



GEOGRAPHY

Higher Level

Tuesday 11 May 1999 (morning)

Paper 3

2 hours

This examination paper consists of 3 Sections.

Section A consists of 1 compulsory question.

Section B consists of 4 questions

Section C consists of 2 questions.

The maximum mark for each question is 20.

The maximum mark for this paper is 60.

INSTRUCTIONS TO CANDIDATES

Do NOT open this examination paper until instructed to do so.

Section A: Answer question 1.

Section B: Answer ONE question.

Section C: Answer ONE question.

Illustrate your answers where appropriate with sketch maps and diagrams.

EXAMINATION MATERIALS

Required:
None

Allowed:

A simple translating dictionary for candidates not working in their own language
Millimetre square graph paper
Ruler divided into millimetres

229-028

SECTION A

TOPOGRAPHIC MAPPING

Answer all parts of the question in this section.

1. Refer to the topographic map extract of the area around Grindelwald, a town of 36 000 people in the Alps of Switzerland. Grindelwald is a large skiing centre in the winter and a centre for walking in the summer.

The area lies at a latitude of 46°37'N and a longitude of 8°02'E. The largest town in the region, Interlaken, is 26 kilometres by road west-north-west of Grindelwald, and it has a population of about 60 000 people. All other towns in the area have populations below 1000 people.

Contour lines are shown in brown where areas are covered with vegetation; in black in areas of bare rock; in blue on areas of ice and permanent snow.

Photo A shows Grindelwald Railway station, which is the eastern limit of the rail lines which run from Grindelwald to the west and to the south-west. Photo B shows Grindelwald from the cable car line which runs from the eastern end of the town to Pfingstegg.

The scale of the map is 1:25 000 and the contour interval is 20 metres.

- (a) Draw an annotated sketch map of the area shown in the map extract to show the relationship between the major landforms and the pattern of communications and settlement. [5 marks]
- (b) Using specific evidence from the map extract, describe the main hydrological features of the area. [3 marks]
- (c) Identify **four** main means of transportation used in the area shown, and draw a table to list briefly advantages and disadvantages of each. [4 marks]
- (d) For Photo A:
 - (i) identify the grid reference from which the photo was taken.
 - (ii) estimate the compass direction in which the camera is pointing.
- For Photo B:
 - (iii) identify the grid reference from which the photo was taken.
 - (iv) estimate the compass direction in which the camera is pointing. [4 marks]
- (e) Referring to the map extract, describe the geographical situation of Grindelwald, and discuss the advantages and disadvantages of this site. [4 marks]

Photo A



Photo B



On the map, black

- | | | | |
|----------------------------|--|------------------------|--|
| 1. Road (+6 metres wide) | | 11. Spot height | |
| 2. Road (+4 metres wide) | | 12. Contour | |
| 3. Road (+2.5 metres wide) | | 13. Auxiliary contour | |
| 4. Narrow road | | 25. House | |
| 5. Cycleway or laneway | | 26. Church | |
| 6. Footpath | | 27. Camping ground | |
| 7. Narrow gauge railway | | 33. Hole in the ground | |
| 8. Tunnel | | 34. Quarry | |
| 9. Embankment | | 35. Rock, scree | |
| 10. Ski lift | | 37. Moraine | |

