

2004 Southern Colorado Regional Fossils Exam

Answer Key

Station A: Clam and Gryphaea

For information on how to order Fossil Kits and other SciOly coaching aids, visit:

1. Valves [or bivalve]
2. (d) brachiopod
3. Muscular foot [or foot]
4. (b) mantle
5. (b) filter feeders
6. (a) equal
7. Coquina
8. (a) devil's toenails
9. Gryphaea (**Tie-breaker # 1**)

<http://www.otherworlds-edu.com>

or

<http://www.stellarjourney.net>

Station B: Molds and Casts

- 10 The article refers to "flying dinosaurs." One major characteristic of dinosaurs is that they did not fly. (**Tie-Breaker # 2**)

Station C: Shark tooth, fish impression, and a component of fish anatomy

11. (a or T) True
12. Its teeth were very hard. Its skeleton was made of soft cartilage.
13. Vertebrata
14. c) Chondrichthyes
15. Devonian
16. (d) unaltered.
17. Paleozoic
18. Vertebrae
19. (d) Osteichthyes.
20. (a) external mold
21. (a) sedimentary

Station D: Sea Urchin, Sand Dollar, Pentremites, Crinoid

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22. Echinodermata
23. Spines
24. The pattern of five radiating spokes
25. This is the sand dollar's mouth.
26. Pentremites (or Blastoids)
27. Pentremites (or Blastoids) and crinoids
28. They have hard parts. (and/or live in a watery environment)
29. d. They were predators.
30. Sea lilies
31. They gather small particles of food to transfer to the creature's mouth.

Station E: Coral

32. Cnidaria
33. Their skeletons
34. Polyps
35. These parts were hard; others were very soft.
36. Tentacles
37. (c) warm, shallow seas.
38. Horn Coral, cup coral, or Rugosa
39. (b) down.
40. a. Cnidaria
b. Rugosa
c. Hexagonaria
41. (a) colonial

- 42. Its shell
- 43. The largest and last to form, or foremost, or any other accurate descriptor
- 44. Nautilus (Nautili)
- 45. By doing so, the ammonite could rise or sink to different levels.
- 46. (a) sulture
- 47. Conducted water in and out of the mantle; used for "jet propulsion."
- 48. Siphon (not siphuncle)
- 49. b) skeleton

Station G: Dinosaur bone, petrified wood, amber, fossil leaf, dinosaur skin impression, and a slab containing a worm trail

- 50. a. Permineralization
 - b. Permineralization
 - c. Silica (any other form of the word is also acceptable)
- 51. (a or T) True
- 52. (e) remaining unaltered.
- 53. Resin (**Tie-breaker # 3**)
- 54. (b or F) False
- 55. (e) remaining unaltered.
- 56. A. (a) an external mold
 - B. (c) a cast.
- 57. Trace fossil

58. (a) a feathery filter system

59. (b) remain alive today

60. (a) replacement

61. (Iron) Pyrite

62. Iron

63. (b) dissimilar

64. a. lamp shells

65. a. Brachiopod

b. Bivalve

c. Brachiopod

d. Brachiopod

e. Bivalve

f. Brachiopod

Station I: Two specimens composed of many shells

66. (b) exterior mold

67. (a) internal molds

68. Brachiopods

69. Turritella

70. Gastropoda

71. (c) limestone.

72. a. No

b. Although brachiopods evolved during the Paleozoic era, turritella did not evolve until the Triassic Period of the Mesozoic era. Both were thriving during the Mesozoic.

73. Coquina

- 74. c. Lepidodendron
- 75. c. Paleozoic.
- 76. a. Pennsylvanian.
- 77. a. Lycopsidea

Station K: Trilobites

- 78. Phacops
- 79. Arthropoda
- 80. Before
- 81. Marine (or any other word describing such an environment)
- 82. Their three-lobed bodies (segments or segments acceptable also)
- 83. They may have stopped to eat the worms. **(Tie-breaker # 4)**
- 84. Protection against a predator (Defense mechanism)
- 85. Trilobites are extinct **(Tie-breaker # 5)**

Note on tie-breakers: The predetermined tie breakers are used in the order they appear, i.e. 9, 10, 53, 85. If, for example, three participants obtain identical scores and only one correctly answers question # 9, that participant is ranked number 1. If two of the three participants correctly answered question # 9, the next tie-breaker is used. The participant who missed question # 9 is positioned at the bottom of this group. If only one of the two tying players correctly answered question # 10, that player is placed above the other two.

Top six Division B Scores (85 possible)

52.4
 48.1
 47
 46.3
 42
 40.5

Average Division B Score

34

Top six Division C Scores (85 possible)

65.3
 51.5
 49.3
 46.6
 42.6
 40.5

Average Division C Score

31

Students' written comments

"It was pretty hard, but I like the challenge."

"It was too hard."

"Fairly difficult, but challenging enough to be fun."

"There was not enough time at each station, but we liked the questions."

"I like a good challenge."

"It was difficult, but well done."