# Assessment Schedule – 2005

# Scholarship Geography (93401)

**There are three parts to this marking schedule:**

1. **Introduction and overview**
2. **The marking schedule**
3. **The marking guidesheet**

### 1. Introduction and overview:

The objective of the Scholarship Geography examination paper is to allow candidates to demonstrate their ability in geography. The paper and the marking schedule have been produced to allow this candidate ability (as shown by candidate performance in answering the exam question) to be assessed. Judgements of candidate performance will be made by assessing the quality of the answers written in the examination against predetermined standards. The Scholarship Geography standard has a set of three performance descriptors.

**The best Scholarship Geography answers will be ones that:**

- integrate, synthesise and apply geographic skills, and show understanding of geographic ideas in relation to the context of river flooding and river flood hazard
- show breadth and depth of geographic knowledge, geographic understanding and geographic approaches
- recognise and evaluate different perspectives
- communicate ideas, opinions and judgements effectively
- offer logical conclusions and approaches
- show flexible thinking
- evaluate critically
- show originality and insight
- communicate, using illustrated essay format, knowledge, ideas, understanding and opinions in a sophisticated and integrated manner.

**2. Marking Schedule: Guidelines and detail for marking the two questions**

- The following instructions were given to markers.
- Read through the whole answer and rate the answer by 'holistic judgement and holistic marking' into one of four grades of response (A–D) – these are marker judgements of the quality of the response at scholarship standard:

  **A** – a superior answer meeting the requirements of Performance Descriptor 1. It is a high quality scholarship standard response (will be awarded a mark of **8** or 7). **Excellent.**

  **B** – an answer meeting the requirements of Performance Descriptor 2. It is a good and competent scholarship standard answer (will be awarded a mark of **6** or 5). **Good.**

  **C** – a sound answer meeting the requirements of Performance Descriptor 3. It has addressed the question with some success. An answer that meets minimum requirements of scholarship standard (will be awarded **4** or 3). **Satisfactory.**

  **D** – an answer that falls below scholarship standard even though it contains something relevant in an attempt to answer the question. A weak answer (will be awarded **2** or 1). **Weak.**

  A totally irrelevant answer or no attempt to answer has been made : award **0**. **No answer or nothing worthwhile.**

  – **Cross check the answer using the marking guide sheet** (see page 13) to determine if it has fulfilled the requirements of an A, B, C or D standard answer. Award the even mark to the answer (8, 6, 4, 2) if it has fulfilled these requirements. Award the odd mark (7, 5, 3, 1) if it has attributes of the category missing.

  – Answers **without visuals** should be awarded the odd number mark.

  – **For answers in category A** that are **exceptional**, award a mark of **8**.

  This indicates a particularly 'strong' answer.

  Where a candidate did not attempt an essay, the candidate was awarded zero marks.

**Question 1:**
**Analyse the causes of river flooding and critically evaluate the assertion that 'river flooding is caused more by the actions of people than it is by natural events and natural processes'**
*Refer to both the general geographic information and the case study information presented in Resource Booklet 93401R in your answer.*
*Within your answer include reference to, and discussion of* ***geographic ideas*** *and incorporate* ***appropriate visuals*** *such as maps, graphs, diagrams and tables to support your answer.*
*(Critically evaluate requires you to weigh up evidence, assess validity and make informed judgements)*

**Marking points**

***Overview:*** *River flooding occurs frequently. It is an event that has both spatial and temporal variation. It can be studied at different scales from local to global. River flooding is caused by both nature and by people. The natural events are related to climatological and geomorphological conditions and processes. People often accelerate or enhance the natural events. River floods are major natural hazards and can have disastrous results.*