On the map, dark green

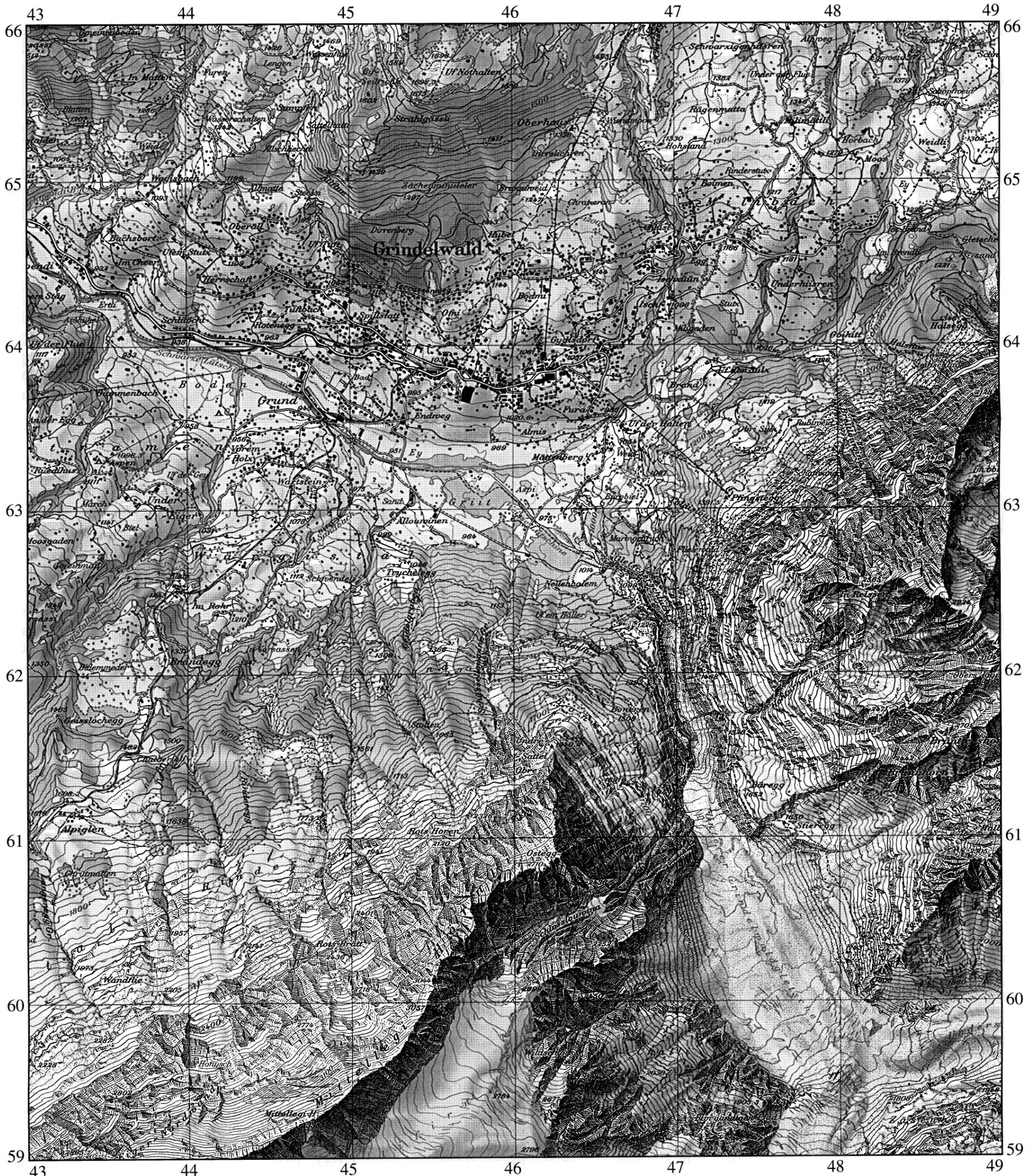
- | | |
|---------------------------------|--|
| 14. Forest with clear boundary | |
| 15. Forest, vague boundary | |
| 16. Open forest | |
| 17. Single tree, group of trees | |
| 18. Bushes or shrubs | |
| 19. Chestnut trees | |
| 20. Hedge | |

On the map, brown

- | | |
|----------------------|--|
| 31. Earth embankment | |
| 32. Cutting | |

On the map, blue

- | | |
|--------------------------------|--|
| 21. River, holding pond | |
| 22. Levee bank, old levee bank | |
| 23. Lake, bank | |
| 24. Indefinite river bank | |
| 36. Glacier cracks | |



SECTION B

THE NATURAL ENVIRONMENT

Answer ONE question from this section.



2. The image above shows the world pattern of clouds on a typical day in January. With reference to the global pattern of atmospheric circulation, describe and account for the distribution of clouds in the image. Discuss the ways in which the pattern shown is likely to differ in July, and the reasons for these differences. [20 marks]

3. "The highest and lowest areas of the lithosphere are both found at the earth's plate boundaries." With reference to the processes of plate tectonics, explain why this is so. [20 marks]

4. With the aid of a well-labelled diagram, explain the processes which occur naturally in the operation of the water cycle. Describe the functioning of the water cycle at a local level in an area you have studied, mentioning especially the ways in which these functions may have been affected by human activities. [20 marks]

5. Explain why ecosystems are often vulnerable to change. Illustrate your answer with a description of an ecosystem which is under pressure to change from either natural or human forces, or a combination of both. [20 marks]

SECTION C

RESOURCES

Answer ONE question from this section.

6. "Whether something is a resource or not depends on economic, technological and cultural factors which can change over time."
 - (a) Define the term **natural resource**. [2 marks]
 - (b) Discuss the ways in which economic, technological and cultural factors may influence the usefulness of particular natural resources. [10 marks]
 - (c) Say whether you agree with the statement in the question or not, and provide reasons and examples to support your view. [8 marks]

7. "When natural resources are used, it is inevitable that the environment will suffer."
 - (a) Define the term **natural resource**. [2 marks]
 - (b) With reference to specific geographical locations, discuss the causes and effects of **three** environmental problems, for example : acid rain, water pollution, air pollution, sedimentation, waste disposal. [10 marks]
 - (c) Say whether you agree with the statement in the question or not, and provide reasons to support your view. [8 marks]