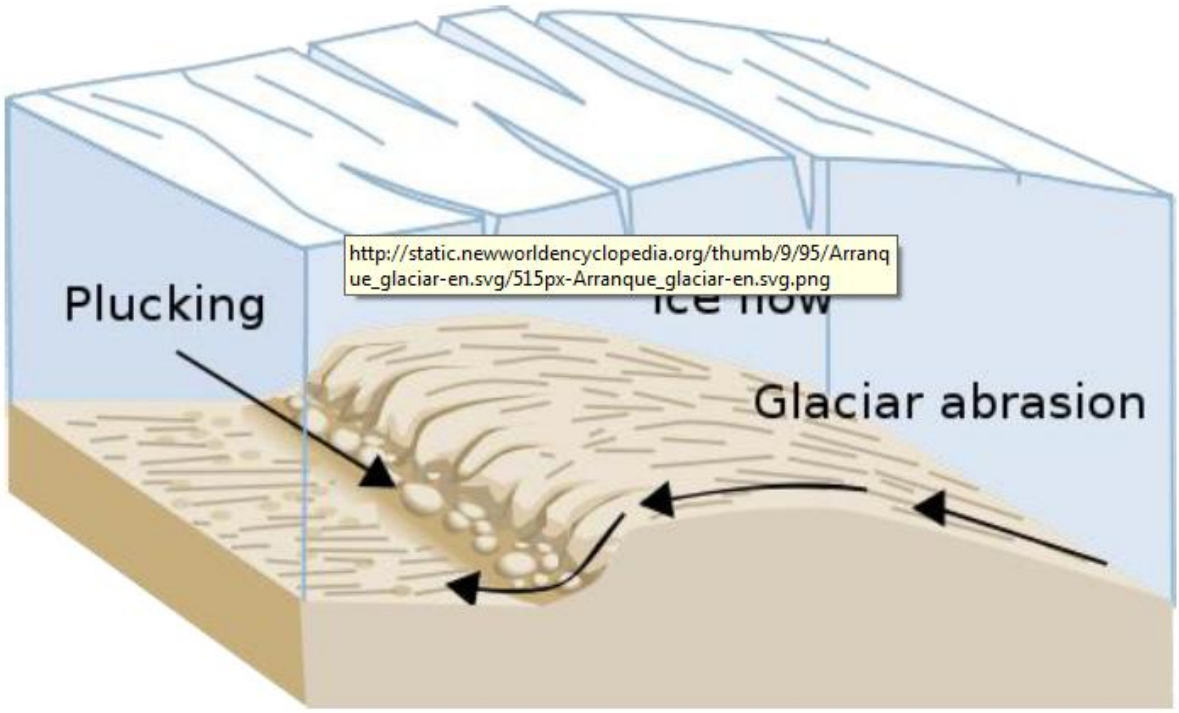
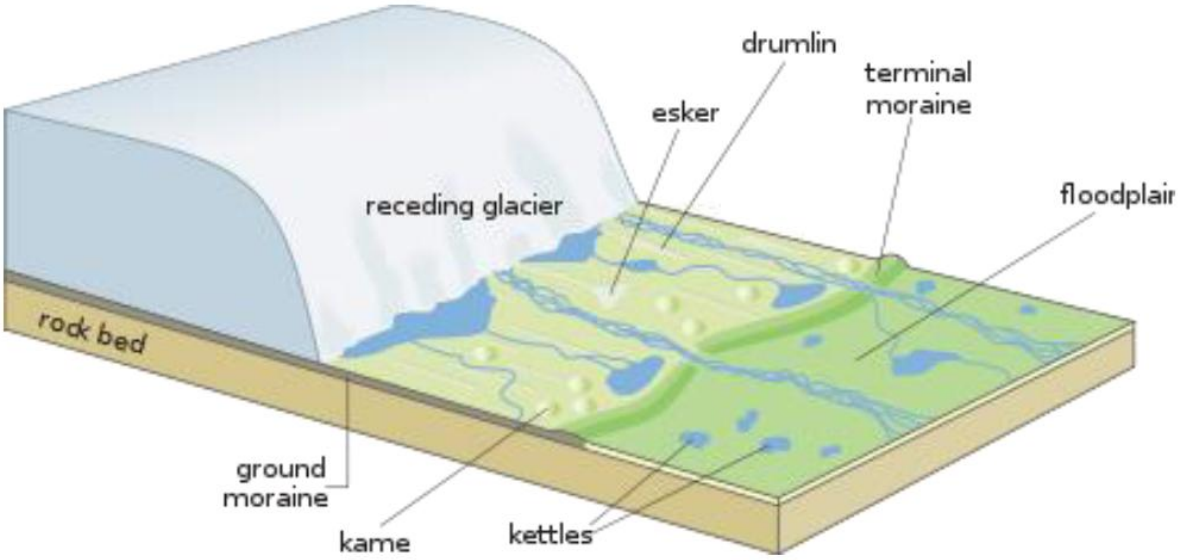
DP 2013 Tryout Answers
David Fan

