

Team Name+Number _____

Teammate 1 name _____ Teammate 2 name _____

Dynamic Planet: Glaciers

(by Shad160)

The following test is 80 questions long, split up into four different sections. The first 20 questions are worth 40 total points and the following 60 questions are worth 60 total points, adding up to a grand total of 100 points. All questions are related to glaciers in one way or another, and each question can be easily found on the internet; there is no trickery here, just a test of how well you have done your research and how well you have prepared yourself for this event.

The tiebreakers are as follows:

1st tiebreaker- Number of questions gotten right from Section C

2nd tiebreaker- Number of questions gotten right from Section A

3rd tiebreaker- Number of questions gotten right from Section B

4th tiebreaker- Number of questions gotten right from Section D

There is an attached answer sheet that you may rip off. You have 50 minutes to complete this test and may use up to 4 double sided pages (8 ½" by 11") worth of notes. Good Luck!

Section A

Match the glacial feature with the type that forms them, and write out whether they are erosional or depositional features. (2 points per question)

A. Continental Glaciers B. Valley Glaciers C. Both Continental and Valley

1. Arêtes
2. Horns
3. Hanging Valleys
4. Truncated Spurs
5. Kettles
6. Kames
7. Drumlins
8. Eskers
9. Cirques
10. Glacial troughs
11. Roche Moutonnées
12. Tarns
13. Fjords
14. Paternoster Lakes
15. Moraines
16. Tunnel Valleys
17. Outwash fans
18. Striations
19. Erratics
20. Crags

Section B

Choose the (most) correct answer for the following multiple choice questions.

(1 point per question)

21. How many distinct glaciations affected North America during the Pleistocene?
- a) One
 - b) Two
 - c) Three
 - d) Four
22. Firn is formed as the result of
- a) Changes in the flow rate of glacial meltwater
 - b) The partial melting and refreezing of snow crystals into small grains of ice
 - c) The polishing of bedrock by the scraping action of glacial ice
 - d) The deposition of unsorted glacial drift
23. Till is best defined as
- a) an unsorted deposit of rock material
 - b) sediment sorted by melted ice
 - c) sorted and layered deposits of sand
 - d) unsorted deposits of drift
24. The last ice age ended approximately ____ years ago.
- a) 100,000
 - b) 70,000
 - c) 10,000
 - d) 6,000
25. Large masses of ice on land that show evidence of movement are called _____.
- a) ice packs
 - b) glaciers
 - c) icebergs
 - d) all of these
26. The snow line is _____.
- a) the lowest altitude at which snow will fall in the warm months
 - b) the lowest altitude at which snow will fall in the cool months
 - c) the altitude above which snow does not completely melt in the warm months
 - d) the altitude above which snow does not completely melt in the cool months

27. Which of the following forms of ice has the greatest density?

- a) firn
- b) glacial ice
- c) granular ice
- d) snow

28. Which of the following erosional features is characteristic of rivers and not glaciers?

- a) arete
- b) cirque
- c) V-shaped valley
- d) roche moutonnée

29. Glacial drift that has been modified, sorted, and distributed by meltwater streams is called

_____.

- a) outwash
- b) till
- c) moraine
- d) rock flour

30. Carbon dioxide in the atmosphere _____.

- a) is low during glacial periods
- b) is high during glacial periods
- c) is constant between glacial and interglacial periods
- d) varies in a manner unrelated to glacial and interglacial periods

31. Calving refers to the process of

- a) Three or more cirque glaciers meeting to form a peak
- b) Long, parallel grooves being etched into bedrock by a moving glacier
- c) Large pieces of ice breaking off to form icebergs
- d) A knob of bedrock being carved into a hill

32. What rock type is conclusive evidence of past glaciation?

- a) Conglomerate.
- b) Pegmatite.
- c) Phyllite.
- d) Tillite.

