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https://www.100test.com/kao_ti2020/448/2021_2022__E6_89_98_E7_A6_8F_E5_90_AC_E5_c81_448787.htm glaciers背景知识Glaciers exist where, over a period of years, snow remains after summers end. They exist in environments of high and low precipitation and in many temperature regimes. they are found on all the continents except Australia and they span the globe from high altitudes in equatorial regions to the polar ice caps. There is a delicate balance between climatic factors that allows snow to remain beyond its season. Scientists and skiers alike can note that within a few days of falling, snowflakes have noticeably begun to change. ... The snowflakes are compressed under the weight of the overlying snowpack. Individual crystal near the melting point have slick liquid edges allowing them to glide along other crystal planes and to readjust the space between them. Where the crystals touch they bond together, squeezing the air between them to the surface or into bubbles. During summer we might see the crystal metamorphosis occur more rapidly because of water percolation between the crystals. By summers end the result is firn -- a compacted snow with the appearance of wet sugar, but with a hardness that makes it resistant to all but the most dedicated snow shovelers! Several years are usually required for the snow to settle and to season into the substance we call glacier ice. We can best determine the health of a glacier by looking at its mass balance. Each year glaciers yield either a net profit of new snow, a net loss of snow and ice, or their mass may remain in equilibrium. Scientists divide each glacier into upper and lower sections termed the accumulation area, where snowfall exceeds melting during a year. and the ablation area, where melting exceeds snowfall. An equilibrium line, where mass accumulation equals mass loss, separates these areas. You can see it as the boundary between the winters snow and the older snow or ice surface. Its altitude changes annually with the glaciers mass balance. To find mass balance, scientists measure the area of each region and observe amounts of accumulation and ablation relative to preset stakes. After density measurements are made they may calculate how much water has been added or lost to the glacier. After a series of positive mass balance years, the glacier may respond to the increased thickness by making a glacial advance downvalley. A series of negative years may cause a glacial retreat, meaning that the terminus is melting faster than the ice is moving downvalley. Glaciers have been likened to mighty rivers of ice. Although they move many times more slowly, glaciers have equivalent changes in flow rate and often form falls of fast-moving ice above slow-moving ice pools. Glaciers flow faster down their centers than at ice margins, and more quickly at the surface than at the bed. ... How fast a glacier moves is mostly dependent on the thickness of the ice, and on the angle of its surface slope. Glacier speeds vary when changes are made in this geometry. They respond to excessively high seasonal snow accumulations by generating bulges of thicker ice that may move downvalley many times faster than the glaciers normal velocity. 100Test 下载频道开通，各类考试题目直接下载。详细请访问 www.100test.com