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91240



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NEW ZEALAND QUALIFICATIONS AUTHORITY  
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## Level 2 Geography, 2017

### 91240 Demonstrate geographic understanding of a large natural environment

2.00 p.m. Wednesday 15 November 2017  
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate geographic understanding of a large natural environment.	Demonstrate in-depth geographic understanding of a large natural environment.	Demonstrate comprehensive geographic understanding of a large natural environment.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

**You should attempt ALL parts of the question in this booklet.**

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–12 in the correct order and that none of these pages is blank.

**YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

Merit

TOTAL

6

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## INSTRUCTIONS

Name ONE **large natural environment case study** you will use to answer ALL parts of the question in this booklet.

South Island High Country (SIHC)

In your answers, you should:

- integrate comprehensive supporting case study evidence
- use appropriate geographic terminology and relevant geographic concepts, showing insight.

## Relevant Geographic Concepts

### Environments

Environments may be natural and / or cultural. They have particular characteristics and features, which can be the result of natural and / or cultural processes.

### Location

Location is where something is found. It can be an advantage or a constraint. Location can be described in absolute or relative terms.

### Perspectives

Ways of seeing the world that help explain differences in decisions about, responses to, and interactions with environments. Perspectives are bodies of thought, theories, or world views that shape people's values and have built up over time. They involve people's *perceptions* (how they view and interpret environments) and *viewpoints* (what they think) about geographic issues. Perceptions and viewpoints are influenced by people's *values* (deeply held beliefs about what is important or desirable).

### Change

Change involves any alteration to the natural or cultural environment. Change can be spatial and / or temporal. It occurs at varying rates, at different times, and in different places.

### Interaction

Interaction involves elements of an environment affecting each other and being linked together. Interaction incorporates movement, flows, connections, links, and interrelationships, which work together and may be one-way or two-way interactions. Landscapes are the visible outcome of interactions. Interaction can bring about environmental change.

**QUESTION**ASSESSOR'S  
USE ONLY**(a) Characteristics of the environment**

*Natural characteristics* of an environment include landforms (relief), climate, soils, and vegetation.

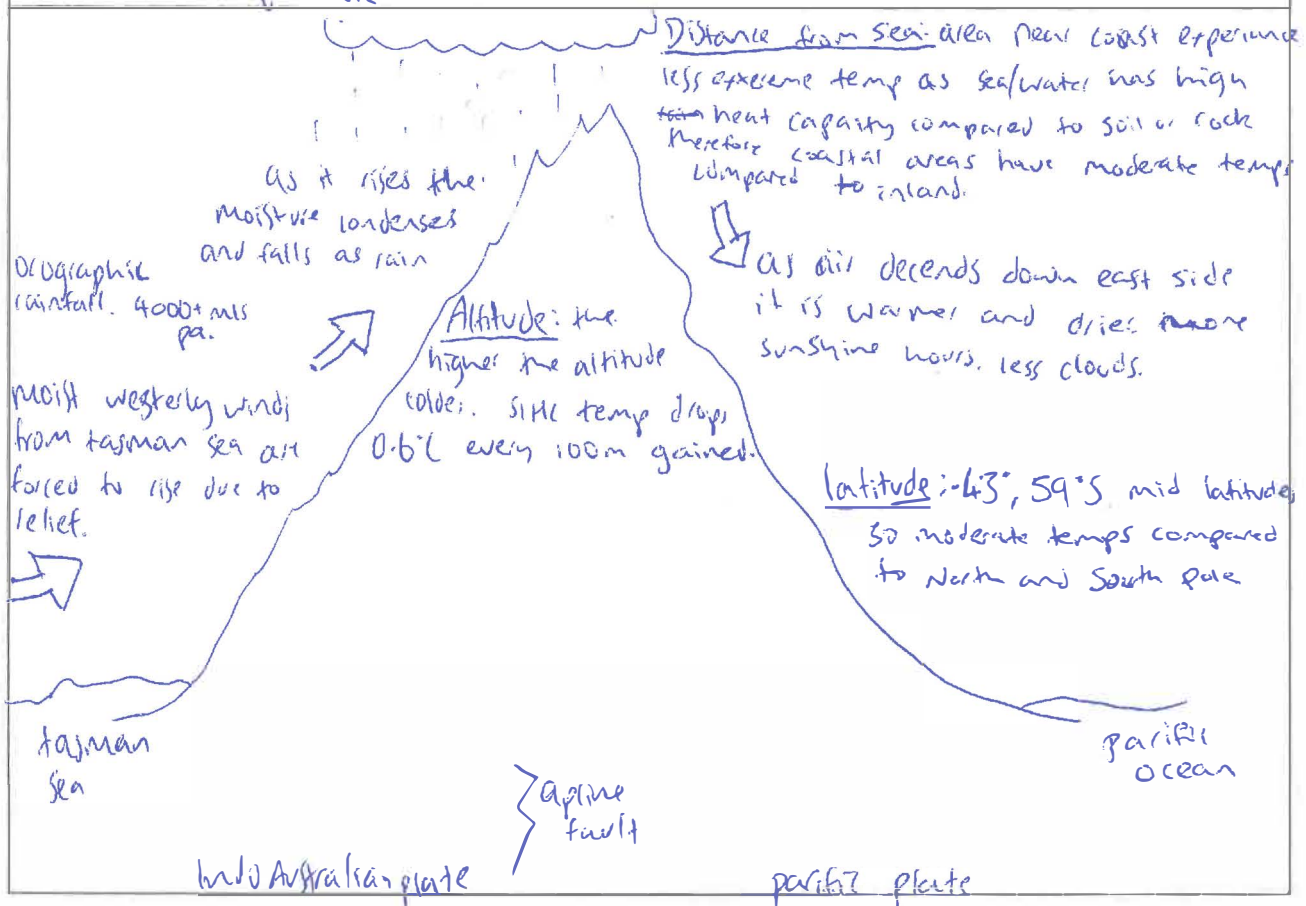
Fully explain how TWO characteristics of your large natural environment result from the interaction of the elements and/or processes within this environment.

