

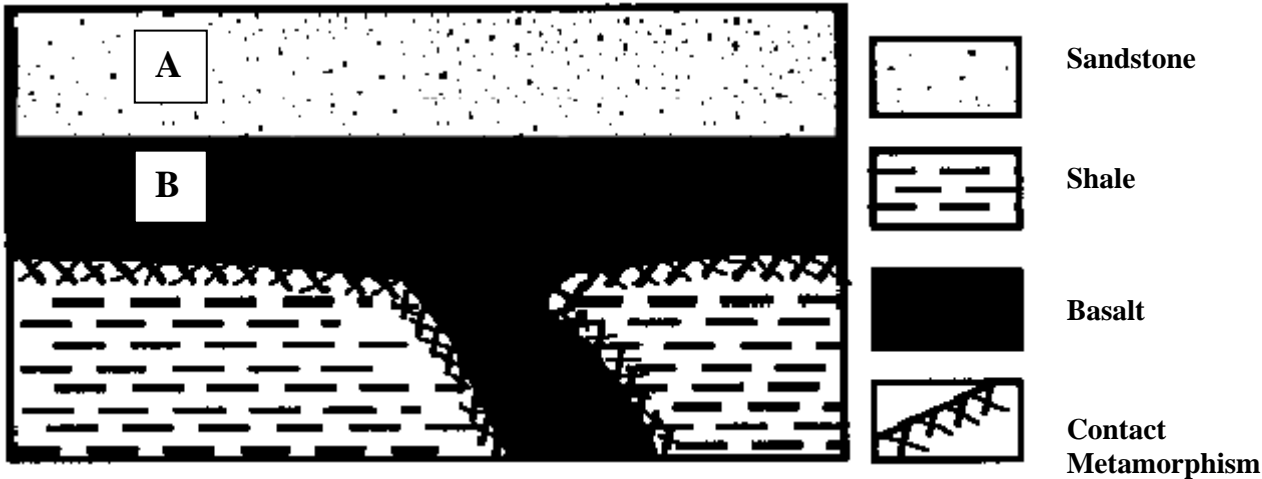
Earth Systems 3209
Worksheet – Interpreting The Rock Record

Name: _____ **Date:** _____

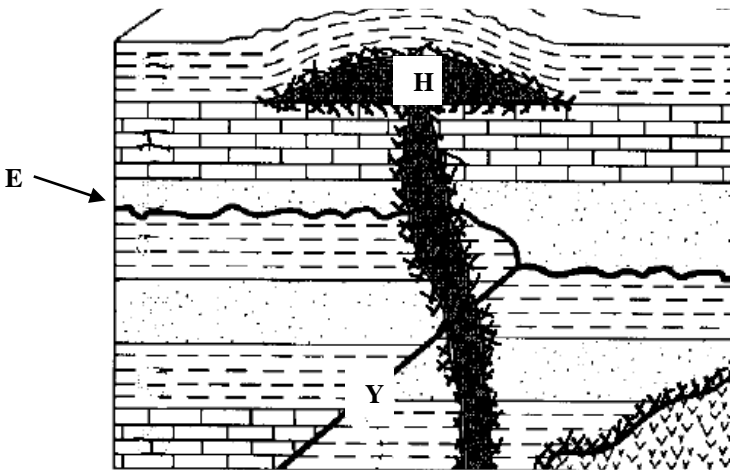
Instructions: Complete all long answer questions in the space provided below each question. Complete all multiple choice questions by simply circling the correct letter.

1. The diagram below shows a cross section through a portion of Earth’s crust. What does unit B represent?

- (A) buried lava flow
- (B) magma intrusion
- (C) oil trap
- (D) volcanic rock



Use the diagram below to answer the next two multiple choice questions.



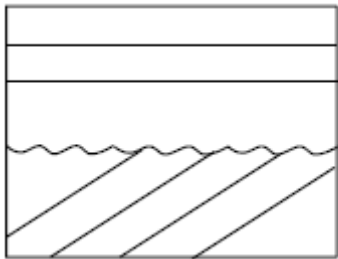
2. What geologic feature is indicated by the letter “E” in the diagram?

