SSSS 2019 FOSSILS TEST

12 stations, 20 pt per station, 88 questions in total

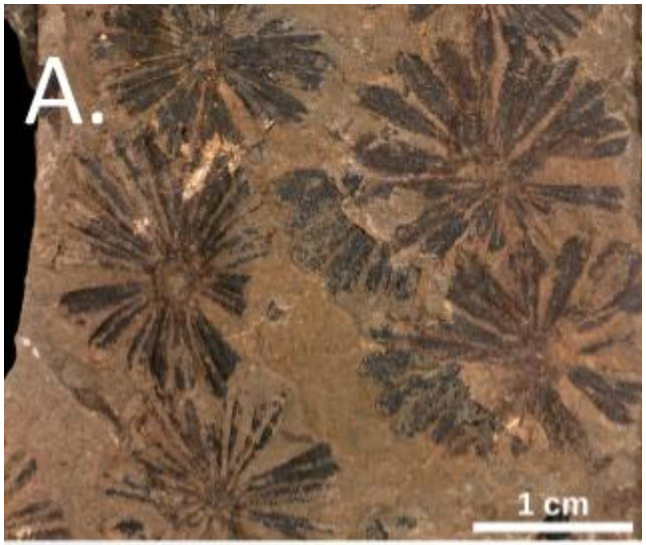
Separate multiple answers with semicolons

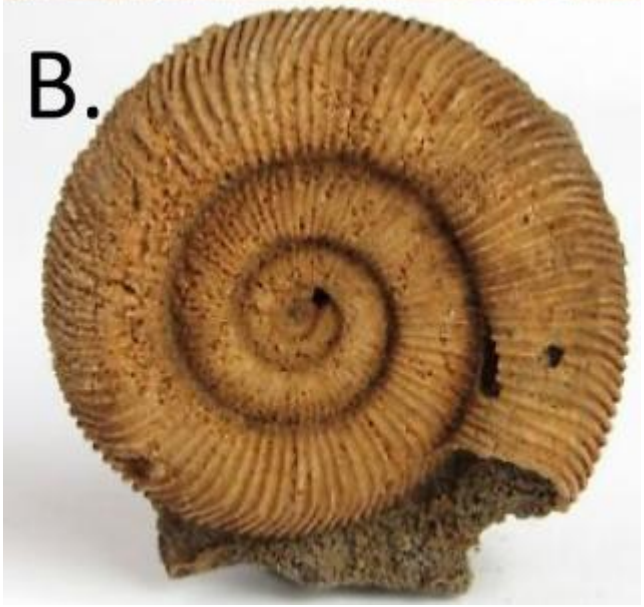
Tiebreaker Stations (in order): 02, 09, 01, 06

Score:

/240

Station 01 Name: /20





01. Identify specimens A and B and state and explain each method of preservation. (8)

02. Specimen A is from the same organism as another specimen on the fossil list. Name this taxa as well as the general type of taxa that these two taxa fall under. (2)

03. Was the organism preserved as specimen A seed-bearing or spore-bearing? (1)
04. What two periods is specimen A from? (2)

05. What class is specimen B in? What subclass? (2)

06. The subclass of specimen B has three types of suture patterns. Name them and state which type is characteristic of specimen B. (4)

