

Dynamic Planet Test Answer Key

Please write all answers here

School: WW-P HS South Number: 42

Names: Bill Yan Huang

Total Score: _____/150 Place: _____

Questions 1-24 are multiple answer. Please **circle** all appropriate answers. Each question is worth 2 points. Credit will only be given if the question is completely correct.

- | | | | | | | | | | |
|-----|------------------------------------|------------------------------------|------------------------------------|------------------------------------|-----|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| 1. | <input checked="" type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 13. | <input type="radio"/> A | <input type="radio"/> B | <input checked="" type="radio"/> C | <input checked="" type="radio"/> D |
| 2. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D | 14. | <input checked="" type="radio"/> A | <input type="radio"/> B | <input checked="" type="radio"/> C | <input checked="" type="radio"/> D |
| 3. | <input checked="" type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D | 15. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input checked="" type="radio"/> D |
| 4. | <input checked="" type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D | 16. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input checked="" type="radio"/> D |
| 5. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input checked="" type="radio"/> D | 17. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input checked="" type="radio"/> D |
| 6. | <input checked="" type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 18. | <input checked="" type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 7. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 19. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 8. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input checked="" type="radio"/> D | 20. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D |
| 9. | <input checked="" type="radio"/> A | <input type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D | 21. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input checked="" type="radio"/> D |
| 10. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D | 22. | <input checked="" type="radio"/> A | <input type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D |
| 11. | <input checked="" type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 23. | <input checked="" type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 12. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input type="radio"/> C | <input checked="" type="radio"/> D | 24. | <input type="radio"/> A | <input checked="" type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D |

#Correct * 2 = 48/48

Questions 25 – 42 are based on a topographic map of McMurdo Sound.

25. 200 (1)
26. 0.013 – 0.017 (1)
27. 4200 – 4299 (1)
28. The area is not covered by snow or ice (1)
29. The region is very dry, receiving little or no rain, and katabatic winds are present.

_____ (2)
30. Arête (1)
31. 175 – 200 (1)
32. Ice wedges Polygonal ground (2)
33. Overdeepening (1)
34. The water there is extremely saline, as well as being at a temperature far below the standard freezing point of water. The water is also mildly acidic and no light from the Sun can penetrate through the ice above. (2)
35. 15 – 25 (1)
36. Water from glaciers flowed down the valley into the overdeepened area, collecting and freezing there. Once frozen, the patches of salt and brine, denser and easier to melt than fresh ice, percolated downwards to the bottom. Over time, the brine accumulated, forming the lake. (2)
37. The iceberg blocked the outward flow of pack ice from the sound, causing a jam of ice. The resulting floe hindered ships. This was a detriment to penguins, as the floe elongated the distance they had to travel out to sea. (2)
38. 20 – 30 (1)
39. The most icebergs calve in the winter, since temperatures are warmer then. Due to the increased temperature, basal sliding increases, increasing the flow of the glacier and destabilizing the ice tongue, and meltwater weakens the ice tongue. As a result, more icebergs calve. (2)
40. 18 – 22 (1)
41. Trans-Antarctic (1)
42. Nuclear (1)

Questions 42 – 49 are based on data from an ice core.

43. Vostok (1)
44. 8000 – 12,000 (1)
45. Both the fluctuations in the ice core and D-O events exhibit a rapid increase in temperature followed by a gradual decrease. However, D-O events have a period of approximately 1500 years, much less, and have an amplitude about half as large. (2)
46. Orbital inclination, orbital eccentricity (1)
47. 1600 – 1800 (1)
48. 2700 – 2800 (1)
49. The dark layers are formed from snow compacted in the winter while the light layers are formed from snow compacted in the summer. With increasing depth, pressure increases, and the layers become less distinguishable and eventually disappear (2)

9 /9

Questions 50 – ___ are based on a topographic map of an alpine glacier.

50. 50 – 65 (1)
51. Glacial surge 6 – 8 (1)
52. Alaskan surge-type (1)
53. Looped medial moraines Ring effect of retreating glacier (2)
54. Previous surge events (1)
55. Medial moraine Lateral moraine (1)
56. The instrument is a stream gauge, used by scientists to measure meltwater flow from the glacier, allowing for analysis of glacial outburst floods and the correlation between meltwater flow and surging (2)
57. 10 (1)
58. Denali fault (1)
59. An earthquake could occur, which would trigger a rockslide, covering some part of the glacier and increasing the albedo, thus increasing the ablation rate. A rock fall and cryoconites from the debris would be expected. (3)