33. Which sea froze over during the little ice age?

- a) The Red Sea
- b) The Baltic Sea
- c) The Dead Sea
- d) The Mediterranean Sea

34. Varve deposits are formed when _____ is deposited in the summer and _____ is deposited in the winter.

- a) gravel, sand
- b) fine clay, sand
- c) coarse silt, gravel
- d) coarse silt, fine clay

35. Glaciation formed by _____ of snow

- a) burial and metamorphism
- b) melting and refreezing
- c) erosion and deposition
- d) precipitation and melting

36. What was the name of the ice sheet that covered most of North America during the most recent ice age?

- a) Cordilleran Ice Sheet
- b) Laurentide Ice Sheet
- c) Midlandian Ice Sheet
- d) Cypress Ice Sheet

37. The end of a glacier is located:

- a) Where it meets an obstacle
- b) Where the average annual temperature equals 32 degrees F.
- c) Where snowfall plus inflow equals melting plus evaporation
- d) Where one year's snow just melts before the next year's snow begins

38. When a glacier retreats, a rock trapped within the ice

- a) continues to move toward the foot of the glacier
- b) retreats more slowly than the glacier front
- c) retreats as fast as the glacier front
- d) retreats faster than the glacial front

39. The farthest advance of an alpine valley glacier is marked by a deposit of:

- a) Medial moraine
- b) Lateral moraine
- c) Recessional moraine
- d) Terminal moraine

40. The process of glacial ice pulling away large blocks of rock is:

- a) Grooving
- b) Plucking
- c) Abrasion
- d) Surging

Section C

Match the following vocabulary words with their definitions (1 point per question)

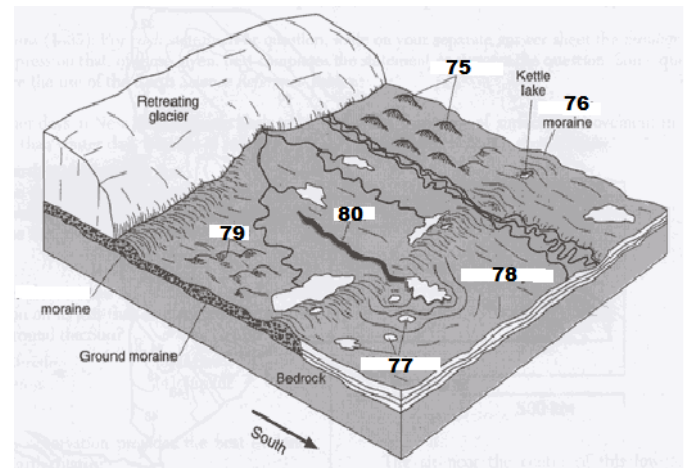
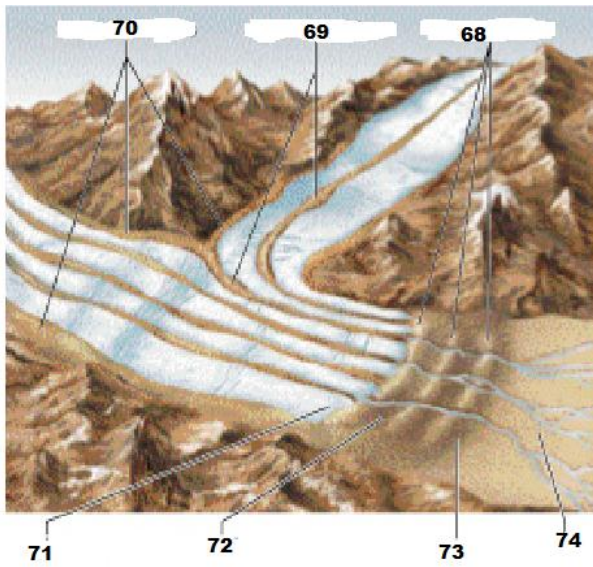
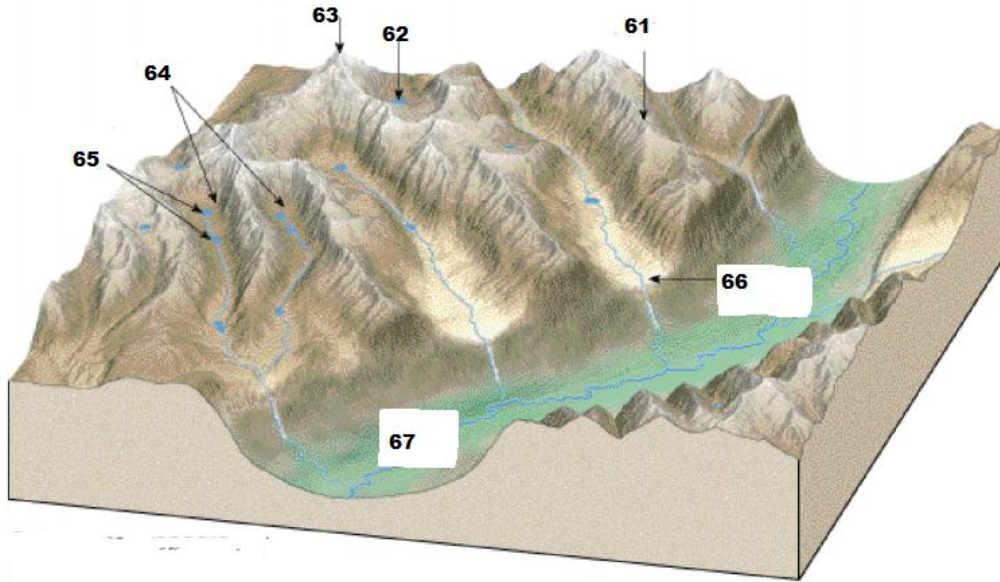
A. Stratugi B. Suncups C. Nunatak D. Cryoconites E. Katabatic F. Diagenic Mounds
G. Hoarfrost H. Firn I. Furrow J. Ablation K. Bergschrund L. Cwm M. Ogives
N. Rock Flour O. Proglacial P. Avalanche Q. Varve R. Fjord S. Gendarmes T. Glacier

