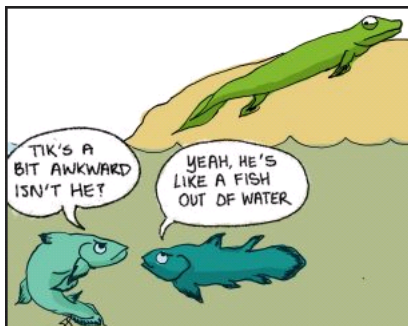


**Fossils C - Fossils C Rickards 2020 - Rickards Invitational Div. C - 12-05-2020****Welcome to Fossils C!**

This test is written by Ben Ehlert

**Rules:**

1. If you're suspected of cheating, you will be disqualified. Please uphold the ethics of Science Olympiad, as well as your morals. I really don't want to disqualify people.
2. There will be 50 minutes to complete this test.
3. Please try your best. Meme answers are NOT appreciated.
4. If you would like to leave a test review or complaint, please contact me on the forums (BennyTheJett) or Discord (BennyTheJett1#3979)
5. Good Luck. Have Fun!

**Resources Allowed:**

- Non-Graphing Calculators (1 per Partner)
- 2 inch binders (measured from the inside of the rings) (1 per partner)
- Scratch Paper
- Pencil
- Your Brain
- Logic
- Reasoning
- The Memes On The Front Of Your Binder

**1. (1.00 pts)**

Identify the above image to the lowest taxonomic level.

**2. (2.00 pts)** What part of this organism is preserved? Why only that specific part of the organism?

3. (1.00 pts) If this organism is extinct, during what geologic period did this organism go extinct?

4. (1.00 pts)



The image above is a \_\_\_\_\_.

5. (1.00 pts) This image was responsible for weakening the greenhouse effect on Earth. How did the beings of the above image do that?

6. (1.00 pts) The coelacanth (latimeria) is an example of a what?

- ☐ A) Elvis Taxon
- ☐ B) Lazarus Taxon
- ☐ C) Living Fossil
- ☐ D) Wastebasket Taxon
- ☐ E) Zombie Taxon
- ☐ F) Tucker Taxon

7. (1.00 pts) About how long does an average coelacanth in the genus *Latimeria* live?

- ☐ A) 8 Years.
- ☐ B) 15 Years.
- ☐ C) 30 Years.
- ☐ D) 50 Years.
- ☐ E) 70 Years.
- ☐ F) 90 Years.

8. (1.00 pts)



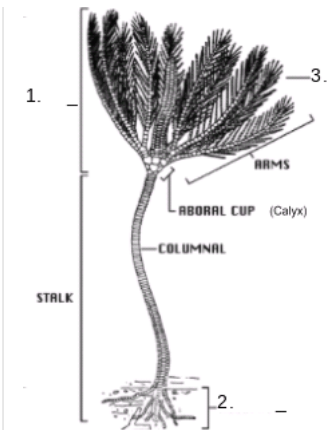
Identify the above image to the lowest taxonomic level on the rule sheet.

9. (1.00 pts) About how many species within this specimen have ever been discovered?

10. (2.00 pts)

Recent studies on this organism challenge its current taxonomic designation. The recent studies argue that this organism is actually what? Why do the studies suggest this?

11. (1.00 pts)



Identify the image above to the lowest taxonomic level on the rule sheet.

12. (1.00 pts) In the above image, what part of the specimen is 1?

13. (1.00 pts) In the above image, what part of the specimen is 2?

14. (1.00 pts) In the image above, what part of the specimen is 3?

15. (1.00 pts)



Identify the image to the lowest level on the rule sheet.

**16. (1.00 pts)** Between the ages of 10 and 15 years old, about how many kilograms did this specimen add to its body mass?

**17. (1.00 pts)**

This specimen is regarded for having larger than normal olfactory bulbs for an animal with a brain its size. This likely means that this specimen had a really good sense of \_\_\_\_\_.

