

Review Questions for Final Exam – ONLY Chapters 7, 8, 17, 18

REFER TO OTHER POSTED REVIEWS FOR OTHER CHAPTERS

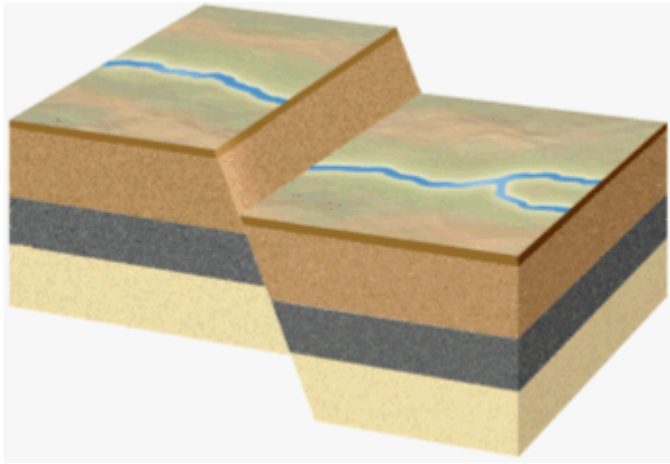
1. The line formed by the intersection of an inclined sedimentary layer and a horizontal plane is called the _____.
 - A) bed
 - B) dip
 - C) fold axis
 - D) strike

2. The dip of a unit represents the _____.
 - A) angle at which the bed inclines from the horizontal
 - B) direction of intersection of the rock layer and a horizontal surface
 - C) part of the unit that has been eroded
 - D) tilt of the rock unit before deformation

3. Which of the following types of tectonic forces tends to squeeze and shorten a rock body?
 - A) compressive forces
 - B) tensional forces
 - C) shearing forces
 - D) all of the above

4. Which of the following types of tectonic forces tends to push two sides of a body in opposite directions so that they slide horizontally past one another?
 - A) compressive forces
 - B) tensional forces
 - C) shearing forces
 - D) torsional forces

5. What type of fault is depicted in the cross section below?



- A) left-lateral strike-slip fault
- B) reverse fault
- C) normal fault
- D) right-lateral strike-slip fault

6. Which of the following statements best describes the behavior of rocks during deformation?

- A) Brittle materials deform by faulting, whereas ductile materials deform by folding.
- B) Brittle materials deform by folding, whereas ductile materials deform by faulting.
- C) Both brittle and ductile materials deform by faulting.
- D) Both brittle and ductile materials deform by folding.

7. What types of forces dominate at convergent plate margins?

- A) compressive forces
- B) tensional forces
- C) shearing forces
- D) torsional forces

8. The San Andreas fault is a result of what type of forces?

- A) compressive forces
- B) tensional forces
- C) shearing forces
- D) all of the above

9. Confining pressure is pressure applied _____.
- A) along a diagonal plane
 - B) along a vertical plane
 - C) along a horizontal plane
 - D) in all directions
10. What determines whether a rock deforms in a brittle fashion versus a ductile fashion?
- A) temperature
 - B) rock type
 - C) rate of deformation
 - D) all of the above
11. If a basalt unit near the surface of the Earth underwent compressive deformation, the result would most likely be _____.
- A) folding
 - B) folding followed by faulting
 - C) faulting
 - D) faulting followed by folding
12. A sample of marble has deformed brittly during a laboratory experiment. If we wish our next sample of marble to deform plastically rather than brittly, we should conduct the next experiment at _____.
- A) lower temperature and lower confining pressure
 - B) lower temperature and higher confining pressure
 - C) higher temperature and lower confining pressure
 - D) higher temperature and higher confining pressure
13. What is the scientific term for a crack along which no appreciable movement has occurred?
- A) axis
 - B) fault
 - C) fold
 - D) joint

