely descriptive with little relevance to question will just reach this level. **L1** **(0–6 marks)** Discussion lacks detail. Perhaps weak description only. Little reference to candidate's own investigation.	15

SECTION C: Fluvial Geomorphology

Question	Answer	Marks
Study Fig. 7, which shows the relationship between river velocity and grain size		

Study Fig. 7, which shows the relationship between river velocity and grain size

Using Fig. 7, state the river velocity at which grains 0.1mm in size would be:

Question	Answer	Marks
9(a)(i)	**eroded** 20 cm/s (accept 21)	**2**
9(a)(ii)	**deposited.** 0.7 cm/s (accept up to 0.75) 0.8 = 0mk	
9(b)	**Using Fig. 7, describe the relationship between flow speed, grain size and erosion.** • Above grain sizes of 0.2 erosion increases with increase in velocity and grain size • Below 0.1 mm, as grain size and velocity increase erosion decreases 2 clear statements at 1 mk each, plus accurate data support = 2 marks No credit for reference to deposition	**4**

Question	Answer	Marks

9(c)	**Study Fig. 8, which shows the roundness index with distance from the source of a river for selected bedload materials.**
	
	The roundness index is a value between 0 and 1, with values nearer to 1 indicating more rounded objects.
	
	'Bedload becomes more rounded with distance from the river source.'
	
	To what extent does Fig.8 support this statement?
	
	A requirement to analyse the information on the graph and then make a judgement. Good answers will discuss points supporting and points against the statement. They will then go on to make an assessment, supported with evidence from the graph.
	
	Accept any valid points, which might include:
	   • Certainly true for quartz (increases from 0.54 to 0.63)
	   • Flint – a marginal increase of 0.01, for most of the river length there is a decrease in rounding
	   • Not true for limestone (decrease from 0.67 to 0.62)
	   • There is much variation for each rock type
	
	L3 **(5–6 marks)**
	Clear and detailed, well focused on the question. There is extensive and accurate support from the resource
	
	L2 **(3–4 marks)**
	Clear attempt to address the question. Provides some data support, although it may be limited
	
	L1 **(0–2 marks)**
	Weak description, showing little understanding of the question
	Data support inaccurate or lacking
		6

Question	Answer	Marks
9(d)	**Assess the benefits and limitations of the information provided in Figs. 7 and 8 to those investigating downstream changes in the load of rivers.** There needs to be a consideration of both benefits and limitations to enable a valid assessment to be made, although there is no requirement for balance between the two. The assessment could be anywhere on the spectrum, but the judgement must be well supported to gain maximum marks. Expect reference to the following, though other valid points could well be made: Fig. 7 shows the relationship between three variables over a wide range of flow speeds and grain sizes. However, it gives no information about the type of load (bedload, suspended, soluble). Fig. 8 links roundness to distance for three rock types. Other rock types and other types of load (suspended, soluble) are not shown. The question is deliberately wide in scope, so accept any valid comments about other resources which could inform the work of those investigating downstream changes in load – e.g. data about specific rivers, geology, climate, land use etc. Good responses will deal with each resource, explaining why they might be of use and discuss their limitations. There will need to be consideration of other information which might be of use – given the mark allocation this does not need to be exhaustive – in order to enable a sensible evaluation to be made. **L3** **(6–8 marks)** Clear and detailed assessment of the usefulness of the resources, considering both the benefits and limitations. A discussion of some other resources which may be of value. A good evaluation of Figs 7 and 8 only might just reach this level. **L2** **(3–5 marks)** An attempt to evaluate the resources. Perhaps some suggestions of other relevant resources, failing to explain why they are useful. **L1** **(0–2 marks)** Little understanding of the question; perhaps simple description.	8

Question	Answer	Marks
10(a)	**Study Photograph A, which shows part of the River South Tyne in England.** **Identify and locate using the grid (provided on the photograph) <u>three</u> fluvial landforms shown in Photograph A.** Three fluvial landforms need to be identified and located using grid references for full marks Erosion – river cliff, wide valley with gentle sides Deposition – eyots/pebble bars, flood plain, pool, riffle, meander belt, braided channel, island (levees = 0mk) **L3** **(4–5 marks)** Three features identified and correctly located, using more than one square where appropriate One location may be partial or incorrect **L2** **(2–3 marks)** 3 landforms identified, location of 2 may be incorrect or partial **L1** **(0–1 marks)** Limited attempt to answer the question, weak identification	5

