Name: _____

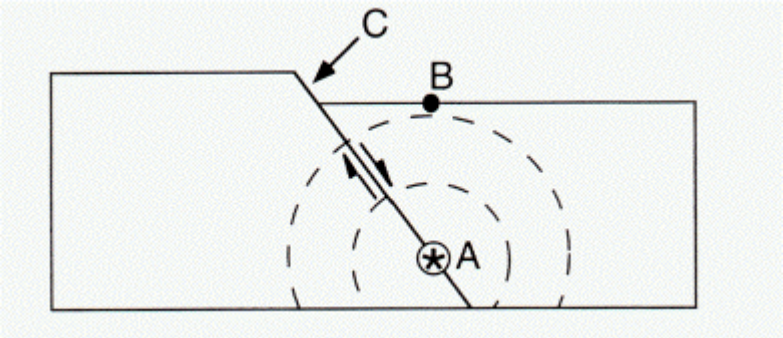
Assignment #5-7: Geology

1. "Geological processes operating at the present time are the same processes that have operated in the past" is a statement of:
   A. the Principle of Cross-cutting Relationships
   B. the Principle of Original Horizontality
   C. the Principle of Uniformitarianism
   D. the Principle of Faunal Succession
2. If rock A cross-cuts rock B, then rock A is:
   A. older than rock B
   B. younger than rock B
   C. the same age as rock B
   D. on top of rock B
3. Which of the following is a method of correlation?
   A. physical continuity
   B. similarity of rock types
   C. similar fossil assemblages
   D. all of these can be used for correlation
4. Eras of the Standard Geologic Time Scale are subdivided into:
   A. Eons
   B. Epochs
   C. Ages
   D. None of these
5. Which subdivision of geologic time is the longest?
   A. Precambrian
   B. Mesozoic Era
   C. Teritiary Period
   D. Miocene Epoch
6. Which is a useful radioactive decay scheme?
   A. U-238/Pb206
   B. U-235/Pb-207
   C. K-40/Ar-40
   D. all of these
7. Radiocarbon dating is a useful technique for all samples below except:
   A. wood
   B. bone
   C. shells
   D. granite
8. Radon is a gas derived from the natural radioactive decay of:
   A. Uranium
   B. Lead
   C. Potassium
   D. Plutonium

9. Concentrations of radon are highest in areas where the bedrock is:
    A. sandstone
    B. basalt
    C. phyllite
    D. black shale
10. Which of the following is not a type of unconformity?
    A. nonconformity
    B. disconformity
    C. uniformity
    D. angular unconformity
11. A geologist could use the Principle of Inclusions to determine the relative age of:
    A. fossils
    B. metamorphism
    C. anticlines
    D. shale layers
12. A contact between parallel sedimentary rock layers that records missing geologic time is:
    A. a disconformity
    B. an angular unconformity
    C. a uniformity
    D. a nonconformity
13. The oldest abundant fossils of multicellular life forms are observed in rocks from:
    A. the Archean Eon
    B. The Mesozoic Era
    C. The Cambrian Period
    D. The Paleocene Epoch
14. Geologists are reasonably convinced that Earth is:
    A. 4,500,000,000,000 yrs. old
    B. 4,500,000,000 yrs. old
    C. 450,000,000 yrs. old
    D. 45,000,000 yrs.old
15. Undisturbed sedimentary rock layers occur in horizontal layers. This is a statement of:
    A. The Principle of Superposition
    B. The Principle of Cross-Cutting Relationships
    C. The Principle of Original Horizontality
    D. The Principle of Faunal Succession
16. Which of the following will affect the half-life of a radioactive element?
    A. extreme pressure deep in the Earth
    B. extreme heat deep within the Earth
    C. bombardment of Earth by cosmic rays
    D. the half-life of a radioactive element is invariant
17. The Principle of Original Horizontality states that sedimentary rocks are generally deposited as horizontal layers.
    A. TRUE
    B. FALSE