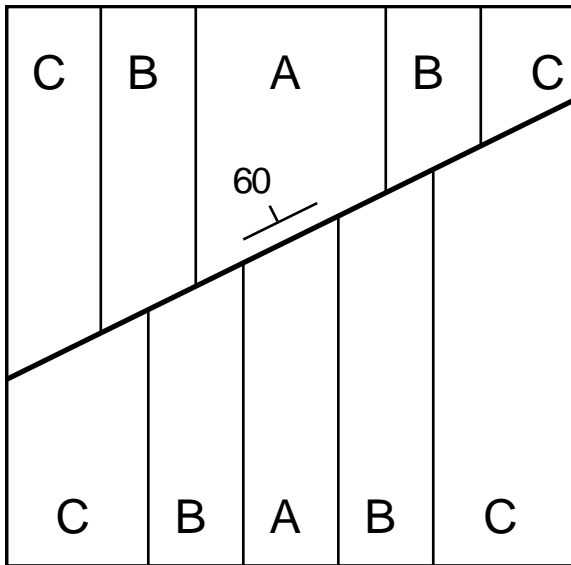
14. The difference between a fault and a joint is that _____.
- A) faults cut through more than one layer of rock, whereas joints cut through only one layer
 - B) faults cut through bedrock, whereas joints cut only the upper sedimentary layers
 - C) rocks on either side of a fault have moved, whereas rocks on either side of a joint have remained stationary
 - D) faults form straight lines in map view, whereas joints form zigzag lines
15. The San Andreas fault is an example of a _____ fault.
- A) normal
 - B) reverse
 - C) right-lateral strike-slip
 - D) left-lateral strike-slip
16. Which of the following is not a dip-slip fault?
- A) a normal fault
 - B) a reverse fault
 - C) a right-lateral fault
 - D) a thrust fault
17. Reverse faults form in response to _____ forces.
- A) compressive
 - B) shearing
 - C) tensional
 - D) torsional
18. What type of fault is characterized by the rocks above the fault plane moving downward, relative to the rocks below the fault plane?
- A) a normal fault
 - B) a reverse fault
 - C) a strike-slip fault
 - D) all of the above
19. A fault plane strikes north-south and dips steeply to the west. Geologic observations indicate that most of the fault movement was dip-slip and that Mesozoic rocks occur east of the fault and Paleozoic rocks occur west of the fault. What type of fault is this?
- A) a left-lateral fault
 - B) a normal fault
 - C) a reverse fault
 - D) a right-lateral fault

20. What is a thrust fault?
- A) a low-angle normal fault
 - B) a low-angle reverse fault
 - C) a low-angle oblique fault
 - D) a low-angle strike-slip fault
21. What two measurements describe the orientation of a fault plane at a given location?
- A) axis and plane
 - B) dip and strike
 - C) lateral and thrust
 - D) plunge and trend
22. A rift valley is _____.
- A) a downfaulted block
 - B) an eroded basin
 - C) an eroded dome
 - D) an upfaulted block
23. In an anticline, _____.
- A) the oldest rocks occur in the center and the limbs dip toward the center
 - B) the oldest rocks occur in the center and the limbs dip away from the center
 - C) the youngest rocks occur in the center and the limbs dip toward the center
 - D) the youngest rocks occur in the center and the limbs dip away from the center
24. The surface that divides a fold into two symmetrical halves is called the _____.
- A) axial plane
 - B) fault
 - C) fold axis
 - D) limb
25. Upfolds, or arches, of layered rock are called _____.
- A) anticlines
 - B) faults
 - C) synclines
 - D) unconformities

Use the following to answer questions 26-29:

Use the following figure to answer the question(s) below:

Units A, B, and C are sedimentary rocks; unit A is the oldest and unit C is the youngest. The sedimentary rocks are cut by a fault, indicated by the bold line. The fault dips 60° to the northwest as shown by the strike and dip symbol.

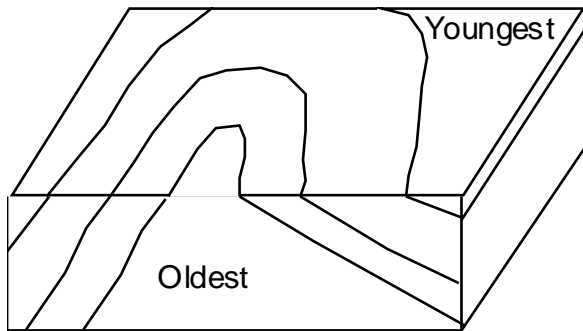


26. What type of structure is shown in the geologic map?
- A) a faulted anticline
 - B) a faulted syncline
 - C) a folded strike-slip fault
 - D) The structure cannot be determined from the information given.
27. Which way do the sedimentary layers dip?
- A) toward the east
 - B) toward the center
 - C) toward the west
 - D) toward the east and west
28. Why is unit A wider north of the fault than it is south of the fault?
- A) Deeper levels of the structure are exposed on the north side of the fault.
 - B) Erosion has removed most of unit A south of the fault.
 - C) Faulting has thinned unit A south of the fault.
 - D) Unit A had a variable thickness prior to faulting.