07. What do mass mortalities of specimen B represent? (1)

Station 02 Name: /20

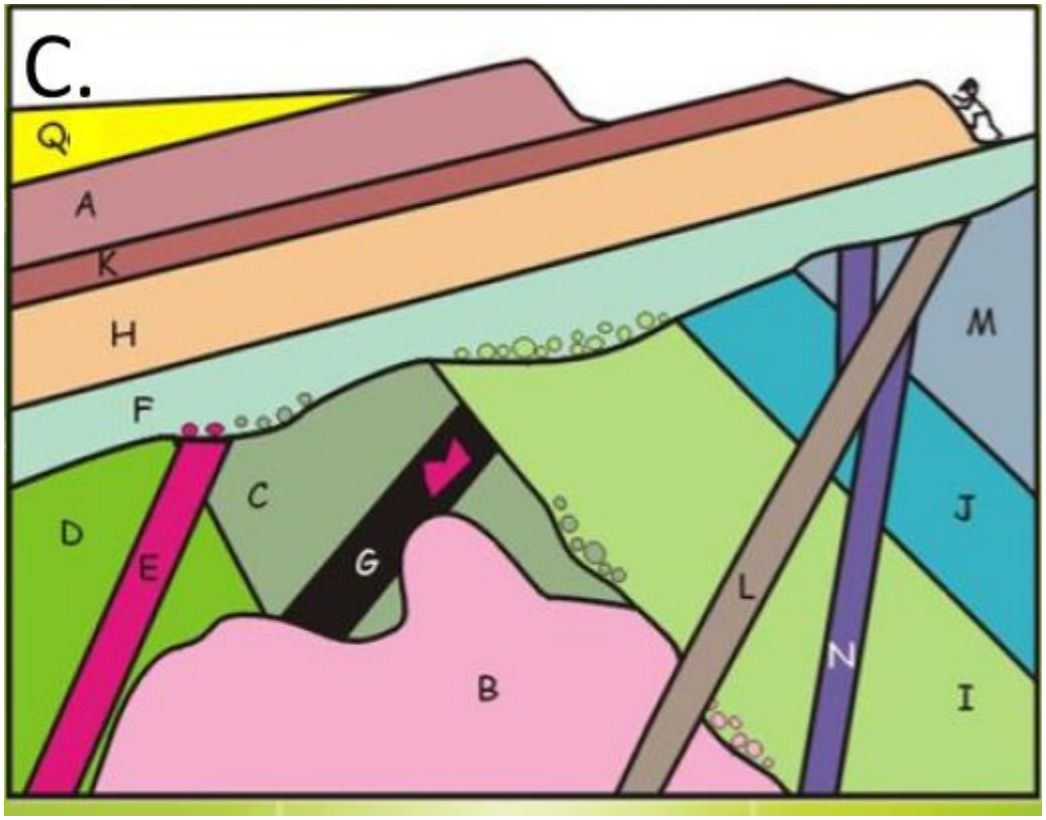
01. State the order in which each of the rock facies formed in figure C. (6)

02. State all the unconformities and where they are located in figure C. (8)

03. State the Principle of Cross-Cutting Relationships. (2)

04. What is the half-life of Potassium-40? (1)

05. If the half life of isotope X is 3.2 million years and the sample originally had 5 grams of X, how much time elapsed if now there is only 1 gram of X? (3)



Station 03 Name: /20

D.

E.

