

Dynamic Planet Test - 2017

School Name:

Team Number:

Competitors' Names:

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Huntley Invitational

Total Score: _____

Identifying (1 point each)

1. Identify this landform (be as specific as possible):



2. Identify/classify this image (be as specific as possible):



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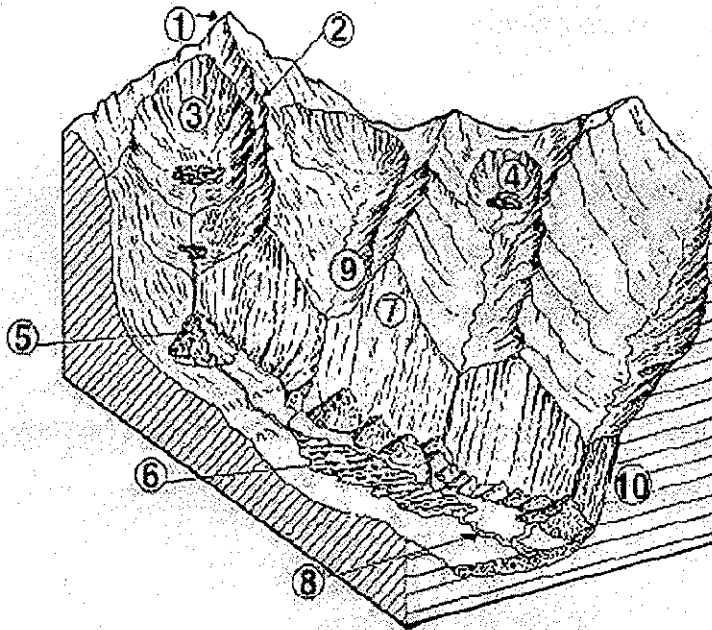
Fill in the blank/Short Answer (2 points each)

3. Give the years that these periods spanned:

- a. Quaternary Period:
- b. Pleistocene Epoch:
- c. Holocene Epoch:

4. Name this process: Melt water at base of glacier lubricates ice causing it to slide.

Label the following diagram using the following terms: *ribbon lake*, *hanging valley*, *cirque*, *alluvial fan*, *u-shaped valley*, *truncated spur*, *tarn*, *misfit stream*, *pyramidal peak*, *arete*



5.

6.

7.

8.

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11.

12.

13.

14.

15. This isotope of oxygen is less concentrated in fossils formed at cold temperatures and more concentrated in ocean water:

16. Name the six ions that make up 99% of all salts in seawater (in no particular order).

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

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17. Name the three types of plate tectonic boundaries.

- a.
- b.
- c.

18. What was the name of the "supercontinent"?

19. What are the top two elements found in the Earth's crust?

- a.
- b.

20. What is the name of the upper portion of the mantle next to the crust?

21. What is the most common rock found in the continental crust?

22. What is it called when one plate is pushed under another under the ocean?

23. What is the most common rock found in oceanic crust?

Ordering (3 points each)

24. Put the following glacial advances and interglacial periods of the Pleistocene period in order from earliest advance to most recent advance and indicate the interglacial periods in between each advance.

- a. ___ Wisconsin
- b. ___ Kansan
- c. ___ Sangemon
- d. ___ Yarmouth
- e. ___ Aftonian
- f. ___ Illinoian
- g. ___ Nebraskan

25. Rank the following parts of the world water supply from containing the largest volume of water to the smallest volume of water.

- a. ___ Oceans
- b. ___ Atmosphere
- c. ___ Soil Moisture
- d. ___ Ground Water
- e. ___ Inland Seas and Salt Water Lakes
- f. ___ Rivers
- g. ___ Ice Sheets and Glaciers
- h. ___ Lakes (Fresh)

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26. Put the following steps in order to explain how snow turns into glacial ice.
- ___ Repeated melting and refreezing forms granules called firn or névé
 - ___ When snow from one winter is covered by new snow in the next winter, it compacts under the added weight.
 - ___ The more the snow is compressed, the more air is pressed out of it
 - ___ As more snow falls, the pressure makes the earlier snowflakes melt; snow particles compact and freeze together; individual snowflakes compressed together
 - ___ Further compression occurs as more weight from more seasons of snow is added

Multiple Choice (2 points each)

