There were 274 candidates, a slight decrease on 2013, but still well above the long term average for the tenth and final external examination of the present Geography course. Criteria 2, 6, 9 and 10 were assessed twice and criterion 8 was assessed three times, on different questions. Candidates need to perform consistently in all 5 questions and satisfy the requirements of the criteria in each question to achieve the best possible overall award. It is important that candidates keep to the suggested time allocations on the exam paper and that each question is answered to the best of the candidate's ability. Where there are a number of parts to a question, candidates should divide up the total allocated time equally to each part of the question, to ensure that they do not run out of time for the last part of that question.

Candidates need to number the questions clearly and accurately on the outside and the inside of their answer books to avoid confusion in the marking process and to remember to answer each question in a new book, especially in Section A. Candidates should also ensure that their handwriting is legible so that they can be given full credit for everything that they write.

Question 1

This question assessed criteria 6 and 10 and candidates were asked to refer to the Information Sheet. This required candidates referring to table 1 which showed Selected Population Characteristics and World Employment by Industry Sector (% of total country employment) and Figure 1 showing a map of World Population Density. Better responses analysed and effectively used both the table and the map to answer the questions.

(a) Candidates were asked to identify the relationship between Gross National Income PPP, Total Fertility Rate and the employment data – weaker responses failed to do this. Candidates were also asked to account (explain and give reasons for) the relationships in the data for both LDCs and MDCs.

The best responses defined the terms Gross National Income PPP and Total Fertility Rate and explained the employment data using examples from both LDCs and MDCs. When referring to specific examples, the actual number should also be given eg Niger has the lowest GNI PPP at US$650 compared to the USA with GNI PPP of US$50,610. Or Burundi has the highest percentage employed in agriculture at 93.6 compared to 1.5% in the USA. Some candidates gave further supporting data from the World Population Data sheet, such as the TFR for LDCs at 2.6, MDCs at 1.6 and the world at 2.5. Some candidates referred to inverse relationships or negative/positive relationships within the data.

Some candidates referred to primary, secondary and tertiary industries in their discussion and this helped in their explanations of the employment data and the differences between LDCs and MDCs. Some candidates referred to the stages of demographic transition in their responses. This would only be recommended if it enhanced the discussion of the relationships between Gross
National Income PPP, Total Fertility Rate and employment data by sector for both Less Developed Countries and More Developed Countries.

The best explanations for the relationships were detailed and ranged from discussions of social factors such as access to and level of education, access to contraception, access to health care, age of marriage, infant mortality rates and insurance births; and economic factors such as level of manufacturing, rich/poor divide, resources, trade opportunities and amount of skilled labour. Political factors such as war, conflict or political stability were also mentioned.

(b) (i) Candidates were asked to explain the concept of population density by referring to the map. The best responses provided an accurate definition of population density and used the map to further explain the concept.

(ii) Required the candidates to demonstrate their knowledge and understanding of why particular areas of the world have clusters of cities with populations over one million. Many candidates referred to the major populations regions South Asia, East Asia, Africa, Europe, North America and Eastern South America. Some candidates referred to push and pull factors for urbanisation. Other candidates referred to the social, historical, environmental, economic and political factors (SHEEP factors) to explain population density. Many candidates forgot to focus on cities and/or forgot to use the map to help them. Some candidates discussed voids in too much detail rather than focussing on population clusters and cities with population over one million. Several candidates discussed mega cities. The best responses referred to the key and used the map in their discussion of why some particular areas of the world have clusters of cities with populations over one million.

Question 2

Overall, this question was answered well by the majority of candidates. It was in three parts (a), (b) and (c). Each part of the question was clearly written and should not have held any surprises for candidates. Candidates were recommended to spend 30 minutes answering this question. It proved to be a good question to assess the extent of each candidate’s problem solving skills (Criterion 9).

(a) There were only a handful of candidates who answered the question referring to both Country A’s and Country B’s population pyramids. There were roughly equal numbers who chose Country A or Country B.

Virtually all candidates who chose Country A’s population pyramid were able to identify it as being typical of a less developed country at Stage 2 of the Demographic Transition Model with a rapidly expanding, youthful population. Most candidates chose reducing the high Crude Birth Rate as the major challenge facing Country A. Similarly most candidates who chose Country B’s population pyramid were able to identify it as being typical of a more developed country at Stage 4/5 of the Demographic Transition Model with a contracting, ageing population. Most candidates chose either the declining Crude Birth Rate or problems associated with coping with a growing number of retirees.