01. Identify specimens D and E. (2)

02. Was specimen D mostly terrestrial or aquatic? (1)
03. What did specimen D prey on? (2)

04. What method of feeding did specimen D use? What extant organism shares specimen D's feeding mechanism? (4)

05. What is the average length of specimen E? (1)

06. Describe how specimen E fed. (5)

07. What adaptation allowed reptiles to become dominant on land? (2)

08. What characteristics distinguish synapsids from sauropsids? (3)

Station 04 Name: /20

01. Identify specimens F and G and the kingdom that each specimen is in. (4)

02. Which specimen appeared first? (1)
03. What is the shell of specimen F called? (1)

04. What did specimen F use to feed? (2)

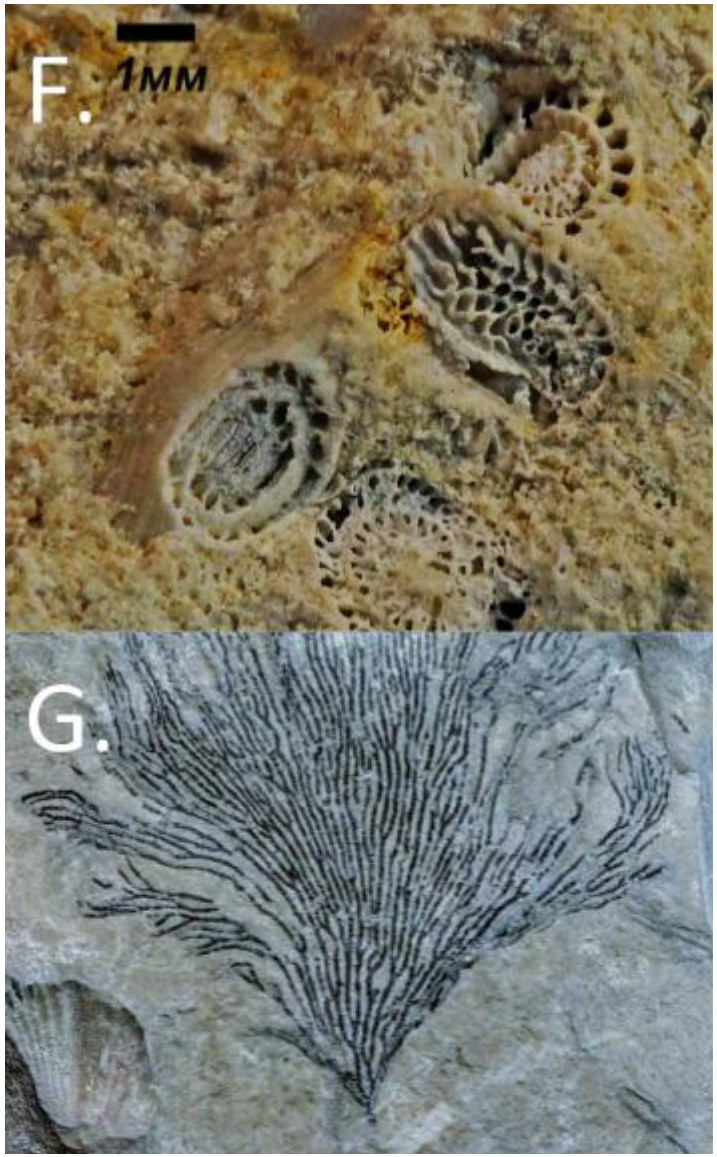
05. What type of paleoenvironment does specimen F indicate? (2)
06. How is specimen G preserved? (1)