27. The common name for sedimentary rock formed from glacial deposits is:
- Glacitectorite
 - Glacial Sandstone
 - Tillite
 - Agassite
28. According to the Milankovitch Cycle, which of the following is responsible for the 40,000 year cycle?
- Precession
 - Eccentricity
 - Obliquity
 - All of the above have an equal effect on the 40,000 year cycle
29. Which of the below is NOT true of isostatic rebound?
- It is responsible for an increase of land in Fennoscandia
 - It causes the Earth's shape to be more oblate
 - It is caused solely by ice sheets of the most recent ice age
 - It is compensated by submerging of land elsewhere
30. The opening of a glacial tunnel is known as a(n)
- Esker
 - Moulin
 - Stratugi
 - penitent
31. What two landforms both involve filling of a glacial depression?
- kame and drumlin
 - nunatak and tarn
 - kame and kettle pond
 - moraine and moulin
32. Which best describes the percentage of the Earth made up by the mantle?
- 60
 - 70
 - 80
 - 90

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33. What is the type of deposition exhibited by turbidity deposits after they exit a submarine canyon?
- graded bedding
 - structured bedding
 - random settling
 - crystal settling
34. Rift valleys in oceanic ridges are connected by which of the following?
- convergent boundaries
 - transform faults
 - divergent boundaries
 - tectonic plates
35. When is the best time to navigate a boat in a shallow, rock harbor?
- flood current
 - ebb current
 - high slack water
 - low slack water
36. What is the average rate of efficiency for energy transfer between trophic levels?
- 5%
 - 10%
 - 15%
 - 20%
37. In areas of high productivity on the west coast of continents, which of the following would you expect to be a prominent factor?
- coastal mixing
 - coastal stratification
 - coastal upwelling
 - coastal circulation
38. Low energy waves would be most characteristic of
- high swash saturation, high backwash, sand gain
 - high swash saturation, high backwash, sand loss
 - high swash saturation, low backwash, sand gain
 - high swash saturation, low backwash, sand loss
39. Which current defines both the Antarctic Ocean and keeps Antarctica cold?
- North Wind Drift
 - East Wind Drift
 - South Wind Drift
 - West Wind Drift

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40. What is the name for the effect that is extremely influential in the existence of Earth's ocean currents?

- a. Coriolis Effect
- b. Doppler Effect
- c. Bathymetric Effect
- d. Foram Effect

41. Why is the thermocline important?

- a. creates a barrier between marine life
- b. provides perfect conditions for different communities to thrive in
- c. is the area where nutrients are transferred
- d. was the starting point for all marine life

42. Which of the following four tide types is classified by having multiple high and low tides of the same height each day.

- a. Diurnal
- b. Semidiurnal
- c. Mixed
- d. semimixed

Matching (2 points each)

Match the term with its definition

- 43. ___ Low, often oval, frost heaves occurring in polar and subpolar climates, which contain permanently frozen ice lenses.
- 44. ___ Ice towers such as seracs and penitantes.
- 45. ___ Can give outwash streams a milky appearance.
- 46. ___ A land surface characterized by very irregular surfaces of marshy hollows and small hummocks formed as ice-rich permafrost thaws.
- 47. ___ Conical shapes up to two meters high covered with rock material.
- 48. ___ The area in front of, or just at the outer edge of a glacier.
- 49. ___ A clastic, predominantly silt-sized sediment, which is formed by the accumulation of wind-blown dust.
- 50. ___ The sound made as air bubbles formed at many atmospheres of pressure are released during the melting of glacier ice.
- 51. ___ Powdery windblown dust made of a combination of small rock particles, soot and microbes.
- 52. ___ Long grooves in subglacial till or pavement gouged by englacial debris.
- 53. ___ A wind that carries high density air from a higher elevation down a slope under the force of gravity.
- 54. ___ Water and debris fall into this crack in the ice.
- 55. ___ Rapid flow of snow down a slope.
- 56. ___ Distinctive features of glacial lacustrine environments.

- A. Stratugi
- B. Thermokarst
- C. Loess
- D. Cryoconites
- E. Katabatic
- F. Diagenic Mounds
- G. Hoarfrost
- H. Palsa
- I. Furrow
- J. Ablation
- K. Bergschrund
- L. Bergy Seltzer
- M. Rock Flour
- N. Proglacial
- O. Avalanche
- P. Varve
- Q. Pit Pond
- R. Gendarmes