**18. (1.00 pts)**



Identify the specimen above to the lowest level on the rule sheet.

19. (1.00 pts) About how many million years ago did this specimen come about?

20. (1.00 pts) What is the leading theory as to what this specimen used its large skull for?

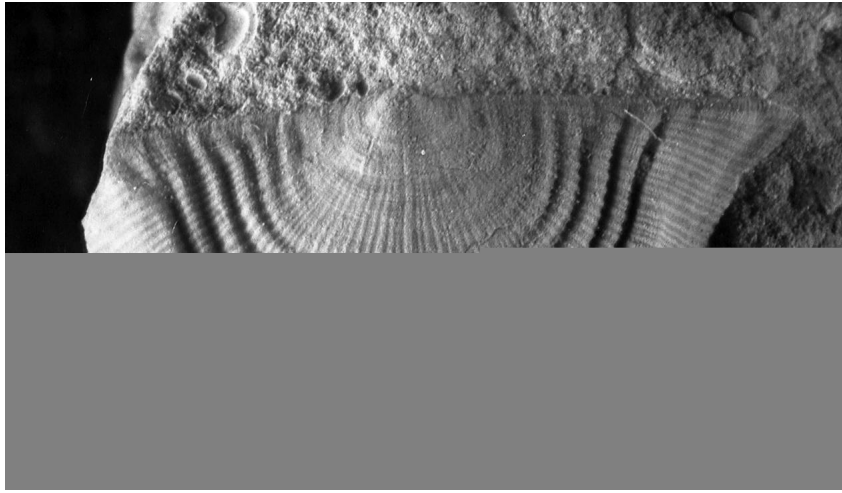
21. (1.00 pts) This specimen's generic name refers to what?

22. (1.00 pts) The above organism was one of the many animals that GABI impacted. What does GABI stand for?

23. (1.00 pts) During what geologic era did GABI happen?

24. (1.00 pts) Who first proposed GABI? Hint: He is widely considered the father of modern biogeography.

25. (1.00 pts)



Identify the specimen to the lowest taxonomic level on the rule sheet.

**26. (1.00 pts)** If this specimen is extinct, what geologic period did it go extinct?

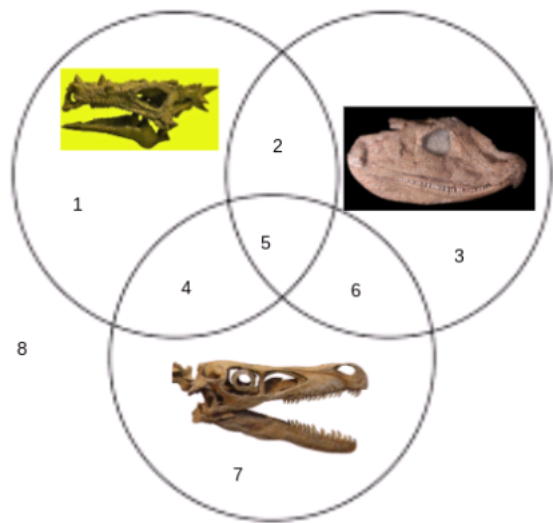
**27. (1.00 pts)** On what continent are most of the fossils of this specimen found?

- ☐ A) North America
- ☐ B) South America
- ☐ C) Europe
- ☐ D) Asia
- ☐ E) Australia
- ☐ F) Africa

**28. (4.00 pts)** What is taphonomy? In which type of lagerstatte is taphonomy usually studied? List 4 taphonomic biases in the fossil record.

**29. (3.00 pts)** Explain how Doushantuo type preservation worked. In what environment is this preservation method most common? What would this preservation type preserve?

30. (0.00 pts)



For the following questions, fill in the blank with the number that corresponds with the correct place in the Venn Diagram.

EXAMPLE: Which of these is a Monkey? \_\_\_\_\_

You would put in 8 because none of these are a monkey.