You **MUST** include sketch maps and/or diagrams to support your explanations in the spaces on pages 4 and 6.

Characteristic (1): Climate

Characteristic (2): Relief

**PLANNING (OPTIONAL)**

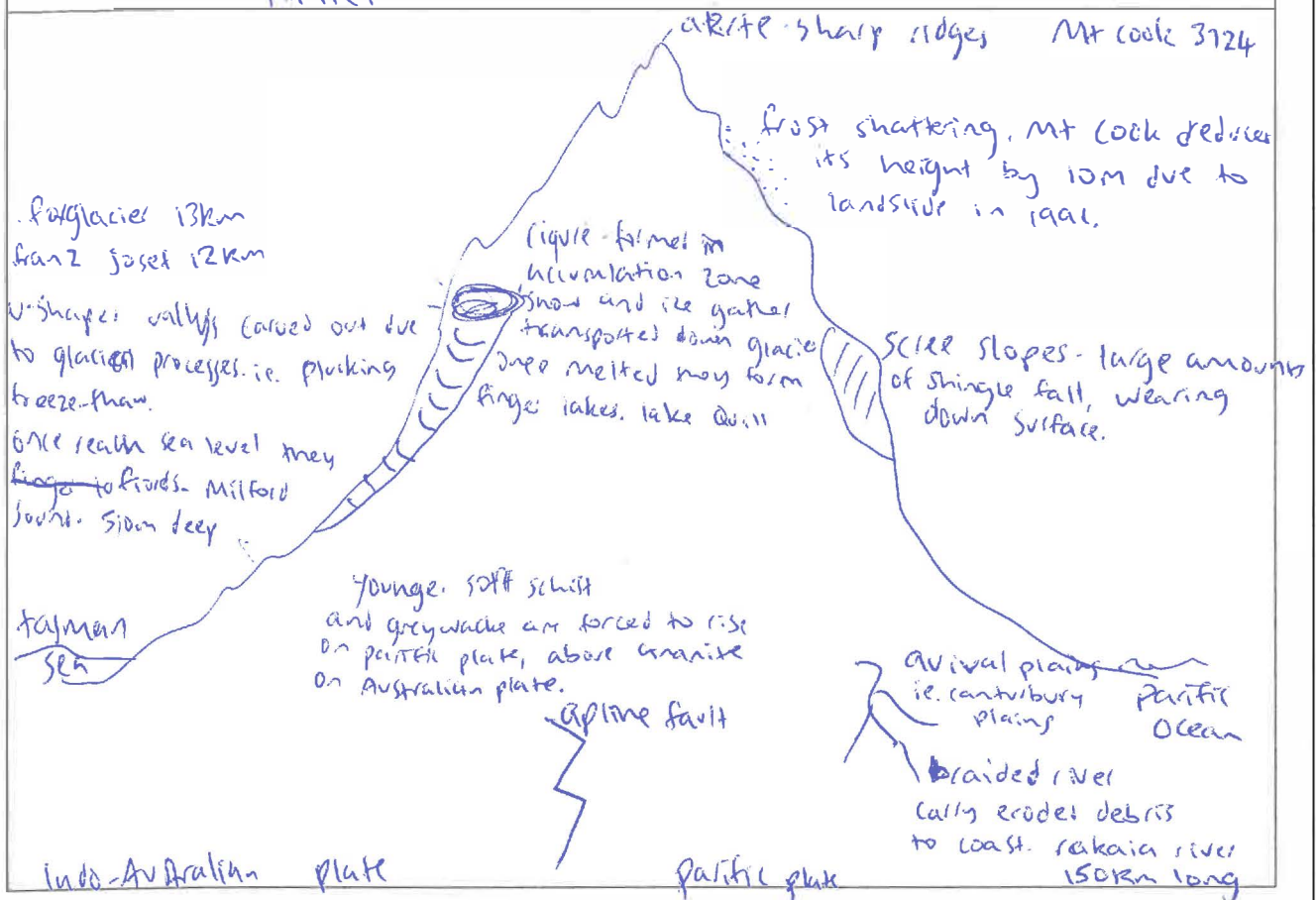
Characteristic (1): Climate

Fully explain how this characteristic of your large natural environment results from the interaction of the elements and/or processes within this environment.

Climate is a ~~major~~ major characteristic in the large natural environment - SIIC. The diverse climate is due to other elements such as relief interacting. Moist westerly winds from the Tasman are forced to rise due to the relief of the SIIC. As it rises, the moisture condenses and falls as rain. The ~~west~~ Westcoast experience orographic rainfall of 4000+ mm every year. The air then descends down the East side of the mountains, so it becomes warmer and drier. This results in the Eastcoast having less clouds, so therefore, more sunshine hours. The Distance from the sea also determines the climate of SIIC. Areas near the coast experience ~~more~~

less extreme temps as the sea/water heat capacity is higher ~~rather~~ than soil or rock. Therefore coastal areas have moderate temps compared to inland. ~~the latitude of the SITC is~~  
This is why places like Alexandria have experienced the hottest and coldest temps. ( $-15^{\circ}$  and  $37^{\circ}\text{C}$ ).  
The latitude of the SITC is  $-43^{\circ} 59'S$  which is in the mid latitudes, so this area experiences moderate temps compared to the north and South pole. Mt Cook is SITC and NZ's largest mountain with a height of 3724m. Because of its high altitude, Mt Cook experiences extreme cold temps. In the SITC, the temp drops  $0.6^{\circ}\text{C}$  every 100m gained. The climate of SITC leads to processes such as glacial, erosional etc. ~~these~~ processes wear down the SITC. //



