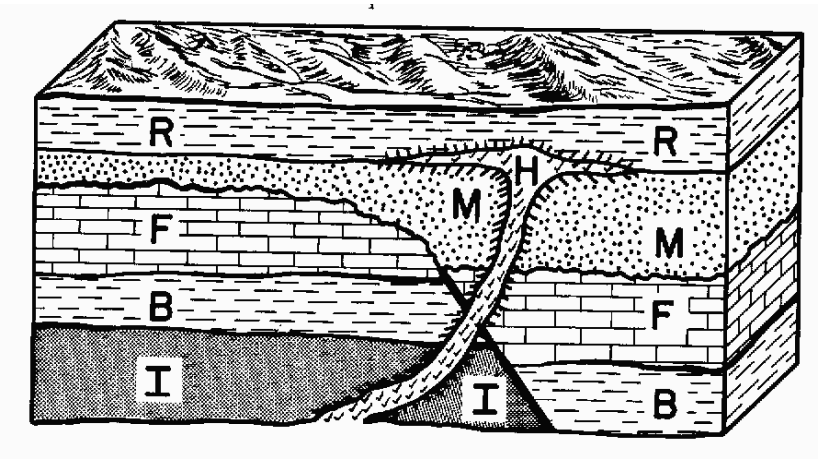
Fossils test

Created by Haverford Science Olympiad - Nov 2014

Please record all answers on a separate sheet of paper. Identification questions are 2 points, most others are 1. The test is out of 65 points. Question 6 is a tie breaker.



Layer F has been absolutely dated to 275 MYA. A Mucrospirifer fossil was found in Layer I.

1. What period is Layer F from? What period is Layer I from?
2. What is an example of absolute dating used to date Layer F or I?
3. Which layer is older, M or H? What geologic principle allows one to determine such?
4. Name a date in MYA Layer B could have been from? What geologic principle can determine such?
5. What layer is least likely to have fossils found in it? Why?
6. ****Tie Breaker**** What scientist is credited for formulating the law in question 4?

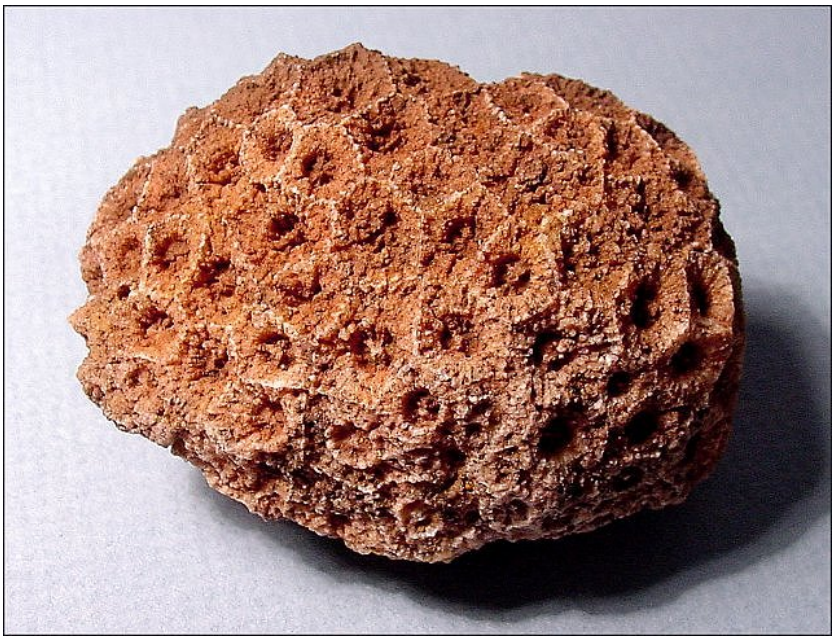
7. Identify the genus of this specimen?
8. What type of diet did this organism have?
9. When threatened, how could this organism try to protect itself?
10. This fossil is the state fossil of which state?