Please respond with ONLY THE NUMBER. No extra characters please. Please do not write anything in the "answer" portion of this question. You might be penalized if you do.

31. (1.00 pts) Which of these is an Eryops? \_\_\_\_\_

32. (1.00 pts) Which of these was found in the Hell Creek formation? \_\_\_\_\_

33. (1.00 pts) Went extinct in the late cretaceous. \_\_\_\_\_

34. (1.00 pts) Hadrosaurid. \_\_\_\_\_



35. (1.00 pts) Within Class Reptilia. \_\_\_\_\_

36. (1.00 pts) Wastebasket taxon. \_\_\_\_\_

37. (1.00 pts) Known to be cold blooded. \_\_\_\_\_

38. (1.00 pts) Possessed 8 digits on each appendage. \_\_\_\_\_

39. (1.00 pts) What is as dubiofossil?

40. (2.00 pts)



Is the above image a pseudofossil? If it's on the rule sheet, identify it please.

41. (1.00 pts)



Identify the above specimen.

**42. (1.00 pts)** Name the 2 continents where this specimen is most commonly found

**43. (1.00 pts)** The root word for this specimen is derived from what civilization?

**44. (1.00 pts)** What is this specimen known for smelling like?

**45. (1.00 pts)**



How was this specimen fossilized?

**46. (1.00 pts)** Identify this fossil to the lowest taxonomic level on the rule sheet if it is on the taxonomic rule sheet.

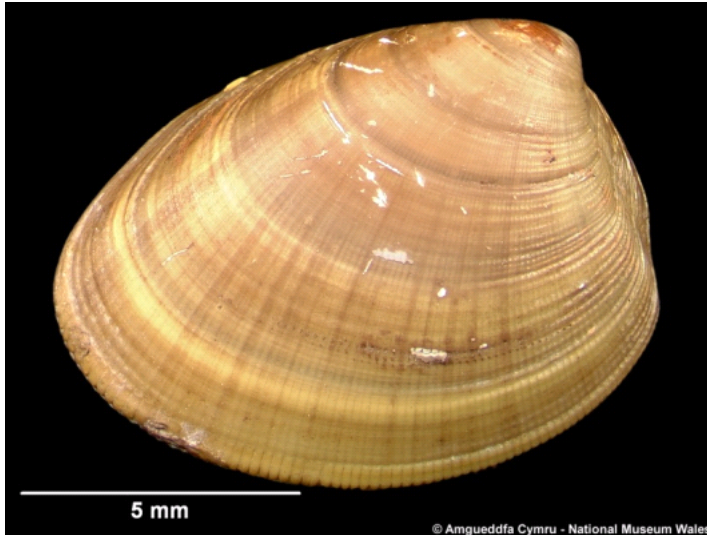
**47. (1.00 pts)**



How was this preserved?

**48. (6.00 pts)**

Name one other name for the term "Resurrection Biology". Name 2 theorized methods of resurrection biology. Name 2 of the 6 most common species brought up for resurrection biology. Name the one animal that survived the process of Resurrection Biology past birth.

**49. (1.00 pts)**

Identify the following specimen to the lowest level on the taxonomic rule sheet if it is on the rule sheet.

**50. (1.00 pts)** The above specimen existed in the Arenigian age, which is in the \_\_\_\_ period?

**51. (1.00 pts)** The maximum depth this specimen could live at was about how many meters deep?

**52. (1.00 pts)** Anoxic ocean conditions were thought to have caused mass extinctions in which 2 geologic eras?

**53. (2.00 pts)** During oceanic anoxic events, there are usually more fossils found in oceanic environments. Why is this?