(b) There were some excellent answers to this part of the question. The better answers from candidates who chose Country A used government policies and initiatives to reduce crude birth
rates e.g. family planning, greater availability of contraception, raising the status of women, greater access to education and improved child health services. They drew on case studies from countries such as Iran, Gambia and India. Some candidates used the example of China’s One Child Policy as a solution when it would not be a plausible policy in many less developed countries. The better answers from candidates who chose Country B used government policies and initiatives to increase crude birth rates e.g. Australia’s Baby Bonus Scheme and similar government schemes in Japan, Italy, Germany and Sweden. The candidates who identified the growing number of retirees as a major challenge referred to government policies by many more developed countries to increase the retirement age, to reform superannuation policies to reduce the reliance on government funded pension schemes and preventative health initiatives to decrease the growing elderly health budget.

(c) The better answers to this part of the question analysed the relative success or failure of government policies in the case studies mentioned in part (b). A number of candidates who chose Country A rightly highlighted the capacity of less developed countries to implement some of the government policies to slow down rapidly expanding, youthful populations.

**Question 3**

The topographic map extract of Wallis Lake provided a variety of physical features and adequate human features for candidates to display their knowledge and skills. Most candidates worked systematically through the physical and human features and then looked at the relationship between both in part c. The marker looked for these basic points:

a) Physical features

Relief: highest point is 298 m at GR409295 (AR4029), local relief 298m. Most of the SW quadrant was undulating with ridges aligned NW-SE. There were several areas of high gradients. The NW quadrant is flat lowland. On the coast, there are beaches (eg Seven Mile Beach), rocky headlands and islands in the estuary. Some candidates mentioned longshore drift and the shape of headlands and beaches. (Candidates with background knowledge of coasts could pick out coastal depositional features. This was given credit, but candidates were not penalised for omission).

Drainage: a series of coastal lakes. Wallis Lake is the dominant feature and is estuarine. The outlet is at AR5339. The principal river is Wallingat River which flows north and then east into Wallis Lake. There are examples of dendritic and parallel drainage patterns. In the NW quadrant there are swampy areas subject to inundation AR4135 and mangroves AR4635 and swamps AR5332. Smiths Lake is closed to the sea by a sand bar AR5415.

Vegetation: Undulating areas in the NW and SW quadrants are covered by dense vegetation. This thins to medium forest AR4333 to scattered AR5035 on riverbanks and islands. Candidates clearly had difficulty interpreting the key as both tropical rainforests and pine plantations were reported.

b) Human features

Settlements: Forster AR5438 and Tuncurry AR5240 have a grid street pattern. Coomba AR5032 and Smiths Lake have a different street layout. Town infrastructure such as sewage treatment works and cemeteries were mentioned. There were few other buildings along roads. (Some candidates referred to Forster as a city, we need to teach candidates strategies such as estimating...
area and comparing that with their hometown or city. For example, an urban area 4km x 2km would take an hour to walk its length and half an hour its width. That makes it a town).

Transport: Main Road ‘The Lakes Way’ follows the sand spit with a bridge across the estuary AR5339. There are minor roads in state forests and a landing ground on Wallis Island AR5037. Better candidates noted there were no road links and this would limit the importance of the airstrip. No evidence of a railway. Better candidates identified the likely importance of sea transport, commercial fishing and recreational use of waterways.

Land use: Some farming AR4119, AR4336. They were single farmsteads with road access, likely grazing only with farm dams. There was sand mining at AR5214, probably a relic dune. There were some small quarries. There were large areas of forest and associated access roads, a forestry industry was likely.

c) Relationship between the physical and human factors.

All settlement is on flat well drained land. Most would have high scenic values with views of the ocean or estuary and areas with high conservation values. Depositional features such as sand spits and swampy areas remain undeveloped apart from access roads. The recreation potential of beaches and the sheltered estuary and coastal lakes have attracted settlement, e.g. Coomba and Blueys Beach.

All road routes are low gradient, skirting lakes and forested hills and swamps. There is only one bridge over the estuary linking Forster and Tuncurry. The mouth of the estuary has been stabilised with a breakwater and is set back from the sea so it is sheltered.

All steep gradients remain forested; some is State Forest (i.e. forestry land) with forestry roads. There is some farming of the flat well drained land (e.g. Topi Topi, AR4219 with a single farmstead, farm dams and an access road) but it is of minor importance as most of the land surface is steep and forested and unsuitable for farming. These forests could cater for tourists because there are walking tracks, lookouts and a Flora Reserve.