- Ensure that the answer is about the **CAUSES of river flooding**.
- The answer should refer to both **natural and human causes of river flooding**.
- Events, processes and conditions that are analysed must be ones that **LEAD to and CAUSE rivers to flood**. Look for analysis that follows from wording such as: '*Rivers flood* ***because*** *… / When heavy and prolonged rainfall occurs this* ***causes*** *… and flooding of the river* ***results*** */ People can* ***cause*** *rivers to flood when they …'*
- **Do not award any credit** for answers that discuss the results of river flooding or of how people make flooding worse by living / building / developing in flood-prone areas – people do live in such areas but this does not cause rivers to flood. This sort of discussion is relevant to Question 2.
- **Analysis of the causes** of river flooding is required: look for discussion involving **description / explanation / generalising / categorising** of the causes of river flooding.
- **Critical evaluation** of the assertion that 'river flooding is caused more by the actions of people than it is by natural events and natural processes' **is required**: look for weighing up of evidence, assessing the validity of the statement and making an informed judgement / coming to a conclusion about whether the assertion is correct / partly correct / incorrect. The judgement / conclusion should be based on the evidence and argument presented by the candidate. This critical evaluation should form a significant part of the answer for an A or B grade to be awarded. Inclusion of critical evaluation in the conclusion only, will almost certainly limit the award to a C grade.
- **There is no right or wrong answer in relation to the assertion.** The analysis of the causes of river flooding should be balanced and make use of the resources provided – inclusion of other river flooding causes that comes from beyond the resource booklet information provided is also acceptable. The conclusion in relation to the assertion that ***'river flooding is caused more by the actions of people than it is by natural events and natural processes'*** should reflect the thrust and focus of the critical evaluation.
- **It is easier to argue that the assertion is incorrect**: ie to conclude that nature rather than people cause river flooding, and that the actions of people increase the frequency and magnitude of flooding rather than being the cause of floods per se. An answer that does cover a range of both natural and human causes of flooding but concludes that people are the main cause (ie agreeing with the assertion) can still be awarded the highest grade, providing the answer fulfils the requirements of an 'A grade' answer.
- **Case studies** from the resource materials should be incorporated within the answer:
  - Derwent River and towns of Malton and Norton in the North of England
  - Brahmaputra River in Bangladesh
  - Mississippi River USA
  - Bay of Plenty and lower North Island NZ areas 2004–2005.

- **Geographic ideas** could include:
  - natural processes (eg hydrological cycle)
  - natural geomorphological conditions (eg slope, soil and geology)
  - cultural processes (eg deforestation)
  - variations in frequency and magnitude of natural events like heavy rain
  - location – flooding is more likely in some places than it is in others
  - systems – change in one place or phenomena can lead to further changes
  - change can be both a normal and predictable process, eg floods are cyclical events (eg annual events) or a process that is erratic and unpredictable.
- **A framework for the answer** could be that river floods are natural events. Some rivers have a greater propensity to flood than others. Within a river basin there are areas where flooding is more likely to occur. Natural spatial variation in flooding is apparent. Rivers have natural variations in the amount of water they carry

and can carry: temporal variations in flooding, that can be either cyclic and predictable or irregular and unpredictable. These natural spatial and temporal variations can sometimes be identified by an analysis of different rivers' regimes. Order may sometimes be discerned in a chaotic-looking sequence of river flood events.

People can change water volumes entering rivers by affecting both rainfall and runoff. People also change the capacity of the river channel to carry and contain water. Some human actions that affect flooding location, amount and frequency are intentional, in other instances flooding can be the unplanned and unintentional outcome of human actions.

Overall the statement / assertion that *'river flooding is caused more by the actions of people than it is by natural events and natural processes'* can be argued to be incorrect: people accelerate and enhance natural events and natural processes that affect and cause river flooding, rather than being the main drivers of flooding.

- **Answers that take the opposite view** and present the case that the assertion is correct, can equally be scored maximum marks. The quality of the analysis and presentation of river flood information and ideas, and the evaluation of evidence, will determine the final grade and mark to be awarded.
- Expect reference to **hurricanes such as Katrina and Rita** to appear in answers. Many candidates will have studied these as 'topical geographic issues' in class, as well as being aware of their devastating flooding outcomes through the news. This type of 'outside the resources-provided information' is fine, providing it is related to the question by the candidate. **Keep in mind that river flooding is the theme**, NOT flooding from storm surges along the coast or wind damage. These hurricanes, and the floods that resulted, must be related to river flooding for their inclusion and use to be relevant in the answer.