29. What type of fault is depicted on the geologic map?
- A) a normal fault
 - B) a reverse fault
 - C) a right-lateral fault
 - D) a left-lateral fault
30. An overturned fold is characterized by two limbs _____.
- A) at right angles to one another
 - B) dipping in the same direction, with one limb tilted beyond vertical
 - C) dipping steeply in opposite directions
 - D) dipping gently in opposite directions
31. What type of structure is characterized by rock layers that dip radially toward a central point?
- A) an anticline
 - B) a basin
 - C) a dome
 - D) a syncline
32. Older rocks crop out in the core of which of the structures listed below?
I. anticline II. syncline III. dome IV. basin
- A) structures I and II
 - B) structures I and III
 - C) structures III and IV
 - D) structures II and IV
33. Oil is commonly trapped in _____.
- A) structural basins
 - B) structural domes
 - C) synclines
 - D) all of the above

Use the following to answer questions 34-35:

Use the following figure to answer the question(s) below:



34. The structure shown in the diagram above is a(n) _____.
- A) anticline
 - B) basin
 - C) dome
 - D) syncline
35. The structure shown in the diagram above is a _____.
- A) horizontal, symmetric fold
 - B) plunging, symmetric fold
 - C) horizontal, asymmetric fold
 - D) plunging, asymmetric fold
36. Oil can be trapped at the top of a dome if _____.
- A) there is a nearby basin
 - B) there is an impermeable layer at the top of the dome
 - C) the dome has been eroded
 - D) the dome is part of an adjoining syncline
37. If erosion stripped the top off a dome, one would find _____.
- A) the oldest rocks exposed in the center
 - B) the youngest rocks exposed in the center
 - C) a linear pattern of rock outcrops
 - D) A and C

38. A diagram representing a vertical slice through the Earth's crust is called a _____.
- A) geologic map
 - B) geologic model
 - C) subsurface picture
 - D) geologic cross section
39. On a map with a 1:2400 scale, what does 1 centimeter represent on the map?
- A) 1 centimeter
 - B) 24 centimeters
 - C) 240 centimeters
 - D) 2400 centimeters
40. What is the scale on a map where 1 centimeter represents 1 kilometer?
- A) 1:1
 - B) 1: 100
 - C) 1:100,000
 - D) 1000:1
41. Which of the following is the best statement of the principle of original horizontality?
- A) Igneous intrusions form horizontal layers.
 - B) Metamorphic isograds are horizontal before deformation.
 - C) Sediments are deposited as horizontal layers.
 - D) Most igneous, metamorphic, and sedimentary rocks in the Earth's crust form horizontal layers.
42. An undeformed sedimentary layer is _____ than the layer above and _____ than the layer below.
- A) younger, younger
 - B) older, younger
 - C) younger, older
 - D) older, older
43. The principle of superposition states that _____.
- A) a fault is younger than the rocks it cuts
 - B) sediments are deposited as essentially horizontal layers
 - C) the present is the key to the past
 - D) undisturbed sedimentary layers get progressively younger from bottom to top

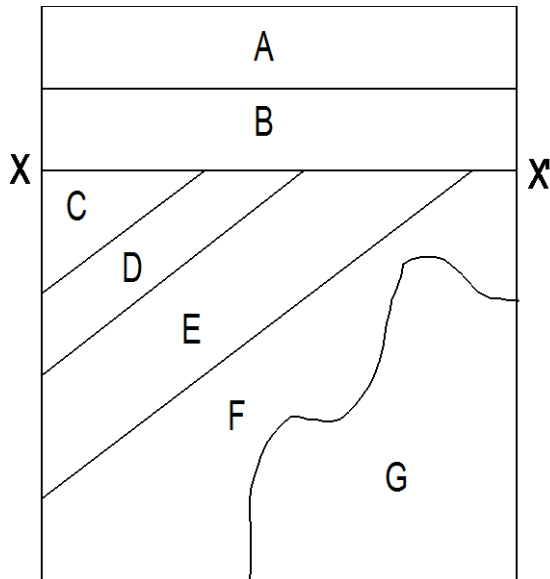
44. Which of the following is used by geologists to determine the relative ages in a rock sequence?
- A) cross-cutting relations
 - B) fossils
 - C) stratigraphy
 - D) all of the above
45. The study of ancient life forms preserved in the rock record is referred to as _____.
- A) stratigraphy
 - B) paleontology
 - C) geochronology
 - D) zoology
46. Who proposed the theory of evolution?
- A) Leonardo da Vinci
 - B) William Smith
 - C) Charles Darwin
 - D) Alfred Wegener
47. Fossils are most common in which rock types?
- A) igneous
 - B) metamorphic
 - C) sedimentary
 - D) Fossils are equally common in sedimentary, igneous, and metamorphic rocks.
48. The study of faunal succession allows _____.
- A) absolute dating of fossil-bearing strata
 - B) correlation of marine fossils with modern mammals
 - C) reconstruction of paleoclimates
 - D) rocks to be correlated from different outcrops
49. What is an unconformity?
- A) a gap in the geologic record
 - B) a period of deposition
 - C) a sedimentary layer of variable thickness
 - D) a sequence of deformed rocks