(each worth one point unless otherwise indicated)

1. Valley glacier
2. Continental glacier
3. When a glacier picks up rocks
4. (3 points)

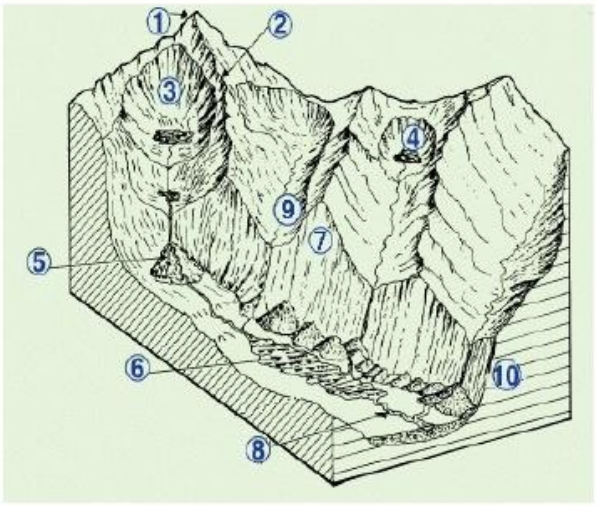


5. Till
6. Moraine
7. Kettle
8. Plucking and Abrasion
9. During ice ages, glaciers advance and retreat many times. This creates glacial features.
10. B
11. (See picture) 8 points



12. Till
13. (10 points)
    A. **Mountain or cirque**: fill bowl-like depressions that may be a few square kilometers
    B. **Valley glaciers**: flow through valleys and may be enlarged by cirque glaciers
    C. **Piedmont glaciers**: valley glaciers that flow out of the valley and onto the adjacent plain
    D. Icefields: massive collections of glaciers
    E. **Ice sheets**: largest accumulations of glaciers
14. True
15. **(**6 points) **Quaternary Period:** Past 1.6 million years
    Pleistocene Epoch: from the beginning of the Quarternary Period to the end of the last glaciation
    Holocene Epoch: 10,000 years ago to present
16. Internal deformation
17. 0.5 meters per day
18. Crevasses
19. 11,965,000
20. Neve and firn
21. Basal sliding
22. (10 points)

Glacial Landscapes



- **1** is a **Pyramidal Peak** because it has steep, triangular faces divided by sharp ridges or arêtes.
- **2** is an **Arête**, because it is a sharp ridge between corries.
- **3** is a **Corrie or Cirque**, because it is an armchair shaped hollow with steep back and sides.
- **4** is a **Corrie Lochan or Tarn**, because water has gathered in the hollow in the floor of the corrie.
- **5** is an **Alluvial Fan**, because it is a fan shaped pile of rock remains (alluvium) washed down by the stream and piled up where the steep valley side meets the valley floor.
- **6** is a **Ribbon Lake**, because it is a long narrow lake in a part of the valley cut deeper by the glacier.
- **7** is a **Truncated Spur**, because the ridge has been cut off sharply by the ice that flowed down the main valley.
- **8** is a **Misfit Stream**, because it is far too small to have cut the valley.
- **9** is a **Hanging Valley**, because the valley floor is much higher than the floor of the main valley.
- **10** is a **'U' Shaped Valley**, because it has steep sides and a nearly flat floor. (The other side of the valley is missing in this cut-away diagram.

23. Zone of ablation and zone of accumulation
24. Horn
25. Arête
26. The closely-spaced contours on two sides indicates steep walls; there are cirques on both sides of this high feature (4 points)
27. Cirque
28. Tarn
29. A river at the center; gentle upslope from river on both sides; then much steeper walls. (U-shaped)
30. It decreased. In 1979 it was less than one-third the size it was in 1901. (6 points)
31. Much greater ablation than accumulation.
32. The climate is becoming considerable warmer.
33. The glacial ice is still flowing forward although it is melting as it approaches the glacier's terminus (4 points)
34. Continental glacier
35. Transantarctic Mountains
36. An ice sheet covers a very large area of land; an ice shelf is attached to an ice sheet but covers an area covered by water. (4 points)
37. Valley glaciers are bound by valley walls and flow in the direction of the valley; an ice sheet is on a larger scale and flow in all directions; valley glaciers are thinner + smaller than ice sheets (4 pts)
38. An ice sheet flows in all directions; a valley glacier flows in the direction of the valley.
39. Draw a straight line between 0° and 18° longitude and another between 90° W and 90° E latitude. The point where they cross is the South Pole.
40. 4000-4499 meters
41. Oxygen-16
42. Oxygen-18

43. Hubbard Glacier
44. Prince William Sound