

# Northern Regionals 2011 -- Fossils

## Answer Sheet

Team number: \_\_\_\_\_

Contestant names: \_\_\_\_\_

\_\_\_\_\_

**Note: Items with asterisks indicate tie breakers.**

### Station 1:

1.
  - A) Impression
  - B) Petrification
  - C) Mineral Replacement
  - D) Pseudofossil
  - E) Carbonization
  - F) Internal mold/steinkern
  - G) Extenal mold
  - H) Trace fossil
  - I) Actual remains
  - J) Cast
2. Hard parts...
3. rapid burial, mineralization...

### Station 2:

4. Graptolithina or graptolite
5. C
6. A
7. C

8. A

### Station 3:

9. stromatolite (*Collenia*)
10. D
11. A
12. A
13. Oxygen in the atmosphere

### Station 4:

14. C
15. C
16. C

\* Items with an asterisk indicate tie-breakers

**Station 5:**

Match the description to the geologic time division. Write the letter of the description on the appropriate blank below.

	<b>Time division</b>	<b>Description</b>
<u>  </u> <b>K</b> <u>  </u>	17. Permian period	<b>A.</b> First fossil evidence of blue-green algae
<u>  </u> <b>C</b> <u>  </u>	18. Silurian period	<b>B.</b> First dinosaurs appeared
<u>  </u> <b>N</b> <u>  </u>	19. Carboniferous period	<b>C.</b> First vascular plants appear on land
<u>  </u> <b>I</b> <u>  </u>	20. Mesozoic Era	<b>D.</b> Megafauna, neandertals, and the last ice age
<u>  </u> <b>L</b> <u>  </u>	21. Cenozoic Era	<b>E.</b> Ediacaran fauna
<u>  </u> <b>M</b> <u>  </u>	22. Devonian Period	<b>F.</b> Explosion of life occurs
<u>  </u> <b>G</b> <u>  </u>	23. Quaternary Period	<b>G.</b> Age of man
<u>  </u> <b>H</b> <u>  </u>	24. Jurassic Period	<b>H.</b> Archaeopteryx first appeared
<u>  </u> <b>B</b> <u>  </u>	25. Triassic Period	<b>I.</b> Ended with the K-T extinction
<u>  </u> <b>J</b> <u>  </u>	26. Paleozoic Era	<b>J.</b> Ended with the largest mass extinction event
<u>  </u> <b>F</b> <u>  </u>	27. Cambrian Period	<b>K.</b> Age of amphibians
<u>  </u> <b>E</b> <u>  </u>	28. Proterozoic Eon	<b>L.</b> Age of mammals
<u>  </u> <b>D</b> <u>  </u>	29. Pleistocene Epoch	<b>M.</b> Age of fishes
<u>  </u> <b>A</b> <u>  </u>	30. Archean Eon	<b>N.</b> Widespread coal swamps

**Station 6: 30) *Baculites***

31.   *Orthoceras*
32.   **A and C**
33.   **D**
34.   **C**
35.   **Nacre**

\* Items with an asterisk indicate tie-breakers

**Station 7:**

- 36. Calamites
- 37. Annularia
- 38. A
- 39. A

**Station 8:**

- 40. Gastropoda
- 41. D
- 42. Exogyra
- 43. B
- 44. B

**Station 9:**

- 45. C
- 46. B
- 47. D
- 48. \* Cloning from viable DNA

**Station 10:**

- 49. A) *Platysaurus* B) *Triceratops* C) *Tyrannasaurus rex*
- 50. B, It's an ornithiscian, not a sauriscian
- 51. *Dimetrodon*
- 52. It's a LIZARD (legs not under hips)
- 53. B

**Station 11:**

- 54. B
- 55. Bryozoans
- 56. Cnidaria
- 57. Fenestrate
- 58. A

**Station 12:**

- 59. Echinodermata
- 60. Crinoidea
- 61. Blastoidea, Pentremites
- 62. Sea lilies OR feather stars
- 63. crinoid HOLDFAST

**Station 13:**

- 64. E
- 65. B

Use the table below to help you answer the following questions

Half-lives	Percent <sup>123</sup> X remaining	Percent <sup>123</sup> Y accumulated	<sup>123</sup> X/ <sup>123</sup> Y ratio
0			
1			
2			
3			
4			

- 66. 2
- 67. 200 m.y.
- 68. older than 200 m.y.
- 69. short half-life, most rocks don't have carbon...

**Station 14:**

- 70. \_\_\_ *Favosites* \_\_\_\_\_
- 71. \_\_\_ *Tabulae* \_\_\_\_\_
- 72. \_\_\_ *Halysites* \_\_\_\_\_
- 73. \_\_\_ *rugose or horn coral* \_\_\_\_\_
- 74. \_\_\_ *septae* \_\_\_\_\_
- 75. \_\_\_ *A* \_\_\_\_\_
- 76. \_\_\_ *F* \_\_\_\_\_

**Station 15 \*\***

- A. \_\_\_ *Lepidodendron* \_\_\_\_\_
- B. \_\_\_ *Fusilinids or Triticites* \_\_\_\_\_
- C. \_\_\_ *Graptolite* \_\_\_\_\_
- D. \_\_\_ *gastroliths (trace)* \_\_\_\_\_
- E. \_\_\_ *Mucrospirifer* \_\_\_\_\_
- F. \_\_\_ *Baculites* \_\_\_\_\_
- G. \_\_\_ *Phacops* \_\_\_\_\_
- H. \_\_\_ *Favosites* \_\_\_\_\_
- I. \_\_\_ *Platystrophia* \_\_\_\_\_
- J. \_\_\_ *Metasequoia* \_\_\_\_\_