50. A disconformity is _____.
- A) an erosional surface between horizontal layers of sedimentary rocks
 - B) an erosional surface between igneous and sedimentary rocks
 - C) a rock unit that does not contain fossils
 - D) a rock unit that is different from the units above or below it
51. Which of the following is an erosion surface that separates two sets of sedimentary layers with non-parallel bedding planes?
- A) angular unconformity
 - B) cross-bed
 - C) disconformity
 - D) nonconformity

Use the following to answer questions 52-56:

Use the following to answer the question(s) below:

Units A, B, C, D, E, and F are sedimentary rocks. Unit G is granite.



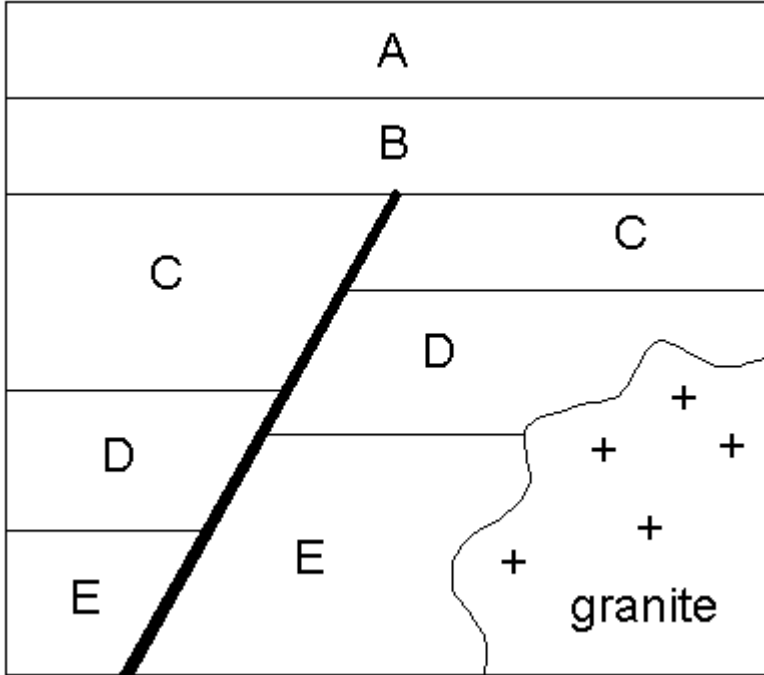
52. The horizontal line labeled X-X' is a(n) _____.
- A) angular unconformity
 - B) contour
 - C) cross-bed
 - D) fault

53. Which of the following units is the youngest?
- A) unit A
 - B) unit B
 - C) unit C
 - D) unit F
54. Which of the following units is the oldest?
- A) unit A
 - B) unit B
 - C) unit C
 - D) unit F
55. Which of the following events happened most recently?
- A) deposition of unit C
 - B) deposition of unit F
 - C) deposition of unit D
 - D) tilting of units C, D, E, and F
56. Which of the following statements is true?
- A) Deposition of unit A occurred before deposition of unit B.
 - B) Erosion took place prior to deposition of unit B.
 - C) Unit C is younger than unit A.
 - D) The granite is older than unit F.

Use the following to answer questions 57-59:

Use the following to answer the question(s) below:

Units A, B, C, D, and E are sedimentary rocks. The thick dark line is a fault.



57. When did faulting occur?

- A) between the deposition of A and B
- B) between the deposition of C and D
- C) between the deposition of B and C
- D) between the deposition of D and E