**Question 4**

This question was answered by 177 candidates. Better answers to this question were those that explained the causes of their natural hazard with some use of technical terms and then went on to discuss a variety of impacts with reference to examples from both more and less developed countries. As in previous years, some chose to write about one example from each in detail, while others used more examples with briefer comments for each. Both approaches are acceptable. Many supported their written answer with the use of diagrams. A number of candidates also differentiated between primary and secondary effects and were able to draw some comparisons between MDCs and LDCs when discussing impacts and responses. However, weaker responses were very generalised and showed limited knowledge and understanding of the topic or failed to use specific examples of recent natural hazard events, which was essential for Criterion 8.

If candidates choose to include a map (optional for this question) it should show some information. Maps with only a few pencil lines but without any naming or labelling are of little value. It is also recommended that when referring to a specific event for the first time in their essay, candidates also
state the country and date, for example, Sichuan (China) 2008. Some candidates confused the concept of a country, a region and a city.

Question 5

The 53 candidates who answered this question generally chose either enhanced greenhouse effect or acid rain. Essay structure (criterion 2) was typically quite strong, with most candidates providing an appropriate introduction, body and a conclusion. Better answers were able to sustain and link core concepts throughout an extended response. Weaker answers contained no structure or were unable to link topics. Better answers also addressed all course elements for this topic, demonstrating basic knowledge of atmospheric processes (criterion 10) before discussing mechanisms triggering atmospheric change, subsequent impacts upon the environment and the various human responses to these changing conditions.

Candidates who did well against criterion 10 were able to identify the (natural) primary greenhouse gases (water vapour, methane, carbon dioxide, nitrogen oxide, & ozone), within a succinct explanation of their role in maintaining a consistent temperature within the earth’s atmosphere. Better answers then offered a clear explanation of the human processes that contributed to the ‘enhanced’ greenhouse effect, offered a variety of sources for increasing levels of greenhouse gases and used a variety of MDC and LDC examples in their explanation (criterion 8).

Discussions of the impacts of enhanced greenhouse effect were diverse and included:

• Increased instances of extreme weather events (e.g. 2003 and 2006 heat waves in France)
• Heat island effect in larger cities
• Climate refugees (e.g. recent mass migration in Lagos, Nigeria)
• Desertification reducing the amount of farmable land and subsequent effects upon food security, trade, employment and overpopulation in cities neighbouring drought affected areas
• Rising sea levels due to thermal expansion, the melting of ice in glaciers and at the polar caps
• Changes in climate such as reduced rainfall, or less predictability of monsoon seasons (e.g. increased outbreaks of Dengue fever in Jakarta stemming from a prolonged wet season)
• Changes in biodiversity of species and species extinction.

Discussion of acid rain was generally quite detailed and included relevant discussion of emissions of chemicals leading to acidification, chemical processes in gas phase and cloud droplets, wet and dry acid deposition. Discussion of the impacts of acid rain covered forests and other vegetation, soils, surface waters, aquatic animals and effects upon buildings in urban areas.

Skilful discussions of human responses were interwoven throughout the script rather than ‘tacked on’ at the end. Some offered an analysis of how adverse atmospheric circumstances were exacerbated by inaction or inadequate preparation and planning. Better answers were able to isolate individual, local, and international human responses, evaluating the likelihood of success for each. These included the use and funding of public transport, flue-gas desulfurization, emissions trading schemes, international treaties on climate change and applied scientific research.
Question 6

47 candidates answered this question, with an even distribution of choice between river basins, coasts and mountains. The question assessed criteria 2, 8 and 10. The question was generally answered well, with a large proportion of candidates who had prepared very well being rewarded for their efforts. Many responses were, however, too brief overall. Candidates must be adequately prepared to be able to produce a sufficient volume of information and examples, to properly answer the question with the required depth of understanding, across all areas of the question. As a guideline, the stronger candidates generally produced a minimum of four pages of informative text, with several filling a booklet of eight pages with good quality information and writing.

Criterion 2 was generally well met, with most candidates writing in an essay style and format. It should be noted that, as this is a Geography essay, the inclusion of diagrams is encouraged. Some candidates included diagrams and then failed to refer to them; others referred to diagrams that were not there! It would seem that in some examples, the inclusion of a diagram was more costly in terms of time, than simply describing the process thoroughly.