Characteristic (2): Relief

Fully explain how this characteristic of your large natural environment results from the interaction of the elements and/or processes within this environment.

Relief is also another characteristic in the large natural environment - SITIC. The SITIC was formed by millions of years ago. 280 million ya, the area which became SITIC, was part of large landmass, Gondawandland. 130 million ya, mud and sand eroded off Gondawandland and was deposited onto the sea floor. pressure and heat from tectonic processes, compressed this into rock, known today as Greywacke. this rock makes up 60% of NZ's rock. 100 million ya, Gondawandland moved to create faulting and uplift. 83 million ya NZ separated from Australia from then, pressure has pressed up new land along the Alpine fault. There is a 7cm uplift pa. over the last 15 million years, 20 000m of land has been

pressed up. However 4000+m has been reduced due to weathering and erosion. In 1991 Mt Cook reduced its height by ~~10~~ 10 metres, because of a large landslide. This is also known as frost shattering.

Scree slopes occur when large amounts of shingle fall due to gravity. This wears down the surface of the mountains. Due to the colder temps, large amounts of snow and ice gather in large basins, called cirques which are formed in accumulation zones.

This ice and snow then gets transported down glaciers.

NZ's largest glaciers are Fox Glacier (13km) and

Franz Josef glacier (12 km). ~~At the~~ In the warmer season the ice and snow melted <sup>meaning</sup> ~~leaving~~ the

cirques, and now finger lakes, i.e. Lake Quill. U-shaped valleys are left carved out due to the glacial processes

i.e. plucking and freeze-thaw. Once glaciers reach

sea level, they form fiords, i.e. Milford Sound which is 510 metres deep and 19km inland.