- **Causes of river flooding**

| NATURAL / PHYSICAL | CULTURAL / HUMAN |
|---|---|
| – Climatological and geomorphological processes: above-ground and ground surface natural processes.<br>– High intensity rainfall and linkages to water volume in the river<br>– 1 in 100-year storm / 200 mm rain in 24 hours<br>– Low pressure systems and fronts<br>– Monsoon rains / Snowmelt<br>– River channel capacity full – bankfull stage<br>– Rain input exceeds land and river capacity to cope – river banks overtopped – floods<br>– Topography – low-lying land beside rivers<br>– Water input to and output from river get out of balance<br>– River basin events – systems and processes<br>– Hydrological cycle events<br>– Soil type and underlying geology both affect water runoff and water infiltration – impact on the speed and amount of water that enters the river – lag time and peak flow links<br>– Groundwater systems and river channels unable to cope with water volumes<br>– River volumes have natural spatial and seasonal variations<br>– Lag time and peak flow variations<br>– Many natural factors influence both river water volumes and whether rivers can cope with the water volume without flooding<br>– River floods are well documented natural events | – People may accelerate and magnify natural processes<br>– Actions of people are not planned to cause river flooding BUT the actions may be planned and deliberate (eg deforestation) and result in river flooding through a lack of foresight or ignoring of consequences<br>– Forest felling and bush clearance lead to more rapid water runoff<br>– Urban expansion reduces ground surface permeability and runoff speed and volume increases<br>– Urban growth and deforestation both reduce lag time and increase peak flows<br>– Silting in river channel due to soil erosion reduces channel capacity<br>– River control in one location can increase flood risks downstream<br>– Bridges restrict river channel width, leading to upstream flooding<br>– Stop banks if topped or breached can lead to long-term flooding<br>– Actions of people alter water runoff speed and volume<br>– Actions of people influence river channel capacity to carry water<br>– People may be causing changes to climate – more rainfall and more intense storms – global warming issues<br>– People have changed the nature, frequency and intensity of river floods |

**Question 2:**
**Discuss and explain why people have such varied views about the best way(s) of responding to the hazard of river flooding.**
*Refer to both the general information and the case study information presented in Resource Booklet 93401R in your answer.*
*Within your answer include reference to, and discussion of, the **different perspectives** people have regarding flooding and incorporate **appropriate visuals** such as maps, graphs, diagrams and tables to support your answer.*

**Marking points**

***Overview:** River flooding occurs frequently. River floods are major natural hazards and can have disastrous results. There are various ways of responding to the hazard of river floods, which range from the 'do nothing' approach through to the control and regulate approach. People vary in what they see as the best way of approaching and dealing with river flooding. The perspective people come from can be an influence on the approach they favour. Affected residents and government agencies, engineers and geographers, environmentalists and insurance companies could offer examples of people/groups with different perspectives on the issue of responding to river flooding hazard.*

- Ensure that the answer is about **responses to the hazard of river flooding**.
- Discussion can be of **pre-flood, during the flood and post-flood approaches** to the event and problem.
- The **bulk of the answer** should involve discussion of different ways of approaching and responding to river flood hazard and river flooding AND explanation of why there are these different views and approaches.
- Look for candidates discussing and offering explanation of **WHY different people and groups favour different approaches** AND the way these differences can be influenced and explained by the **perspective people and groups take and the perspective they come from.**
- **Case studies** from the resource materials should be used:
  - Derwent River and towns of Malton and Norton in the North of England
  - Brahmaputra River in Bangladesh
  - Mississippi River USA
  - Bay of Plenty and lower North Island NZ areas 2004–2005
- Ensure that other case studies are used in context, such as Hurricane Katrina, but allow transfer of ideas that relate to other hazard responses being applied to river flooding.
- **Some of the alternative ways of responding to the hazard of river flooding:**

| | |
|---|---|
| Short term approaches, eg insurance flood cover | Long term approaches, eg land use zones and controls: prohibited activities and uses in flood prone zones |
| Before flood occurs, eg sandbag banks and property in flood prone areas | After flood has occurred, eg cleanup |
| Take no action, eg accept that flooding is a natural event that can bring benefits | Maximum mitigation, eg install flood gates on rivers and have overflow areas for 'safe' flooding. Build levees |
| Hard solutions, eg concrete line banks and channel river | Soft solutions, eg encourage whole catchment management. Plant to manage and control run-off into rivers |
| Cost-benefit analysis | |