Better responses started by defining the processes of erosion and deposition, as well as then describing the specific processes involved in making two landforms in their chosen area. The most popular examples varied, dependent upon the type of landscape that the candidates were studying. Candidates who selected river basins preferred meanders, ox-bow lakes, waterfalls and deltas. Coast candidates included headlands, sea caves, stacks, arches, beaches and dunes. Mountain candidates discussed pyramidal peaks (horns), arêtes, U-shaped valleys, cirques, corries and moraines. A significant number of candidates either failed to adequately define what erosion and deposition were, or failed to describe two landforms that were created as a result of these processes.

Many candidates struggled to separate the human activities from their impacts in their chosen landscape. For instance, they referred to tourism and forestry as major impacts, instead of correctly identifying that the impacts were those caused by these human activities, such as pollution, erosion or loss of biodiversity. A significant number of responses failed to describe the impact of human activity on their chosen landscape in any detail, simply skipping straight to the responses that have been implemented.

Better answers were well prepared with detailed descriptions of a range of human activities and impacts on their selected environment and used a broad range of examples from More Developed Countries (MDCs) and Less Developed Countries (LDCs). The strongest answers also covered multiple solutions that were being implemented across a wide range of locations. Candidates who chose to use only one example from each category of nation generally did not demonstrate as much understanding as candidates who were able to discuss in depth a greater number of examples (criterion 8).

Question 7

99 candidates answered this question and most answers were well written. Many candidates began with a definition of urbanisation but the better answers recognised that the key element of urbanisation is the movement of people from rural to urban areas, which then increases the percentage of people living in urban areas. The usual push and pull factors were presented, and better answers showed an understanding of the reasons why rapid urbanisation happened in the MDCs over 200 years ago,
whereas the LDCs are experiencing that growth now. This question did not need a discussion of various models of city growth and patterns, so those who spent time on that would have done better to write more about impacts and responses.

Commonly discussed impacts were traffic congestion, air and waste pollution, insufficient housing often leading to slums in cities in LDCs, lack of infrastructure (clean water, sanitation, education, medical services, roads and public transport), urban sprawl and increased crime rates. To try to show a broad knowledge of these impacts some candidates pointed out that (for example) traffic congestion was a problem common to cities such as London, Tokyo, Mexico City and Bangkok. They then went on to discuss impacts and responses in two of those cities in greater depth. The use of statistics can be very helpful in showing the extent of a problem (eg the air pollution levels often recorded in Beijing compared with acceptable levels, or the percentage of commuters using public transport in Curitiba compared with those in the city of Los Angeles).

Curitiba (Brazil) is a very useful example of how urban planning decisions, especially when taken early enough, can have very positive results, even in cities in LDCs. Malmo, Singapore and Copenhagen are good examples of success in MDC cities, but again they were responses made early enough to work well.

**Question 8**

72 candidates answered this question. Where questions are set in parts, candidates are strongly advised to show parts (a), (b) and (c) clearly beside the relevant parts of their answer. Answers to this question highlighted the need for candidates to read the question and to respond accordingly. Some wrote about the causes of their chosen natural hazard, when this was not required by the question.

Better answers discussed impacts with reference to events in both more and less developed countries and made a good effort in their evaluation of responses. However, some answers were too generalised and lacked specific detail. Correct spelling of place names is important as is the use of capital letters.

In the evaluation part of the question in part (c), candidates could consider:

- contingency plans put in place to cope with natural hazard events and the effectiveness of these
- comparing plans for more and less developed countries
- whether the plans are feasible or not, given such factors as resources and technology

**Question 9**

Candidates in this section generally chose either enhanced greenhouse effect or acid rain. Candidates needed to recognise that Section D questions did not ask for ‘causes’, focussing instead upon impacts and human responses. Despite this, many candidates described causes at length before responding relevantly to the exam prompt. Examiners did not penalise candidates for this, but recommend candidates read exam questions carefully.

Better answers linked core concepts throughout the response. Weaker answers contained no structure or were unable to link topics. Better answers also described in detail the impacts upon the environment, the various human responses to these changing conditions and evaluated the likelihood of success.
Discussions of the impacts of enhanced greenhouse effect were diverse and included increased instances of extreme weather events, heat island effect in larger cities, climate refugees, desertification, reduction of farmable land and subsequent effects upon food security, trade, employment and overpopulation in cities neighbouring drought affected area, rising sea levels due to thermal expansion, the melting of ice in glaciers and at the polar caps, changes in climate such as reduced rainfall, or less predictability of monsoon seasons and changes in biodiversity of species and species extinction.