Alluvial plains i.e. Canterbury Plains are flat areas.

used today for farming, cropping etc. braided rivers

i.e. Rakaia River is 150km and carries eroded debris to the coast. //

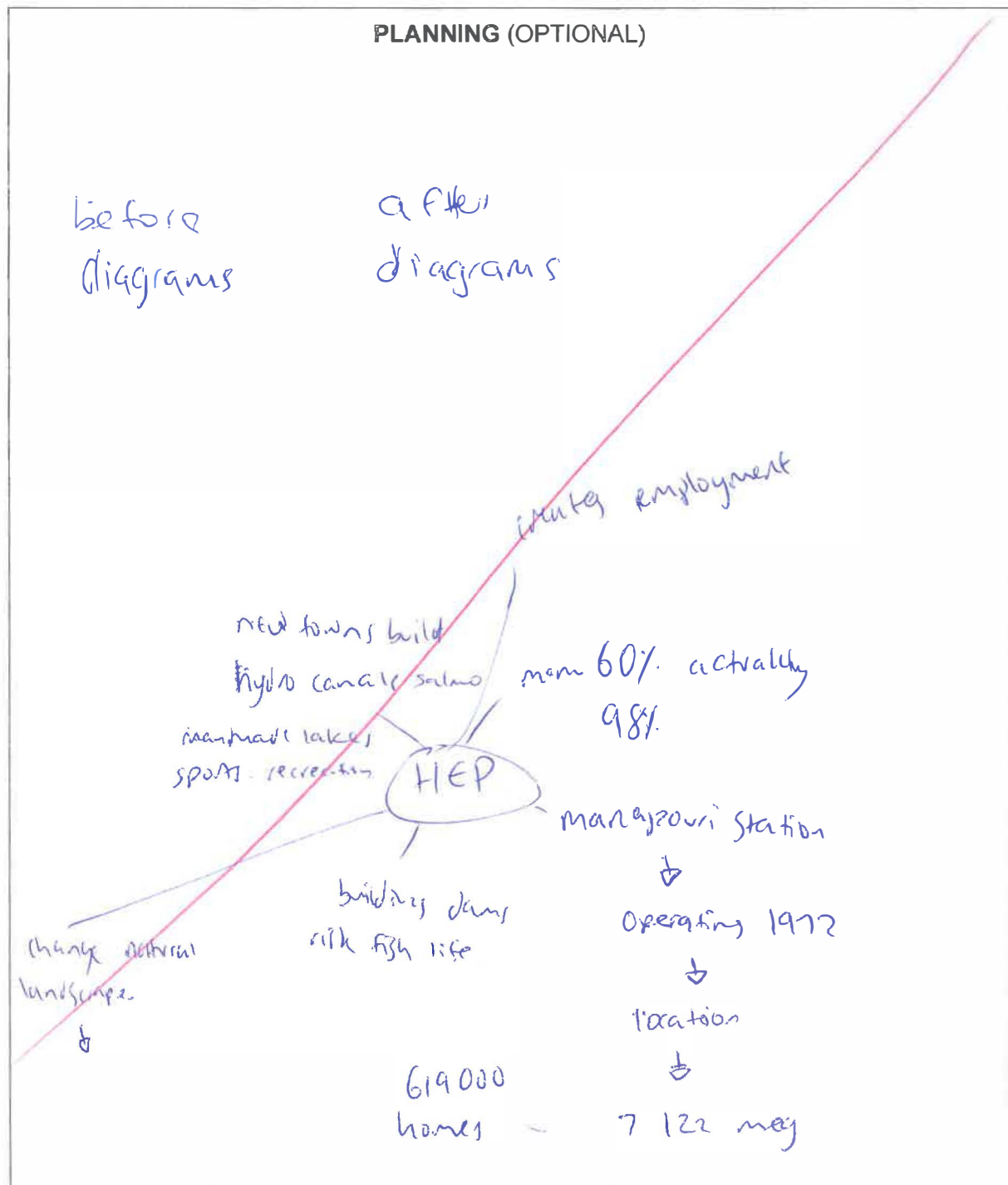
## (b) Perceptions

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USE ONLY

Different groups of people and individuals have different perceptions of the natural environment. Perceptions can be cultural, economic, or political. Perceptions are outcomes of people's background, experiences, or involvement with the natural environment, and can change over time.