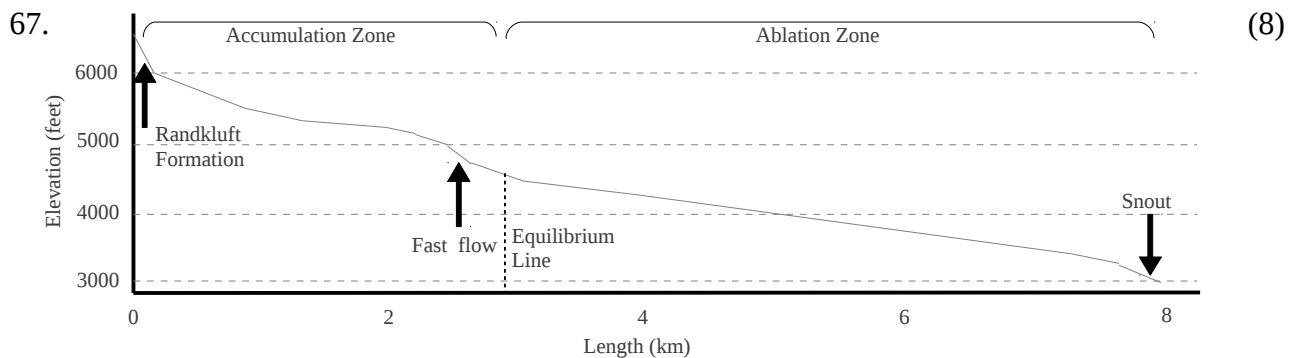
15 /15

Questions 60 – 66 are based on a map and two stratigraphical profiles of Long Island.

60. First, a glacial outwash fan deposited sediment along the moraine, creating a kame moraine (arc shape, units 1 – 3). The glacier then surged slightly, creating a push lobe moraine (tectonics, unit 4). The glacier then receded, depositing outwash, and then covered the moraine briefly again (units 6 – 7). (3)
61. First, as the glacier advanced, a thin layer of outwash was deposited (unit 1). A ribbon lake then formed from the effluence (unit 2). As sediment piled up, the lake was replaced with a delta (unit 3), which eventually receded as the glacier retreated. A final layer of glacial outwash covers the moraine (unit 4). (3)
62. In the western section of Long Island, the glacier advanced further during the formation of the younger Roanoke Point moraine than the older Ronkonkoma moraine, and thus covered and flattened the Ronkonkoma moraine in that region. (2)
63. Stratification/bedding (1)
64. Gravel (1)
65. Size of particles (1)
66. Size of trough crosses (1)

12 /12

Questions 67 – 72 are based on a topographical map of Bench Glacier and gopher data from a borehole.



68. Directly correlating, slight delay (1)
69. Decrease in pressure and maximum temperature (1)
70. An increase in turbidity and conductivity usually signals an increase in meltwater flow, and thus basal flow. However, the velocity of the glacier sharply decreases at this time. Additionally, temperature usually increases in such an event, but instead, it decreases. (2)

12 /12

Questions 71 – 90 are identification questions. Each question is worth 1 point. No partial credit will be given. Please use common terms only.

- | | |
|-------------------------------------|-----------------------------------|
| 71. <u>Finger lake/zungenbecken</u> | <u>Kettle lake</u> |
| 72. <u>Bergschrund</u> | <u>Randkluft</u> |
| 73. <u>Horn</u> | <u>Col</u> |
| 74. <u>Medial moraine</u> | <u>Rogen moraine</u> |
| 75. <u>Arête</u> | <u>Rock step</u> |
| 76. <u>Polynya</u> | <u>Moulin</u> |
| 77. <u>Fjord</u> | <u>Fjard</u> |
| 78. <u>Kame terrace</u> | <u>Outwash channel</u> |
| 79. <u>Erratic</u> | <u>Boulder clay</u> |
| 80. <u>Esker</u> | <u>Flute</u> |
| 81. <u>Drumlin</u> | <u>Crag and tail</u> |
| 82. <u>Cirque glacier</u> | <u>Ice cap</u> |
| 83. <u>Suncup</u> | <u>Penitentes</u> |
| 84. <u>Palsa</u> | <u>Pingo</u> |
| 85. <u>Blockfield</u> | <u>Polygonal/patterned ground</u> |
| 86. <u>Tuya</u> | <u>Tor</u> |
| 87. <u>Gelifluction</u> | <u>Cryoturbation</u> |
| 88. <u>Siachen</u> | <u>Lambert-Fisher</u> |
| 89. <u>Terminal moraine</u> | <u>Ground moraine</u> |
| 90. <u>Titan</u> | <u>Mars</u> |

20 /20

Question 91 is an essay question. You will be graded on the persuasiveness and substantiation of your response, and points will be deducted for false made-up illogical material. Please be concise.

91. Answers may vary
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