Discussion of acid rain was generally quite detailed and included relevant discussion of emissions of chemicals leading to acidification, chemical processes in gas phase and cloud droplets, wet and dry acid deposition. Discussion of the impacts of acid rain covered forests and other vegetation, soils, surface waters, aquatic animals and effects upon buildings in urban areas.

Skilful discussions of human responses (criterion 9) were interwoven throughout the script rather than ‘tacked on’ at the end. As outlined by the marking guide, they recognised a wide range of existing and potential geographic problems, suggested a wide range of innovative and/or effective methods to solve these problems and comprehensively evaluated these solutions, recommending an effective range of improvements. Some offered an analysis of how adverse atmospheric circumstances were exacerbated by inaction or inadequate preparation and planning. Better answers were able to isolate individual, local, and international human responses, evaluating the likelihood of success for each. These included the use and funding of public transport, flue-gas desulfurization, emissions trading schemes, international treaties on climate change and applied scientific research.

**Question 10**

46 candidates answered this question, with an even distribution of choice between river basins, coasts and mountains. The question assessed criteria 2, 8 and 9. The question was generally answered well, with a large proportion of candidates clearly being well prepared. The stronger candidates generally produced a minimum of four pages of informative text, with several filling a booklet of eight pages with good quality information and writing.

Criterion 2 was generally well met, with most candidates writing in good style and communicating their intended meaning clearly and succinctly. There was some confusion between terms (eg ‘water population’ instead of ‘pollution’), as well as skipping key words, presumably due to rushing (eg a ‘less developed river’ being far better off than a ‘more developed river’). Candidates should proofread their work to avoid this outcome.

Better answers realised that part (a) simply referred to the impacts of human activities in their chosen landscape. As such, these answers only briefly touched on causes, and only then when it directly linked to and benefitted their description of the impacts. Many candidates got bogged down in causes, to the detriment of their overall effort, through an unnecessary amount of time being spent describing the causes. Most candidates used at least 3 separate examples, covering a range of MDC, LDC and local examples in the process.

Most candidates were able to list a range of responses to the impacts that were listed in part (a). Better answers went in to greater depth when giving examples of responses, as well as listing these responses from a wider range of examples. Criterion 9 was where the stronger candidates really stood out from
the pack. Weaker answers had either run out of time, got bogged down in causes or were simply unable to discuss, in depth, the level of success for each response that had been listed in part (b).

Better answers went into a range of reasons for the relative likelihood of success for each example of a response, factoring issues such as funding, politics, global climate change, different stakeholder priorities, flow-on effects of the original response and many other excellent reasons. Better answers also found time to go into examples of why a response would not work and provide a relevant geographic example.

**Question 11**

113 candidates chose this question. Many candidates began their answer to the question by explaining the causes of urbanisation. When done succinctly, this provided a basis for the rest of their answer, but some candidates did not address the question adequately due to a lengthy explanation of the causes, which was not required in the question.

This question asked candidates to identify the impacts of urbanisation in LDCs and MDCs, outline responses to these impacts and provide a discussion of the success of these responses. The ability to do this fluently whilst using appropriate geographic terminology determined the rating given for Criterion 2. Some candidates used diagrams to further explain some geographic terms and concepts, helping to support their answer.

A range of case studies from MDCs and LDCs were used to address the question. Using a number of examples from MDCs and LDCs, or a range of impacts from only a few MDCs and LDCs ensured a better rating for Criterion 8. Some candidates proposed responses to impacts, rather than outlining actual human responses using examples. This did not adequately address the question as the responses were not allocated to a particular city or country and therefore the level of success could not be meaningfully discussed.

In part (c), better answers were able to evaluate the responses to impacts and provide alternative solutions to improve the success of these responses. Better answers in this section evaluated each response with its level of success and provided suggestions to improve the outcomes of these responses.

Some candidates used different examples in the different parts of the question, meaning that they were not answering the question and were not able to adequately explain the situation in each example. This was detrimental to their rating on criterion 9, which requires candidates to identify an impact, outline the responses to that impact and discuss the level of success of those responses to that impact.

Some candidates benefited from the inclusion of a map, with their examples of cities in the MDCs and LDCs clearly named. However, in some cases this caused confusion when the cities were positioned in the wrong country!
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