**54. (2.00 pts)** What is a van der Hammen cycle?

**55. (1.00 pts)** About how long did Romer's Gap last?

**56. (1.00 pts)**



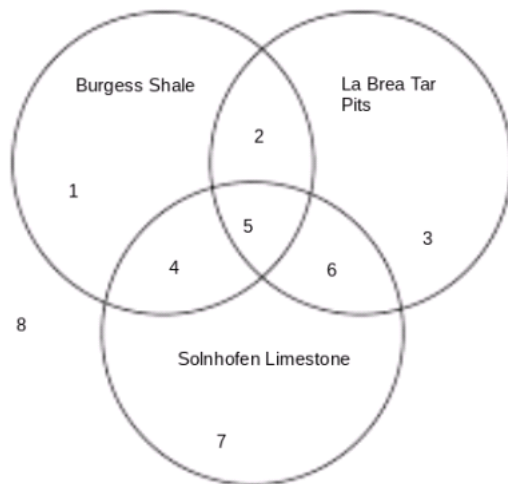
Identify the above specimen to the lowest taxonomic level on the rule sheet if it is on the rule sheet. If it is not on the rule sheet, please answer "Not on List"

**57. (1.00 pts)** This specimen is known to grow quite fast. About how many feet per year did this specimen grow?

58. (3.00 pts) What role did this organism have in paving the way for modern day forests? Be specific.

59. (2.00 pts) What is dendrochronology?

60. (0.00 pts)



For the following questions, fill in the blank with the number that corresponds with the correct place on the Venn Diagram.

EXAMPLE: Which of these is a Monkey? \_\_\_\_\_

You would fill in 8 because none of these are a monkey.

Please respond with ONLY THE NUMBER. No extra characters please. Please do not write anything in the "answer" portion of this question. You might be penalized if you do.

61. (1.00 pts) Konservat Lagerstätte \_\_\_\_\_

62. (1.00 pts) Konzentrat Lagerstätte \_\_\_\_\_

63. (1.00 pts) Likely formed due to brine seeping \_\_\_\_\_

64. (1.00 pts) Located within the United States \_\_\_\_\_

65. (1.00 pts) Known for having lots of tracks and burrows in it \_\_\_\_\_

66. (1.00 pts) Known to preserve dragonflies \_\_\_\_\_

67. (2.00 pts) What 2 characteristics are most commonly associated with oceanic anoxic events?

68. (2.00 pts) Anoxic ocean conditions during the \_\_\_\_\_ period are thought to be the source of creation of much of the world's natural gas and petroleum reserves.

69. (1.00 pts)



Identify this specimen to the lowest taxonomic level on the rule sheet.

70. (1.00 pts) This specimen has a \_\_\_\_ hypostome (I'm looking for the type of hypostome).

71. (1.00 pts) This specimen was authored in the year \_\_\_\_.

72. (1.00 pts)



Identify the specimen to the lowest taxonomic level on the rule sheet.



73. (1.00 pts) Which of the following about this specimen is false?

- ☐ A) Has a pedicle.
- ☐ B) Biconvex.
- ☐ C) Strophic.
- ☐ D) Likely an evolutionary predecessor to *Atrypa*.
- ☐ E) Classified in 1949.
- ☐ F) Commisure is a zig-zag shape.

74. (1.00 pts)

I am in the phylum Mollusca. I average 65 millimeters in diameter (yes I am roughly circular). I went extinct in the Toarcian. I am a major index fossil for my geologic time period.

What genus am I?

75. (1.00 pts) I am also theorized to have died shortly after spawning. What evidence do scientists have to support this theory?

76. (1.00 pts) I am an armored dinosaur that existed at the very end of the cretaceous period for only about 2 million years.

What genus am I?

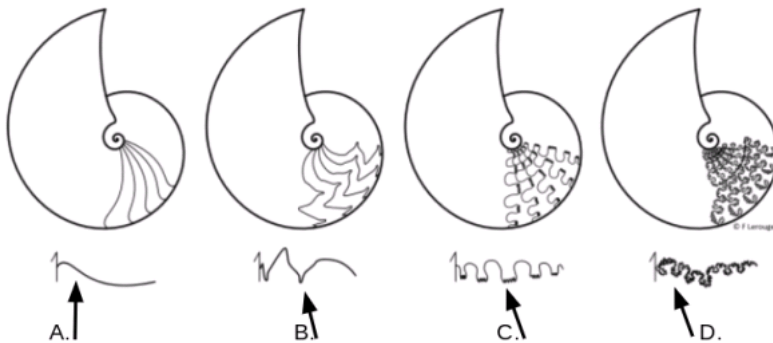
77. (1.00 pts) What is the mode of life of this organism? (i.e Benthic Filter Feeder)

78. (1.00 pts) I am a seed bearing shrub/small tree. "Tongue Leaf". I reached a maximum height of about 30 meters tall.