41. A melted bowl-shaped depression in ice due to insolation ____
42. Mountains sticking up out of ice sheets ____
43. Snow dune ____
44. Conical shapes up to two meters high covered with rock material ____
45. Long grooves in subglacial till or pavement gouged by englacial debris. ____
46. A light, feathery coating of ice. ____
47. Pulverized rock of the smaller size sediment classes (silts and clays) produced by glacial milling can give outwash streams a milky appearance. ____
48. German word for "Last year's snow" ____
49. A wind that flows from a glacier, caused by air cooled by the ice becoming heavier than surrounding air, then draining down-valley. ____
50. The area in front of, or just at the outer edge of a glacier. ____
51. In glaciers, refers to melting, erosion and evaporation which reduces the area of the ice.
52. The ice wall commonly found at the head of a glacier which has separated slightly from the rock wall of its cirque. ____
53. A steep-walled semicircular basin in a mountain caused by glacial erosion. After glaciation, the depression may contain a lake. ____
54. Clay sized material deposited in glacial lakes during both summer and winter. ____
55. Ice towers such as seracs and penitantes. ____
56. A large mass of snow, ice or rock moving down a steep part of the glacier under the influence of gravity.
57. Steep-sided inlets of the sea which occur in flooded glacial troughs. ____
58. A large long lasting accumulation of snow and ice that develops on land. ____
59. Small holes 2-10 cm deep melted in glacial surfaces by small rocks. ____

60. Alternating wave crests and valleys that appear as dark and light bands of ice on glacier surfaces. ____

Section D

Label the following diagrams correctly (1 point per question).



Team Name+Number _____ Teammate Names _____

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Section B

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Section D

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Section C