Fully explain how a group/individual's perception of your large natural environment has affected, or affects, their use of this environment.

Group/individual: Hydro Hydro Electric Power (HEP)



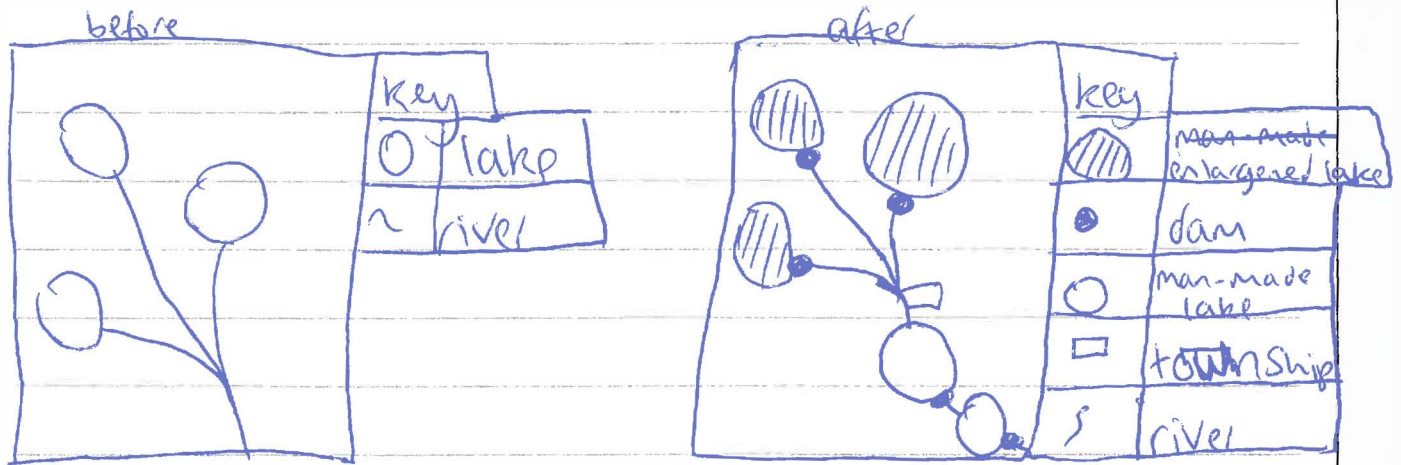


Fully explain how this group/individual's perception of your large natural environment has affected, or affects, their use of this environment.

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The Hydro Electric Power Companies have economic perception of the natural environment - SINC. Many people who lived in the South Island thought building the dams would cater for 60% of NZ South Island's power / electricity. However it has been proved that today, they make enough power for 98% of the South Island. Manapouri Station is the largest HEP station in the South Island and can provide 619000 homes with ~~electricity~~ power. This station was fully operating in 1972 and is located on the western arm of Manapouri river lake. It has seven large 122 megawatt generating units. HEP is a economic perception because money is made from the scheme. building the dams created employment for many. later a whole township, Twizel was built ~~for~~ to cater for the workers at the HEP site. However this has changed the natural landscape so it is suited for HEP companies. Natural rivers are blocked and dammed, turbines have been installed and lakes have be made deep, so they can hold more water. The building of the dams ~~have~~ has affected the natural life of fish species, as they are now unable to travel upstream as rivers have been blocked. this puts species such as whittbait (NZ native fish) at risk of being endangered. ~~Both~~ Tekapo town has been built to serve for workers who work nearby, <sup>and</sup> tourists. People have also taken advantage of this new ~~land~~ and change land by starting salmon farms

In the hydro canals, which is ideal as the canal is blocked, preventing the salmon to swim away. New lakes; - man-made lakes have also been built to increase productivity for HEP companies. These lakes are also used as tourist attractions as such as water sports and recreation. The diagrams below show the ~~the~~ natural <sup>environment</sup> ~~landscape~~ compared the effect humans have on the SINC.



Mk

Extra space if required.  
Write the question part(s) if applicable.

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USE ONLY

QUESTION  
PART

**Merit – M6**

The candidate has drawn appropriate annotated diagrams to explain how climate and relief have interacted to form the South Island High Country. In addition, the candidate explains in detail how the Hydro Electric Companies' perception has affected the environment through such things as rivers being blocked and dams constructed.

Detailed case study material is provided in all sections.