- **Ideas and facts about prevention of, and response to, river flooding:**
  - Flooding is a natural event. People often accelerate and enhance it
  - Preventing flooding could be impossible
  - Pre-emption and anticipation
  - Planning before floods to stop and reduce them
  - Planning before floods to mitigate and cope after the flood
  - "For every $1 spent on pre-flood plans, $100 is spent on relief and cleanup after floods" – is this a wise approach

- Research to identify flood hazard areas, then implement land-use controls in these areas
- Relocate people away from flood-prone areas
- Allow flooding – it is a natural event, plan to reduce impacts on people and property when flooding does take place
- Adopt a whole-catchment management approach
- Charity, rescue and cleanup
- Repair properties and river banks
- Control over climate difficult – weather extremes and human impact
- Control of run-off can be planned for with vegetation and land-use management
- Urban design to control and limit run-off into rivers
- River channel and river bank management policies

- **How do people want river flood hazard and river flooding dealt with – and why do people have varied views – this should incorporate a discussion of perspectives: what lies behind the different views? What is the point of interest or philosophical view that people come from, and how does this influence their views?**
  - Engineer may see from the viewpoint of what is technically feasible in terms of bank and channel design. Pushes a design and technical solution.
  - Environmentalist may want to limit disruption of natural systems and see a 'conservation / work with nature approach' as best
  - Council may be driven by concern to help local residents, but at the same time have money constraints to take into account
  - Scientists and conservationists may both be driven by a view that says we should adopt land use and environmental management polices that are sustainable long term into the future
  - Insurance companies have financial loss to themselves as a driver. May refuse to insure flood risk properties
  - People living in flood hazard areas want action that serves their needs: flood prevention schemes
  - Bangladeshi rural dwellers want floods controlled in a way that allows for some flooding (to help farming and fishing), but not so much that it leads to property and infrastructure damage and maybe death.
  - Residents of Norton, Malton, Bay of Plenty and lower North Island would want no flooding.
  - People living in an area with income and emotional ties to a flood hazard or flood disaster area will view flood hazard and flood events in a different way to an insurance company or government agencies.

**3. Marking guidesheet**

**Candidate number:**

**Question 1:**
Analyse the causes of river flooding and critically evaluate the assertion that 'river flooding is caused more by the actions of people than it is by natural events and natural processes'.
*Refer to both the general geographic information and the case study information presented in Resource Booklet 93401R in your answer. Within your answer include reference to, and discussion of geographic ideas and incorporate appropriate visuals such as maps, graphs, diagrams and tables to support your answer.*
*(Critically evaluate requires you to weigh up evidence, assess validity and make informed judgements)*

| | **Inclusion** | **Comment** |
|---|---|---|
| Analysis of natural causes of river flooding | | |
| Analysis of human causes of river flooding | | |
| Geographic ideas | | |
| Critical evaluation and judgement about assertion | | |
| Case studies | | |
| Appropriate visuals | | |
| **Overall judgement of Question 1:** | **A B C D**<br>**8 7 6 5 4 3 2 1 0** | |

**Question 2:**
Discuss and explain why people have such varied views about the best way(s) of responding to the hazard of river flooding.
*Refer to both the general information and the case study information presented in the resource booklet in your answer.*
*Within your answer include reference to, and discussion of, the different perspectives people have regarding flooding and incorporate appropriate visuals such as maps, graphs, diagrams and tables to support your answer.*

| | **Inclusion** | **Comment** |
|---|---|---|
| Different ways of responding | | |
| People with the different views | | |
| Perspectives | | |
| Case studies | | |
| Appropriate visuals | | |
| **Overall judgement of Question 2 :** | **A B C D**<br>**8 7 6 5 4 3 2 1 0** | |

**<u>Final judgement of the answer</u>:**

**Total mark: 16 – 15 – 14 – 13 – 12 – 11 – 10 – 9 – 8 – 7 – 6 – 5 – 4 – 3 – 2 – 1 – 0**