07. Were most species of the taxon of specimen G benthic or planktonic? (2)

08. What is the founder zooid of specimen G called? What is the entire colony called? (2)

09. Why is specimen G spiral shaped? (2)

10. What is a stomochord? (3)



Station 05 Name: /20

01. Identify specimens H, I, and J and state whether they are clastic or biochemical. (6)

02. Order the specimens from highest energy environment during formation to lowest energy. (2)

03. Which specimen(s) are poorly sorted? (1)
04. What is connate fluid? (2)

05. Which specimen will most likely react with hydrochloric acid? What is this reaction called? (3)

06. What special characteristic does specimen J have? (1)

07. If a sediment has grains with diameter 0.018 mm, what is its rating on the Krumbein Phi Scale? (3) 5.8

08. Define normal grading. (2)

Station 06 Name: /20

01. Differentiate between concentration lagerstätten and conservation lagerstätten. (3)

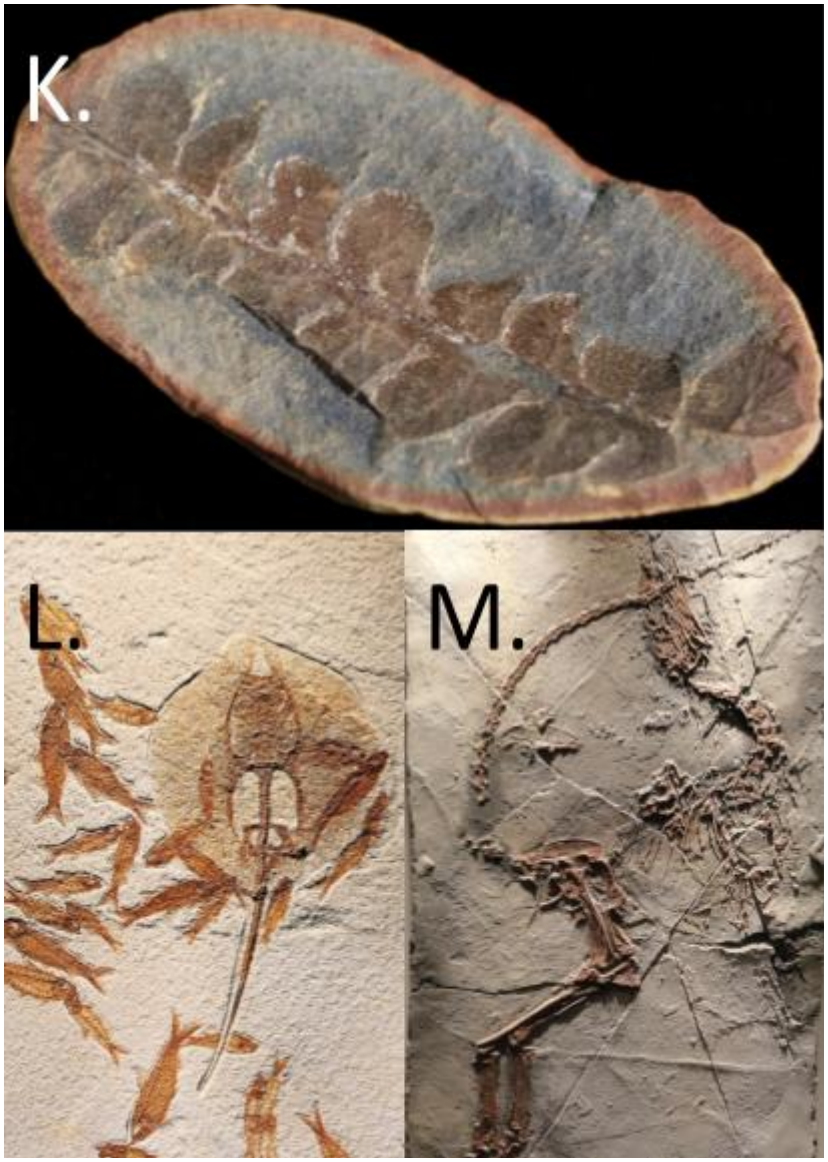
02. What conditions are needed for optimal preservation in lagerstätten? (2)

03. State which lagerstätten specimens K, L, and M are from as well as the periods in which each formed. (6)

04. What type of paleoenvironment did specimen K form in? (2)
05. What type of preservation is observed in specimen K? (2)
06. Where is the lagerstätte of specimen L located? (1)

07. How thick is the lagerstätte of specimen L? (2)

08. What type of event killed the organisms of the lagerstätte of specimen M? (2)



Station 07 Name: /20

01. Identify specimens N, O, and P and state whether the substance each specimen is composed of. (6)

02. It is hard to find shelly fossils from certain time periods in places that were deep ocean in that time period. Explain why. (3)

03. In what periods did the most recent aragonite sea start/end? (2)
04. What is the founder zooid of specimen O called? (2)