58. What is the relative timing between faulting and intrusion of the granite?

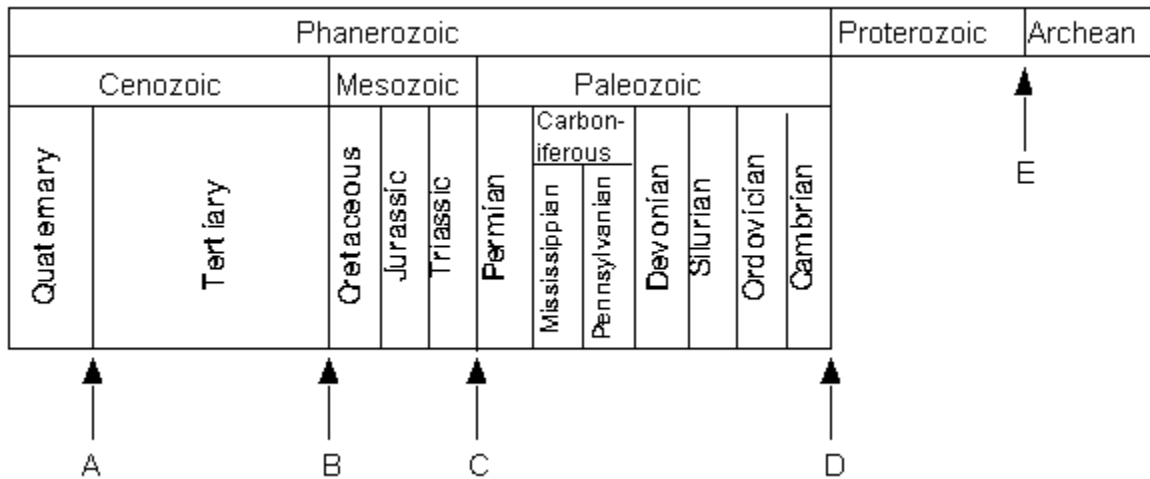
- A) Faulting occurred after the intrusion of the granite.
- B) Faulting occurred before the intrusion of the granite.
- C) Faulting and intrusion of the granite occurred at the same time.
- D) The relative timing between faulting and intrusion of the granite cannot be determined from the information provided.

59. Which of the following units is the oldest?

- A) unit A
- B) unit C
- C) unit E
- D) the granite

Use the following to answer questions 60-62:

Use the following to answer the question(s) below:



60. What is the best estimate for the age of point D?

- A) 65 million years
- B) 250 million years
- C) 145 million years
- D) 542 million years

61. When did fossils of complex organisms (such as shells) first become abundant in the geologic record?

- A) at point B
- B) at point C
- C) at point D
- D) at point E

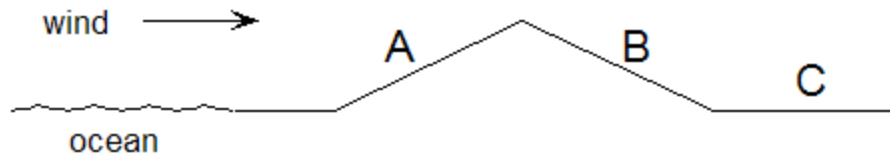
62. When did dinosaurs rule the Earth?
- A) between A and B
 - B) between C and D
 - C) between B and C
 - D) between D and E
63. Which of the following statements regarding radiometric dating is true?
- A) After two half-lives, no radioactive atoms remain.
 - B) Carbon-14 cannot be used to date material more than 100,000 years old.
 - C) Sedimentary rocks can be dated more easily than igneous rocks.
 - D) The radioactive decay product is called the parent atom.
64. Which of the following can change the rate of radioactive decay?
- A) changes in temperature
 - B) chemical reactions
 - C) changes in pressure
 - D) none of the above
65. A rock formed with 1000 atoms of a radioactive parent element, but contains only 250 radioactive parent atoms today. If the half-life for the radioactive element is one million years, how old is the rock?
- A) 250,000 years old
 - B) 750,000 years old
 - C) 2 million years old
 - D) 4 million years old
66. Which of the following instruments is used to precisely measure isotopes for radiometric dating?
- A) electron microprobe
 - B) mass spectrometer
 - C) geiger counter
 - D) petrologic microscope
67. Which of the following radioactive isotopes has the shortest half-life?
- A) carbon-14
 - B) potassium-40
 - C) rubidium-87
 - D) uranium-238

68. Radiometric dating is possible if a rock contains a measurable amount of _____.
- A) daughter atoms
 - B) parent atoms
 - C) both daughter and parent atoms
 - D) either daughter or parent atoms
69. Approximately how fast do plates spread apart?
- A) 1 to 10 millimeters per year
 - B) 2 to 20 centimeters per year
 - C) 5 to 25 meters per year
 - D) 3 to 10 kilometers per year
70. The stratigraphic order of the fossils from animal species is known as the _____.
- A) faunal layering
 - B) faunal succession
 - C) fossil record
 - D) fossil succession
71. The founder of the *principle of the faunal succession* is _____.
- A) Sir James Hutton
 - B) Alfred Wegener
 - C) William Smith
 - D) Nicolaus Steno
72. Abrupt changes in the faunal succession in the rock record represent _____.
- A) times of sea level fluctuations
 - B) decreased sediment deposition
 - C) times of erosion
 - D) mass extinction events
73. The largest mass extinction event in Earth history took place at the end of _____.
- A) the Cretaceous
 - B) the Permian
 - C) the Precambrian
 - D) the Archean