11. Put the following events in order, from oldest to most recent

a) Formation of Pangaea
b) Cretaceous Extinction
c) Evolution of first Tetrapods
d) Evolution of first land plants
e) Evolution of humans
f) Evolution of first mammals
g) Cambrian explosion
h) Evolution of flowering plants

12. What is the genus of this fossil?
13. What period did this fossil live in?
14. What is the notable difference between males and females of this fossil?

15. Identify the genus of the first dinosaur
16. Identify the genus of the second dinosaur
17. Both of these dinosaurs belong to the same. These dinosaurs could be described as having what type of hip because of the order they belong to?
18. Which of these two dinosaurs could have preyed on Stegosaurus?
19. What is the nickname given to the most complete specimen ever found of the first dinosaur?



20. What is the genus of this fossil?
21. What is the primary mineral composing this fossil
22. A glaciated sample of this fossil is also known as what? What state is this sample the state fossil of?

23. Identify the genus of this specimen
24. During what period did are the first fossils of plants of this specimen's phyla from?
25. How did this plant disperse its seeds?
26. Plants from this specimens genus are commonly known as what?

27. Identify the genus of the first fossil.
28. Identify the genus of the second fossil.
29. What is lowest taxon that these organisms share and what is its name?
30. The first fossil is often confused with another fossil previously identified on this test. What fossil was that? (give the genus and number of question)
31. The second fossil is often found in mass deposits called what?
32. While both of these fossils lived in marine conditions, describe how their feeding habits are different.

33. Identify the fossil in this picture
34. What type of organism created this fossil?
35. These organisms were very important in Earth's early history. Why?

Answer Key

1. Layer F is from the Permian. Layer I is from the Devonian. (2 pts)
2. Radiometric Dating, such as Potassium-Argon dating or dating Index Fossils. (1. pt)
3. Layer H is older due to the law of cross cutting relationships. (2 pts)
4. Layer B could be from the 375-275 MYA, typically in the Carboniferous. The law of superposition could determine this. (2 pts)
5. Layer M, since it is an igneous intrusion. (2 pts)
6. Nicholas Steno (Tie Breaker) (1 pt)
7. Phacops (2 pts)
8. Carnivorous (1 pt)
9. Phacops could roll into a ball (1 pt)
10. Pennsylvania (1 pt)
11. i. Cambrian Explosion (g) (1 pt)
    ii. Evolution of first land plants (d) (1 pt)
    iii. Evolution of first Tetrapods (c) (1 pt)
    iv. Formation of Pangaea (a) (1 pt)
    v. Evolution of first mammals (f) (1 pt)
    vi. Evolution of first flowering plants (h) (1 pt)
    vii. Cretaceous Extinction (b) (1 pt)
    viii. Evolution of humans (e) (1 pt)
12. Baculite (2 pts)
13. The late Cretaceous (1 pt)
14. Males were one half to one third the size of females, with significantly less ribbing (1 pt, distribute generously)
15. Tyranosaurus (2 pts)
16. Allosaurus (2 pts)
17. Lizard-hipped (1 pt)
18. Allosaurus (the second one) (1 pt)
19. Sue (1 pt)
20. Hexagonoria (2 pts)
21. Calcite (1 pt)
22. Petoskey Stone, the state fossil of Michigan (2 pts)
23. Acer (2 pts)
24. Cretaceous (1 pt)
25. Used wind to carry seeds (1 pt)
26. Maples (1 pt)
27. Orthoceras (2 pts)
28. Belemnitella (2 pts)
29. Class Cephalopoda (1 pt)
30. Baculites, question 12 (1 pt)
31. Belemnite graveyards (1 pt)

32. The first fossil is a scavenger, the second fossil is a predator (2 pt)
33. Stromatolite (2 pts)
34. Cyanobacteria (1 pt)
35. They greatly increased the amount of atmospheric oxygen present on Earth (1 pt)