18. Metamorphic processes invalidate radiometric dating methods.
    A. TRUE
    B. FALSE
19. Angluar unconformities represent gaps in the geologic record of an area.
    A. TRUE
    B. FALSE
20. Fossils have proven to be useful as relative dating tools.
    A. TRUE
    B. FALSE
21. The point within the Earth where seismic waves originate is:
    A. the epicenter.
    B. the fault scarp.
    C. the origin.
    D. the focus.
22. P-waves are:
    A. transverse surface waves.
    B. compressional body waves.
    C. tensional surface waves.
    D. shearing body waves.
23. The fastest seismic waves are:
    A. P-waves
    B. S-waves
    C. Surface Waves
24. The first seismic waves to arrive at a seismic station are:
    A. P-waves
    B. S-waves
    C. Surface waves
25. Which of the following describes the build up and release of stress during an earthquake?
    A. the Modified Mercalli Scale
    B. the elastic rebound theory
    C. the principle of superposition
    D. the travel time difference
26. The amount of ground displacement in a earthquake is called the _____ .
    A. epicenter
    B. dip
    C. slip
    D. focus
27. Which of the following sequences correctly lists the different arrivals from first to last?
    A. P waves ... S waves .... Surface waves
    B. Surface waves ... P waves .... S waves
    C. P waves ... Surface waves ... S waves
    D. S waves ... P waves .... Surface waves

28. How do rock particles move during the passage of a P wave through the rock?
    A. back and forth parallel to the direction of wave travel
    B. back and forth perpendicular to the direction of wave travel
    C. in a rolling circular motion
    D. the particles do not move
29. If only density increases with increasing depth within the Earth, the velocity of a P wave should _____ .
    A. stay the same
    B. increase
    C. decrease
30. If a P wave were to go from a solid to a liquid - what would happen to its velocity?
    A. stay the same
    B. increase
    C. decrease to 0.0
    D. decrease
31. If an S wave were to go from a solid to a liquid - what would happen to its velocity?
    A. stay the same
    B. increase
    C. decrease to 0.0
    D. decrease
32. Which boundary marks a change from 100% solid to 100% liquid?
    A. mantle ... outer core
    B. lithosphere ... asthenosphere
    C. crust ... mantle
    D. none of these
33. Body waves consist of the:
    A. P waves only
    B. S waves only
    C. P and S waves
    D. Surface waves
34. With increasing travel time the difference in arrival times between the P and the S waves _____
    A. increases
    B. decreases
    C. stays constant
    D. none of the above
35. Where is the focus with respect to the epicenter:
    A. directly below the epicenter
    B. directly above the epicenter
    C. in the P wave shadow zone
    D. in the S wave shadow zone



36. Point A, where slip initiated during the earthquake, is called the _____.
    A. dip
    B. epicenter
    C. focus
    D. scarp
37. Point B is called the earthquake _____.
    A. dip
    B. epicenter
    C. focus
    D. scarp
38. Point C is called the _____
    A. epicenter
    B. fault scarp
    C. seismic wave
    D. dip of the earthquake
39. What type of faulting is illustrated in this diagram?
    A. normal
    B. reverse
    C. thrust
    D. abnormal
40. What is the instrumental record of an earthquake?
    A. A Seismograph
    B. A seismic section
    C. A seismogram
    D. A seismic record
41. What moves to the left in a left-lateral fault?
    A. The first arrival
    B. The far side of the fault
    C. The near side of the fault
    D. The hypocenter
42. What is the small tick on a strike-and-dip symbol?
    A. Degree of dip
    B. Direction of dip
    C. Direction of strike
    D. Perpendicular strike

43. A downdropped block of the crust, bounded by normal faults on each side, is a
    A. horst
    B. normal block
    C. graben
    D. syncline
    E. anticline
44. In a syncline, the oldest rocks will be found:
    A. on the limbs of the fold.
    B. near the axis of the fold.
    C. at the bottom of the fold
    D. none of these.
45. In an plunging anticline, the fold axis plunges:
    A. very steeply.
    B. toward the flanks of the fold.
    C. toward the youngest rocks.
    D. none of these.
46. A structural basin is a special case of:
    A. a dome.
    B. a syncline.
    C. an anticline
    D. a freak of nature.
47. A fault is observed where the hanging wall is displaced upward relative to the footwall.
    A. This is a normal fault.
    B. This is a reverse fault.
    C. This is a left-lateral strike-slip fault.
    D. This is a right-lateral strike-slip fault.
48. In a syncline, the youngest rocks are on the limbs of the structure.
    A. TRUE
    B. FALSE
49. In a syncline, all rock layers dip toward the fold axis.
    A. TRUE
    B. FALSE
50. In a plunging syncline, the structure opens in the direction of plunge.
    A. TRUE
    B. FALSE