74. The half-life of a radioactive isotope is _____.
- A) half the time it takes all the radioactive atoms to decay
 - B) the time it takes for half of the radioactive atoms to decay
 - C) half of the radioactive atom's "full-life"
 - D) the average life-span of a stable atom
75. Which scientist first suggested the concept of isotopic dating?
- A) Ernest Rutherford
 - B) Henri Becquerel
 - C) Marie Curie
 - D) Clare Patterson
76. After oceans, which of the following reservoirs contains the most water?
- A) the atmosphere
 - B) the lakes and rivers
 - C) the glaciers and polar ice caps
 - D) the underground waters
77. The process by which surface water becomes groundwater is called _____.
- A) discharge
 - B) evaporation
 - C) infiltration
 - D) transpiration
78. What powers the hydrologic cycle?
- A) magnetism
 - B) mantle convection
 - C) radioactive decay
 - D) solar energy
79. The release of water vapor from plants is called _____.
- A) evaporation
 - B) infiltration
 - C) precipitation
 - D) transpiration

80. Which of the following terms is a measure of the amount of water vapor in the air as a proportion of the maximum amount the air could hold at the same temperature?
- A) dew point
 - B) evaporation rate
 - C) relative humidity
 - D) sublimation point

81. The diagram below represents a cross section through a coastal mountain range. Which of the following statements is correct?



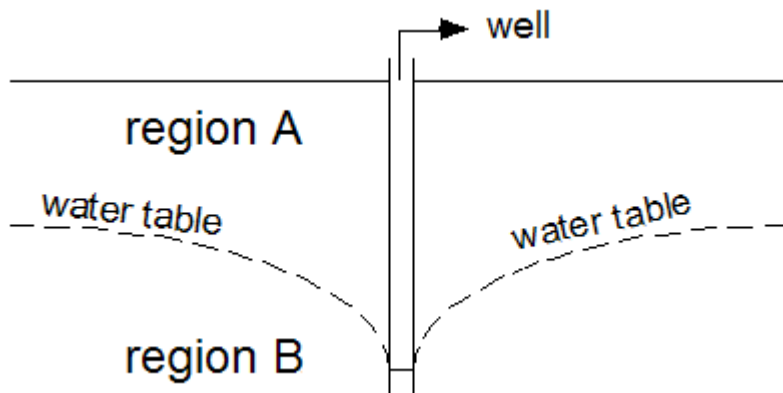
- A) Region A would receive the most precipitation.
 - B) Region B would receive the most precipitation.
 - C) Region C would receive the most precipitation.
 - D) Regions A, B, and C would receive about the same amount of precipitation.
82. Which of the following rivers carries the most water?
- A) the Amazon River in South America
 - B) the Congo River in Africa
 - C) the Ganges River in Asia
 - D) the Mississippi River in North America
83. Layers that transmit groundwater are called _____.
- A) aquicludes
 - B) aquifers
 - C) influent streams
 - D) unsaturated zones
84. Which of the following unfractured rocks has the highest porosity?
- A) granite
 - B) sandstone
 - C) schist
 - D) shale

85. Which of the following statements regarding porosity and permeability is true?
- A) High porosity rocks generally have high permeability.
 - B) High porosity rocks generally have low permeability.
 - C) Low porosity rocks generally have high permeability.
 - D) Porosity and permeability have identical meanings.
86. Which of the following sandstones will have the highest porosity?
- A) a poorly sorted, cemented sandstone
 - B) a poorly sorted, uncemented sandstone
 - C) a well-sorted, cemented sandstone
 - D) a well-sorted, uncemented sandstone
87. Permeability is the _____.
- A) ability of a solid to allow fluids to pass through
 - B) amount of water vapor in the air relative to the maximum amount of water vapor the air can hold
 - C) percentage of pore space in a rock
 - D) process by which plants release water vapor to the atmosphere
88. In the unsaturated zone, pore spaces in the soil and rock contain _____.
- A) air
 - B) water
 - C) air and water
 - D) neither air nor water
89. Which of the following combinations make for the best groundwater reservoir?
- A) low permeability and low porosity
 - B) high permeability and low porosity
 - C) low permeability and high porosity
 - D) high permeability and high porosity
90. What is the difference between the saturated and unsaturated zones of groundwater?
- A) The saturated zone has a higher porosity than the unsaturated zone.
 - B) The saturated zone has a lower porosity than the unsaturated zone.
 - C) The pore spaces in the saturated zone are full of water; the pore spaces in the unsaturated zone are not full of water.
 - D) The pore spaces in the saturated zone are not full of water; the pore spaces in the unsaturated zone are full of water.