What genus am I?

79. (1.00 pts) Fossils of this genus were used as evidence to support the existence of what supercontinent?

80. (4.00 pts)



Please identify the cephalopod sutures. In your answer please use the format below (or you risk not being scored):

A: [Answer]

B: [Answer]

C: [Answer]

D: [Answer]

81. (1.00 pts) The Silurian and Devonian periods were commonly regarded as the age of the \_\_\_\_\_.

82. (1.00 pts)



What trace fossil is this?

83. (1.00 pts) What ichnogenera does this fall into?

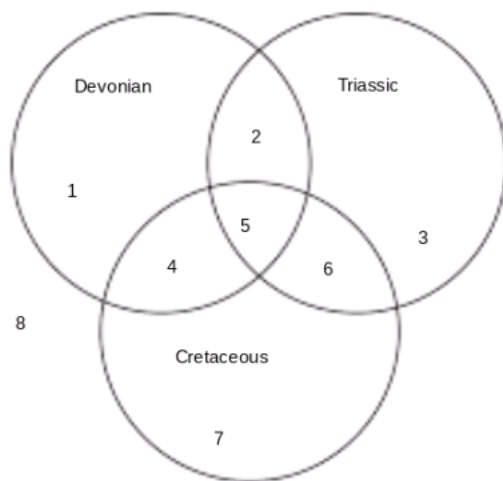
84. (1.00 pts)



What type of trace fossil is this?

85. (3.00 pts) Thoroughly explain why and how volcanic ash deposits are frequently used for absolute and relative dating.

86. (0.00 pts)



For the following questions, fill in the blank with the number that corresponds with what you see above.

EXAMPLE: Which of these is a Monkey? \_\_\_\_\_

You would fill in 8 because none of these are a monkey.

Please respond with ONLY THE NUMBER. No extra characters please. Please do not write anything in the "answer" portion of this question. You might be penalized if you do.

87. (1.00 pts) Age of the Reptiles. \_\_\_\_\_

88. (1.00 pts) Ended with a mass extinction. \_\_\_\_\_

89. (1.00 pts) Mean average atmospheric oxygen content was less than that of the modern earth. \_\_\_\_\_

90. (1.00 pts) Warmer on average than the current Earth. \_\_\_\_\_

91. (1.00 pts) Euramerica existed at the beginning of the geological period. \_\_\_\_\_

92. (1.00 pts) Pachycephalosaurus existed in this/these period(s). \_\_\_\_\_

93. (1.00 pts) the PaleoTethys Ocean existed. \_\_\_\_\_

94. (1.00 pts) Neotethys closed. \_\_\_\_\_

95. (1.00 pts)



Identify the specimen to the lowest level on the rule sheet.

96. (1.00 pts) Of the lagerstatte on the fossils list, which lagerstatte is this specimen most likely to be found in?

97. (1.00 pts) A group of these specimens is usually called a \_\_\_\_\_.

98. (3.00 pts) List 3 reasons why the Cambrian Explosion was important to the evolution of animals.

99. (1.00 pts) About how long did the Cambrian Biota Explosion last?

100. (1.00 pts) What is meant by the term "background extinction rate"?

101. (1.00 pts) About how many times higher is the rate of extinction of the Pleistocene-Holocene extinction than that of any other major mass extinction?