- (A) angular unconformity
- (B) buried lava flow
- (C) disconformity
- (D) magma intrusion

3. Which geologic principle indicates that rock unit “H” formed after fault “Y”?

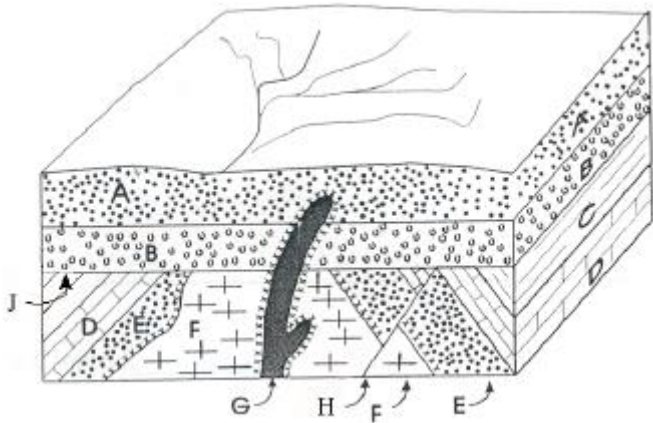
- (A) cross-cutting relationships
- (B) original horizontality
- (C) superposition
- (D) uniformitarianism

4. Which series of events produces the cross-section below?



- (A) deposition → erosion → tilting → erosion
- (B) deposition → tilting → erosion → deposition
- (C) erosion → deposition → tilting → deposition
- (D) erosion → tilting → deposition → erosion

Use the diagram below to answer the following three questions.



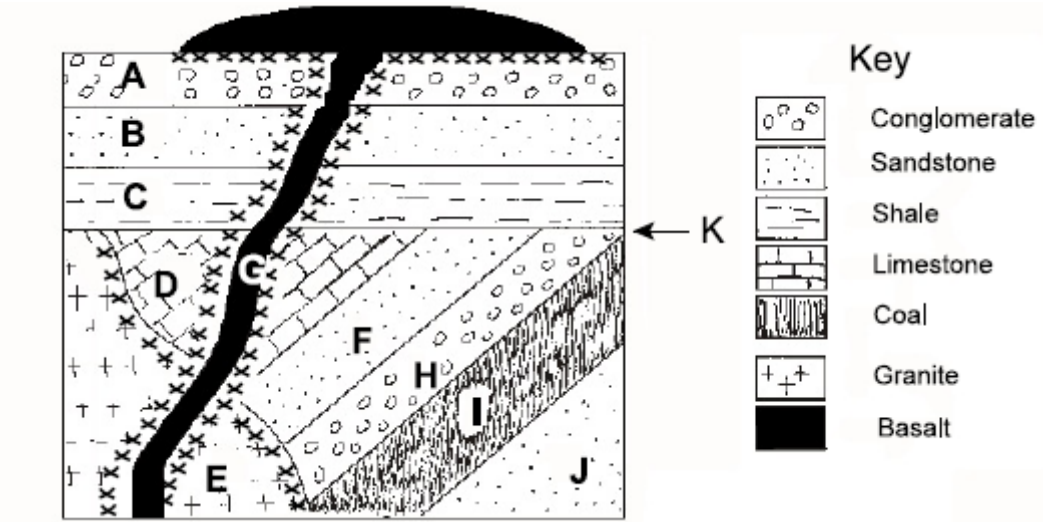
5. Arrange all letters in the diagram above in the order in which they occurred, beginning with the oldest.

____, ____, ____, ____, ____, ____, ____, ____

6. What is the feature at J? Explain how it formed.

7. What evidence indicates that the fault (H) occurred after the intrusion of unit F?

Use the diagram below to answer the following three questions.



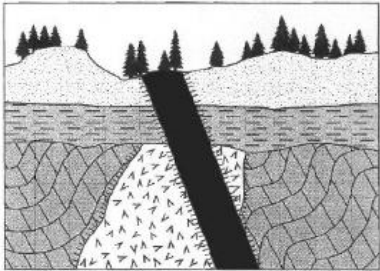
8. List the geologic events, represented by letters A to K, from oldest to youngest.

_____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____

9. Which type of unconformity is represented by K? _____

10. Explain how you know which letter identifies the oldest igneous rock unit.

11. Interpret the geological history of this area by arranging the letters of the sequence of events in order from oldest to youngest.



Key to Rock Symbols

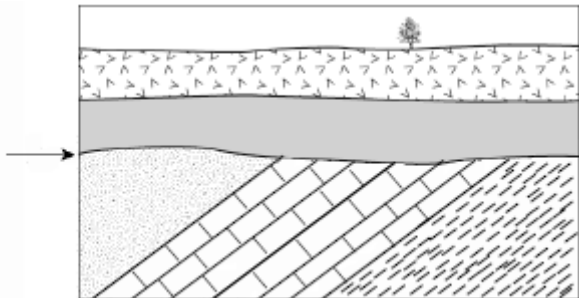
Sandstone	Folded Limestone	Granite
Basalt	Shale	Contact Metamorphism

Youngest	
E	

A	Deposition of Shale
B	Folding of pre-existing Limestone
C	Intrusion of Granite
D	Deposition of Limestone
E	Erosion of present day surface
F	Intrusion of Basalt
G	Deposition of Sandstone