91. Which of the following has the highest permeability?
- A) gravel
 - B) sandstone
 - C) shale
 - D) silt
92. Which of the following represents the boundary between the saturated zone and the unsaturated zone?
- A) aquifer
 - B) aquiclude
 - C) groundwater table
 - D) porosity

Use the following to answer questions 93-95:

Use the following to answer the question(s) below:



93. Region A is the _____.
- A) discharge zone
 - B) recharge zone
 - C) saturated zone
 - D) unsaturated zone
94. Region B is the _____.
- A) discharge zone
 - B) recharge zone
 - C) saturated zone
 - D) unsaturated zone

95. The lowering of the water table near the well is called a(n) _____.
- A) aquiclude
 - B) cone of depression
 - C) influent zone
 - D) sinkhole
96. What type of aquifer is bounded above and below by relatively impermeable beds?
- A) aquiclude
 - B) confined
 - C) saturated
 - D) unconfined
97. If the amount of discharge in an aquifer exceeds the amount of recharge, the groundwater table _____.
- A) will rise
 - B) will drop
 - C) will remain the same
 - D) may rise or drop depending on the permeability
98. Which of the following is not caused by overpumping groundwater?
- A) intrusion of salt water into coastal aquifers
 - B) depletion of an aquifer
 - C) raising of the land surface
 - D) development of cracks and fissures at the surface
99. Which of the following statements about groundwater is true?
- A) At the coast, salty groundwater lies on top of fresh groundwater.
 - B) Groundwater moves from areas where the water table is low to areas where the water table is high.
 - C) The higher the permeability of an aquifer, the faster the groundwater will flow.
 - D) The steeper the water-table slope, the slower the groundwater will flow.
100. According to Darcy's law, which of the following aquifers will have the greatest rate of groundwater flow?
- A) an aquifer with high hydraulic conductivity and a high hydraulic gradient
 - B) an aquifer with high hydraulic conductivity and a low hydraulic gradient
 - C) an aquifer with low hydraulic conductivity and a high hydraulic gradient
 - D) an aquifer with low hydraulic conductivity and a low hydraulic gradient

101. Which of the following statements about groundwater in coastal regions is true?
- A) Fresh water is denser than seawater, therefore fresh groundwater floats on top of salty groundwater.
 - B) Fresh water is denser than seawater, therefore salty groundwater floats on top of fresh groundwater.
 - C) Seawater is denser than fresh water, therefore fresh groundwater floats on top of salty groundwater.
 - D) Seawater is denser than fresh water, therefore salty groundwater floats on top of fresh groundwater.
102. In what type of rock do most caves form?
- A) granite
 - B) limestone
 - C) sandstone
 - D) shale
103. Karst topography forms in regions underlain by _____.
- A) basalt
 - B) limestone
 - C) sandstone
 - D) shale
104. Stalagmites _____.
- A) form in sandstone fractures
 - B) form in the pore spaces of a limestone
 - C) grow up from the floor of a cave
 - D) hang down from the ceiling of a cave
105. Which of the following statements about karst topography is false?
- A) Karst topography contains sinkholes.
 - B) Karst topography forms from freezing and thawing of groundwater.
 - C) Karst topography does not have a normal river drainage system.
 - D) Karst topography forms in regions where subsurface limestone is dissolved by groundwater.
106. Water that is suitable for drinking is also called _____ water.
- A) sanitary
 - B) fresh
 - C) potable
 - D) meteoric

107. Crusts of calcium carbonate produced at hot springs are referred to as _____.
- A) travertine
 - B) hydrothermal deposits
 - C) karst
 - D) all of the above
108. The hydraulic gradient is the _____.
- A) ratio between the porosity and permeability of an aquifer
 - B) ratio between the permeability and elevation difference in an aquifer
 - C) ratio between the elevation difference and the flow distance in an aquifer
 - D) ratio between the influx and outflow of water in an aquifer
109. The recycling of water on Earth is known as the _____ cycle.
- A) water
 - B) wet
 - C) hydrous
 - D) hydrologic
110. The transformation of solid ice directly into water vapor is called _____.
- A) evaporation
 - B) melting
 - C) sublimation
 - D) transpiration
111. The mathematical equation that describes the flow of water underground is known as _____ Law.
- A) Murhpy's
 - B) Darcy's
 - C) Henry's
 - D) Newton's
112. Which of the following is a measure of a fluid's resistance to flow?
- A) capacity
 - B) competence
 - C) permeability
 - D) viscosity

113. Which of the following statements about fluid flow is false?
- A) As the velocity of a stream increases, laminar flow may change to turbulent flow.
 - B) The viscosity of most fluids increases as temperature increases.
 - C) Most streams and rivers are turbulent.
 - D) The more viscous the fluid, the more likely the flow is laminar.
114. Which of the following terms describes the total sediment load carried by a stream?
- A) capacity
 - B) competence
 - C) discharge
 - D) viscosity
115. Which of the following is considered part of a stream's bed load?
- A) dissolved salts
 - B) saltating sand grains
 - C) gravel sliding along the bottom
 - D) suspended clay particles
116. As the velocity of a stream current increases, _____.
- A) more of the bed material is in motion
 - B) progressively finer particles are suspended
 - C) the suspended load decreases
 - D) total capacity decreases
117. Which of the following particles is the most easily eroded from the bed of a stream?
- A) boulders
 - B) cohesive clay
 - C) pebbles
 - D) sand
118. Which of the following materials is most likely to be transported as suspended load?
- A) boulders
 - B) clay
 - C) gravel
 - D) sand

119. In a sand dune in a river, _____ occurs on the upstream side of the dune and _____ occurs on the downstream side of the dune.