05. Define septae, thecae, and tabulae. (3)

06. Draw the different septae patterns for rugose and scleractinian corals. (4)

Station 08 Name: /20

01. Identify specimens Q, R, and S and state whether each specimen is a sauropod or theropod. (6).

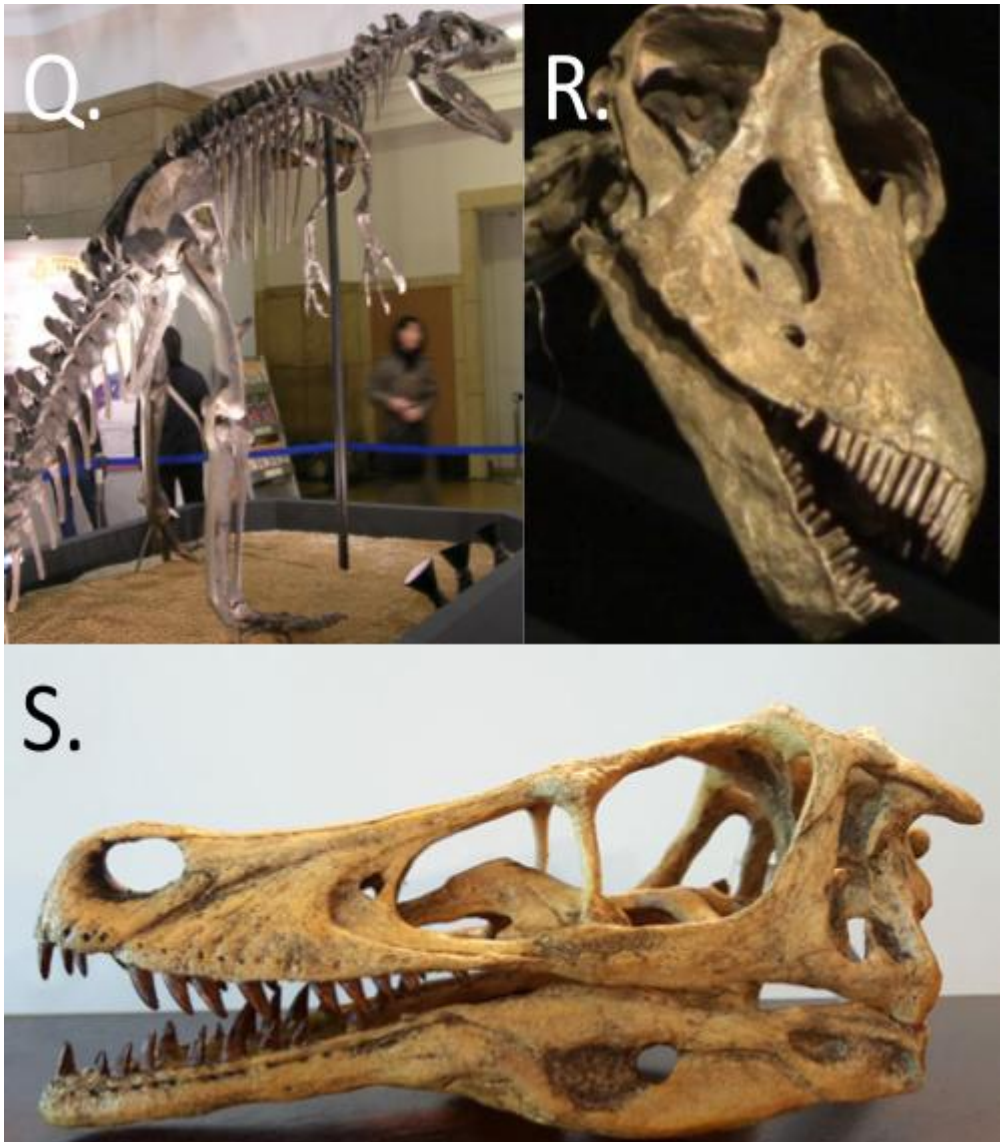
02. What order are all of these specimens in? What is the difference between this order and the other major dinosaur order? (3)

03. Which of the two major dinosaur orders gave rise to modern birds? (1)

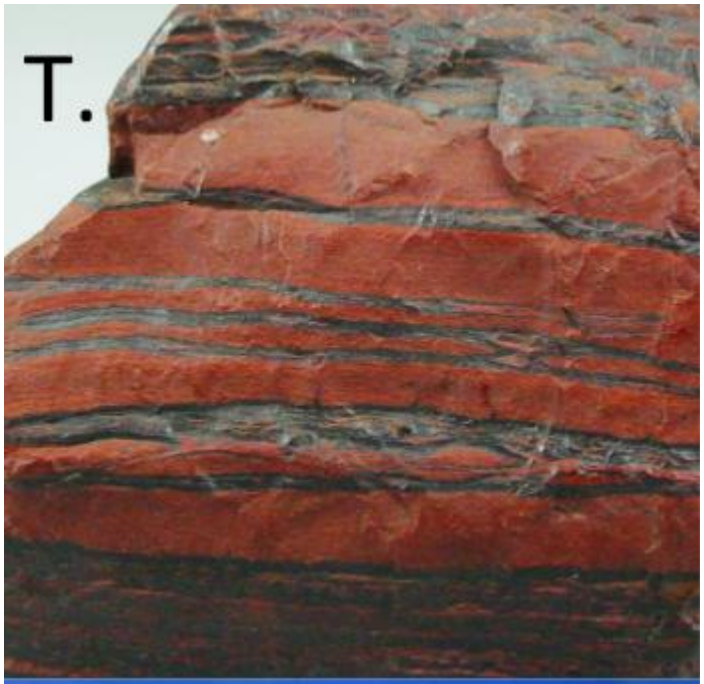
04. Was specimen Q a monophyodont or a polyphyodont? (2)
05. Which specimen(s) can be found at Morrison Formation? (2)
06. Did specimen Q prey on specimen R? If no explain why not. (2)