Question	Answer	Marks
10(b)	**"Fluvial processes are essentially the same throughout a river's course, but landforms in the upper courses of rivers are markedly different to those in the middle and lower courses'.** **From your wider study of fluvial geomorphology, how far do you agree with this statement?** A wide ranging question to which, given the mark and time (18 mins) allocation, we can't expect a comprehensive answer. Quality of argument will be the main discriminator rather than breadth of knowledge. A discussion of the fluvial processes of erosion, transport and deposition along with how they vary in rate, in force and in effectiveness along the course of a river should provide enough material to enable a judgement to be made. Clearly, other factors affecting landforms are relevant – geology, climate, bed/bank material, seasonal variations etc. – and should be brought into the discussion. Located examples will characterise good answers. The best answers will address "markedly" different. A judgement anywhere on the spectrum is acceptable – but it is important that it is well supported. **L3** **(8–10 marks)** The answer is well focused on the evaluative requirement of the question with sophisticated exemplar support. There is detailed knowledge of fluvial processes and landform development. Different types of landforms (erosional v depositional or upper course v lower) will be discussed. **L2** **(5–7 marks)** Addresses the evaluative element of the question, but the treatment is expressed without any depth of argument or only a superficial level of support. Consideration of 2 processes or landforms only might get to the top of this band. **L1** **(0–4 marks)** The approach is largely descriptive and piecemeal. No attempt to address the question.	10

Question	Answer	Marks
11	**EITHER** **With reference to your own investigation of fluvial geomorphology, discuss the extent to which the ways you presented and analysed your findings enhanced your investigation.** **Begin by stating the question or hypothesis that you investigated.** Answers should be based firmly on candidates' own investigations, quoting examples drawn from this. Much depends on the nature of the investigation, but good responses will discuss the pros and cons of the methods chosen to present and analyse the data along with an assessment of how far each method enhanced the investigation. The methods should cover a range of techniques which may be graphical, cartographical, ICT and statistical. **L4** (13–15 marks) The candidate displays a high order understanding. The value of the techniques are assessed in a mature fashion and are well supported with examples drawn from the candidate's own investigation. **L3** (10–12 marks) Good understanding of the value of the techniques used. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. **L2** (7–9 marks) More focused on the candidate's own investigation. Describes the techniques used, but in only a superficial fashion. Largely descriptive with little relevance to question will just reach this level. **L1** (0–6 marks) Discussion lacks detail. Perhaps descriptive, with only piecemeal comments. Little reference to candidate's own investigation.	15

Question	Answer	Marks
12	**OR** **With reference to your own investigation of fluvial geomorphology, discuss the criteria you considered when developing the question or hypothesis for your investigation.** **Begin by stating the question or hypothesis that you investigated.** Answers should be based firmly on candidates' own investigations, quoting examples drawn from this. Clearly, much depends on the investigation. The syllabus lists the following criteria: Be at a suitable scale; provide opportunity for research; be clearly defined with named locations; be based upon wider geographical theories, ideas or concepts. Additionally, the issues of safety and risk management, accessibility and the limitations of the resources available to candidates would also be relevant. The term 'discuss' implies there should be some evaluation, perhaps in terms of the trade-off between the criteria explored. **L4** **(13–15 marks)** The candidate displays a high order understanding and makes a mature assessment. The points made are well supported by examples drawn from the candidate's own investigation. **L3** **(10–12 marks)** Good understanding of the question and addresses relevant criteria. The answer makes appropriate reference to the candidate's own investigation. Well focused on the question. **L2** **(7–9 marks)** Focused on the candidate's own investigation. Attempts to address the question, but in only a superficial fashion. Only limited support from the candidate's own investigation. Wanders into methodology or other aspects of tangential relevance. Largely descriptive with little relevance to question will just reach this level. **L1** **(0–6 marks)** Discussion lacks detail. Perhaps weak description only. Little reference to candidate's own investigation.	15