Oldest

12. Which geologic structure is indicated by the arrow below?



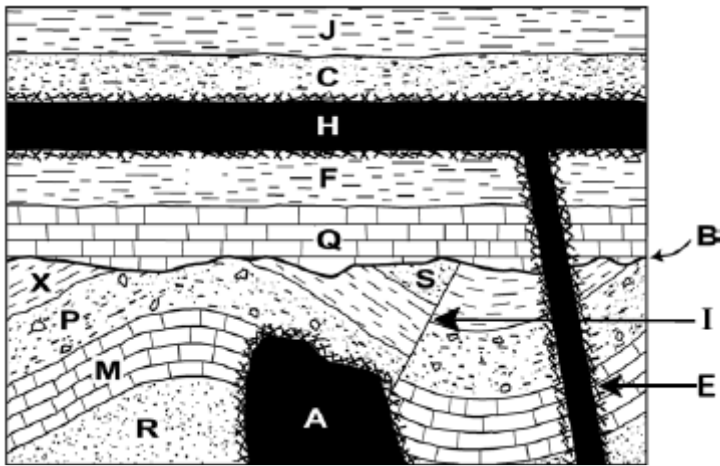
(A) angular unconformity

(B) conformity

(C) disconformity

(D) nonconformity

Use the diagram below to answer the following three questions.



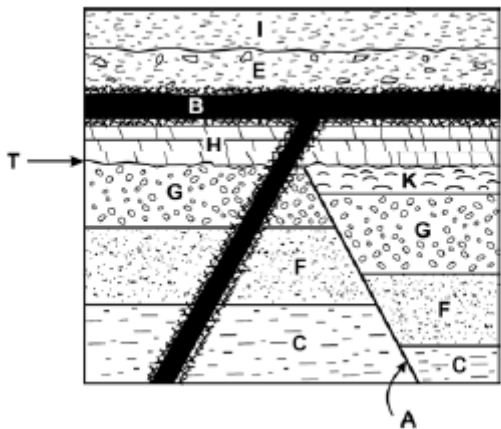
13. Arrange the letters in the order they occur, beginning with the oldest event and ending with the youngest event.

____, ____, ____, ____, ____, ____, ____, ____, ____, ____, ____, ____, ____

14. What evidence is provided to indicate that H is **NOT** a buried lava flow?

15. What is represented by the letter B? How do you know?

Use the diagram below to answer the following two questions.

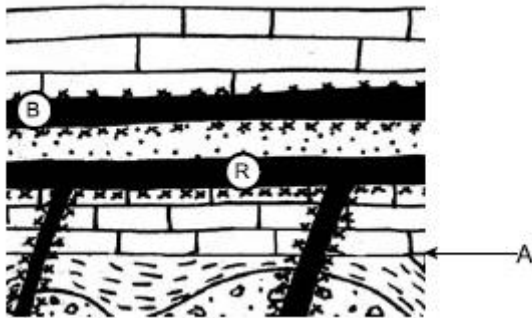


16. Is layer B extrusive or intrusive? Explain your answer.

17. Arrange the letters in the order they occur beginning with the oldest and ending with the youngest.

____, ____, ____, ____, ____, ____, ____, ____, ____, ____, ____

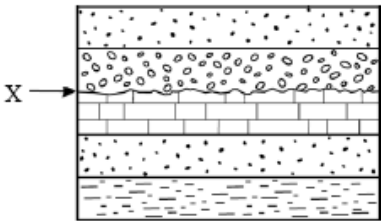
Use the diagram below to answer the following two questions.



18. What feature is indicated by A and what process formed it?

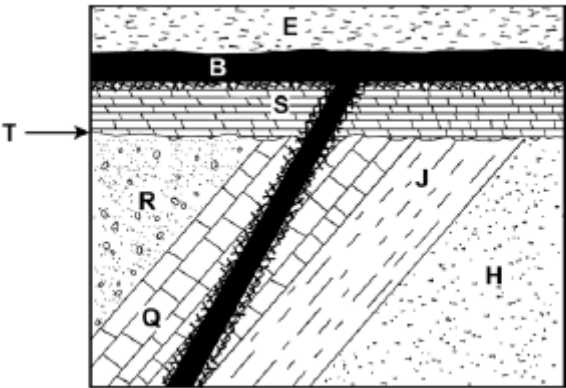
19. Units R and B are basaltic in composition. Describe the difference between the formation of each unit.

20. What is indicated by X in the diagram below?



- (A) angular unconformity
- (B) disconformity
- (C) fault line
- (D) nonconformity

Use the diagram below to answer the following three questions.



21. List the geologic events, represented by letters in the diagram above, in the order they occurred from oldest to youngest.

____, ____, ____, ____, ____, ____, ____, ____

22. What does T indicate in the diagram above and explain the process by which this feature formed.

23. Why is there no contact metamorphism between B and E?