07. Did specimen Q prey on specimen S? If no explain why not. (2)

08. Which specimen(s) had feathers? (2)



Station 09 Name: /20



01. Identify specimens T and U and explain how each specimen formed. (10)

02. Specimen T is composed of what two minerals? (2)

03. Why was specimen U most abundant before the Cambrian period? (3)

04. An ichnite has track length 0.2 m and stride length 1.0 m. Calculate the leg length, relative stride length, dimensionless speed, and speed. (5)

Station 10 Name: /20

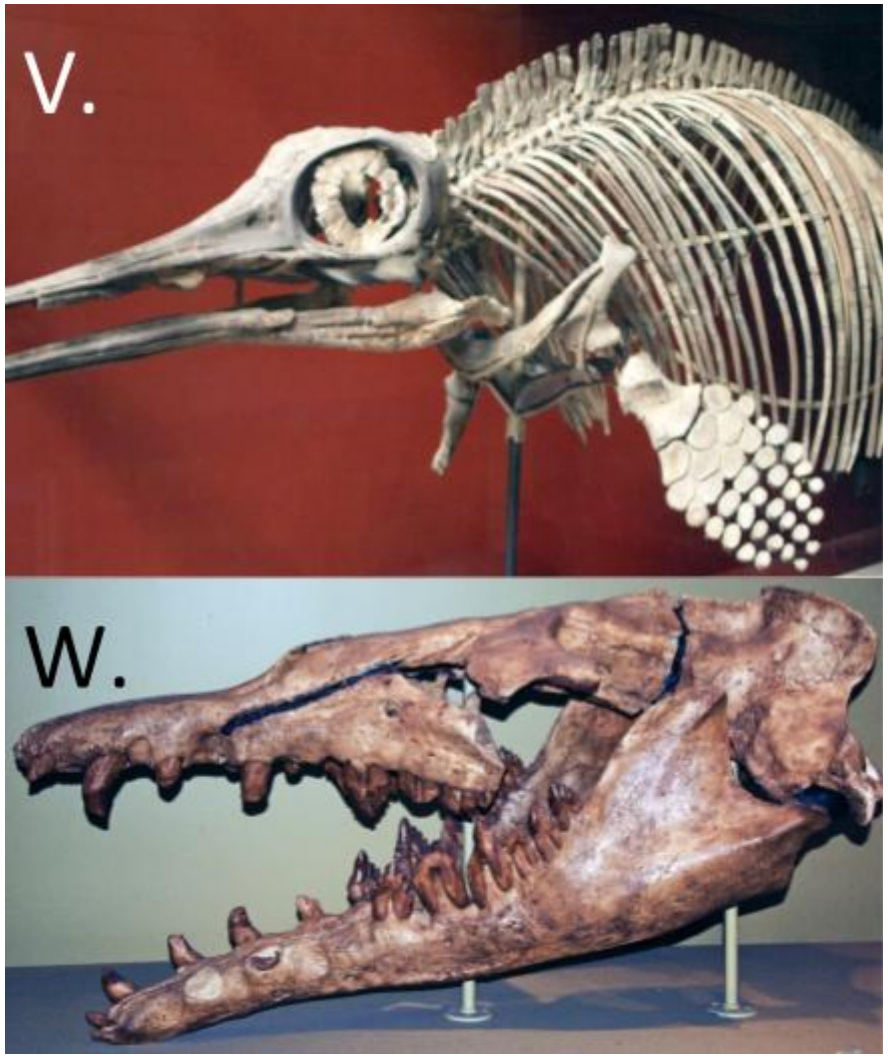
01. Identify specimens V and W. (2)

02. Which specimen(s) evolved from land animals? (2)
03. State the phylum that these two specimens are in and the anatomical features that define this phylum. (6)