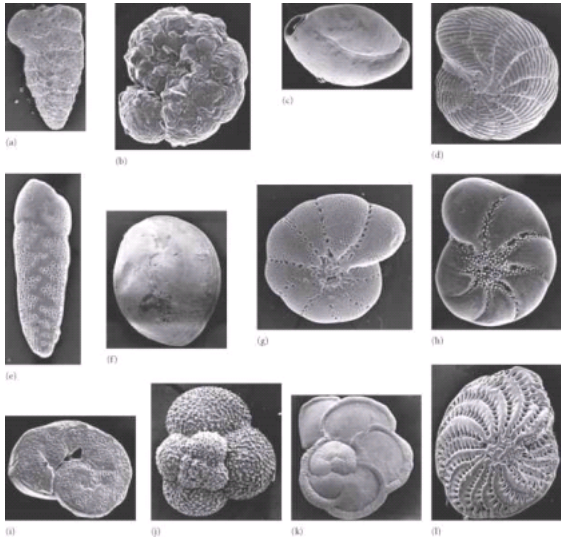
- ☐ A) 10 times
- ☐ B) 15 times
- ☐ C) 30 times
- ☐ D) 50 times
- ☐ E) 70 times
- ☐ F) 100 times

102. (2.00 pts)



Identify the fossil to the lowest level on the rule sheet. If not on the rule sheet, please indicate so using "NOT ON THE SHEET" for points.

103. (2.00 pts)



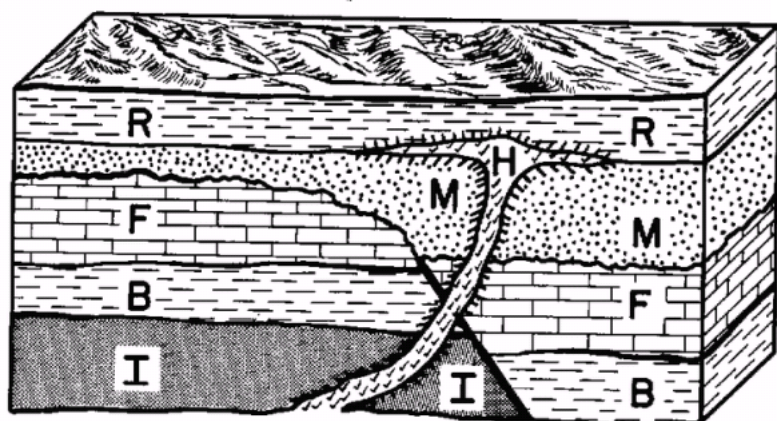
Identify the image to lowest level on the fossils list (Yes, these are all the same thing). If not on the fossils list, write "NOT ON LIST" for full credit.

104. (1.00 pts) Which rock on the fossils list is best for preserving the earliest life forms on Earth?

105. (1.00 pts) Which rock on the fossils list is the rock on the fossils list most commonly found as a constituent of petrified wood?

106. (1.00 pts) Silicification is a type of \_\_\_\_.

107. (0.00 pts)



The following questions will ask about the diagram above. The questions will be fill in the blank questions. Please respond using **ONLY THE LETTER** of the strata unless otherwise noted, or you risk losing points. **DO NOT** write anything in the "answer" portion of this question, or you risk losing points via penalty (at the ES's discretion).

**108. (1.00 pts)** Which of these layers is the oldest? \_\_\_\_\_

\_\_\_\_\_

109. (1.00 pts) Letter F is most likely \_\_\_\_\_.

\_\_\_\_\_

**110. (1.00 pts)** What igneous intrusion is H?

111. (1.00 pts) This igneous intrusion is regarded as a \_\_\_\_\_ igneous intrusion.

\_\_\_\_\_

Thanks for taking the test!

Again, if you have questions, concerns, complaints, or happy things to say, let me know via the forums (BennyTheJett) or discord (BennyTheJett1#3979).

Good luck with the rest of your events!

Also hmu with some good fossils memes. My binder cover's looking a little bland.