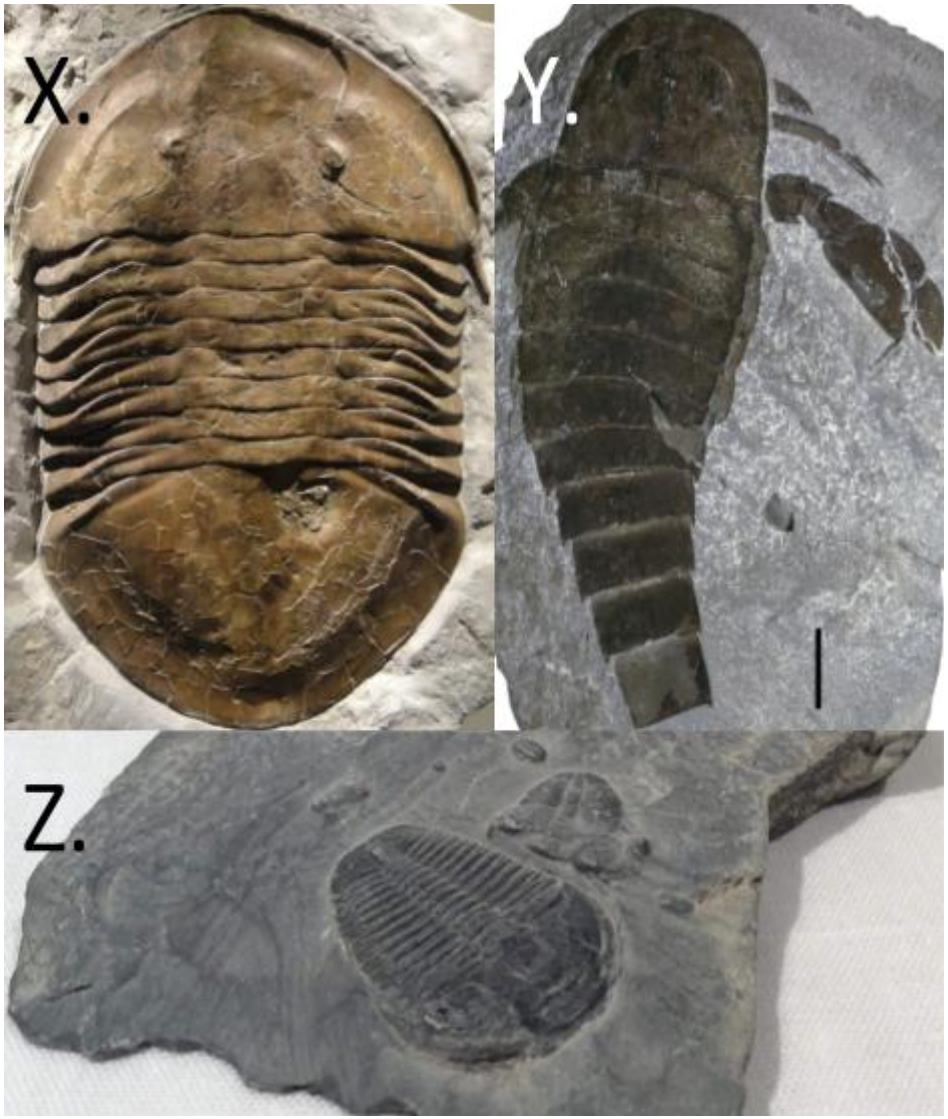
04. When did specimen V reach the peak of its diversity? (1)
05. What is the distinctive cross section shape of the vertebrae of specimen V? (1)
06. What is the structure in the eye of specimen V? What is its role? Did specimen W have that feature? (4)

07. What is a melon (referring to cetaceans)? Did specimen W have one? (3)

08. What was the bite force of specimen W in kPa? (2)



Station 11 Name: /20



01. Identify specimens X, Y, and Z and state the suture pattern (or does not apply). (6)

02. Which specimens could enroll? (2)
03. What is a hypostome? What type of hypostome did specimen X have and what is special about its hypostome? (4)

04. Name the tagmata of specimen Y. (3)

05. What extant organism is specimen Y most closely related to? (1)

06. Define gnathobase. (2)

07. How many segments did specimen Z have? (2)

Station 12 Name: /20

01. Identify specimens AA, BB, and CC. (3)

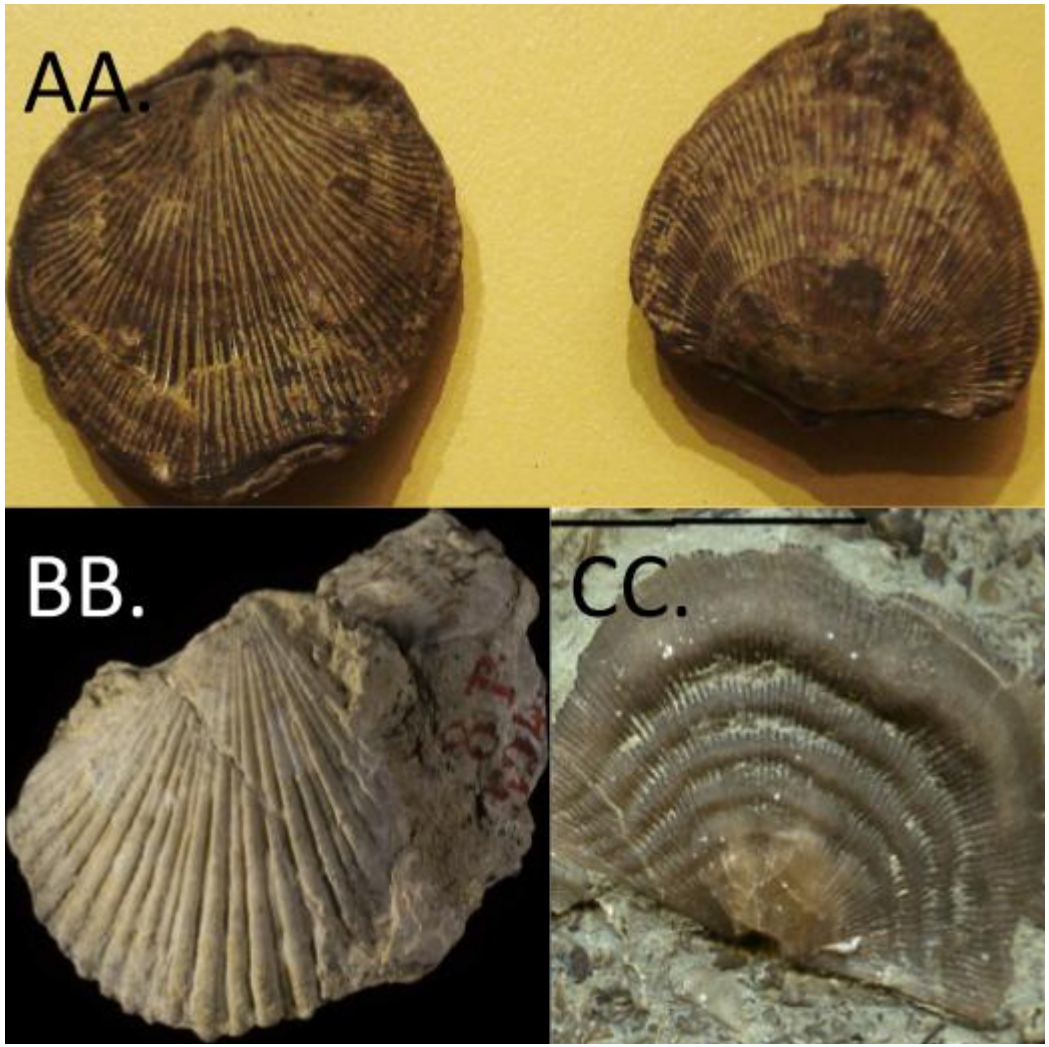
02. Which specimen had the most complex nervous system? Explain how you know. (3)

03. Which specimen(s) are biconvex? (2)

04. Which specimens are composed of aragonite? (2)
05. Is specimen AA strophic? (1)
06. Which muscles open and close the shell in specimen AA? What about specimen BB? (4)

07. What anatomical feature defines the taxon of specimen BB? (2)

08. What are the folds on specimen CC called? What is their purpose? (3)



Hope you enjoyed my test!

Rating:

/10

Additional Comments