- A) deposition, deposition
- B) erosion, deposition
- C) deposition, erosion
- D) erosion, erosion

120. Which of the following terms describes a curved, coarse-grained deposit that forms on the inside curve of a stream?

- A) dune
- B) meander
- C) oxbow
- D) point bar

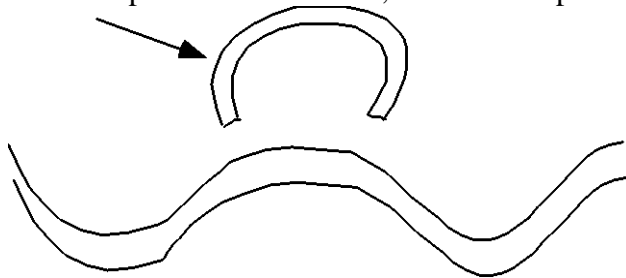
121. Curves and bends in a stream channel are called _____.

- A) alluvial fans
- B) braids
- C) deltas
- D) meanders

122. At a bend in a river, _____ occurs on the outside of the bend and _____ occurs on the inside of the bend.

- A) deposition, deposition
- B) erosion, deposition
- C) deposition, erosion
- D) erosion, erosion

123. In the map of a stream below, the arrow is pointing to a(n) _____.

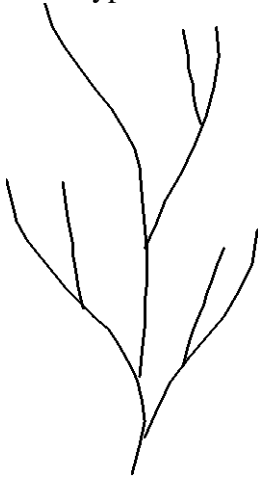


- A) natural levee
- B) oxbow lake
- C) point bar
- D) sand dune

124. Oxbow lakes are associated with which of the following types of rivers?
- A) braided rivers
 - B) dendritic rivers
 - C) meandering rivers
 - D) straight rivers
125. The volume of water flowing past a given point in a given time is called the _____.
- A) capacity
 - B) competence
 - C) discharge
 - D) viscosity
126. Which of the following would be the most fertile area for crops?
- A) a stream channel
 - B) a floodplain
 - C) a natural levee
 - D) an uplands area away from the stream
127. Which of the following discharge equations is correct?
- A) $\text{discharge} = \frac{\text{width}}{(\text{depth} \times \text{velocity})}$
 - B) $\text{discharge} = \frac{(\text{width} \times \text{depth})}{\text{velocity}}$
 - C) $\text{discharge} = \text{width} \times \text{depth} \times \text{velocity}$
 - D) $\text{discharge} = \frac{(\text{width} \times \text{velocity})}{\text{depth}}$
128. Which of the following depositional settings consists primarily of fine-grained silt and mud?
- A) stream channels
 - B) floodplains
 - C) natural levees
 - D) point bars
129. For most rivers, discharge _____ downstream.
- A) increases
 - B) remains constant
 - C) decreases slightly
 - D) decreases greatly

130. For a given river, which of the following floods would have the largest discharge?
- A) a 5-year flood
 - B) a 20-year flood
 - C) a 100-year flood
 - D) One cannot tell from the information provided.
131. If a dam is built, sediment will _____ on the upstream side of the dam and sediment will _____ on the downstream side of the dam.
- A) accumulate, accumulate
 - B) erode, accumulate
 - C) accumulate, erode
 - D) erode, erode
132. Large, cone-shaped deposits of sediment at a mountain front are called _____.
- A) alluvial fans
 - B) deltas
 - C) natural levees
 - D) terraces
133. In an alluvial fan, the coarsest material would be deposited _____.
- A) on the steep, upper slopes of the fan
 - B) on the gentle, lower slopes of the fan
 - C) approximately halfway between the steep slopes of the mountains and the gentle slopes of the plains
 - D) where two fans interfere or overlap one another
134. Which of the following statements regarding stream terraces is true?
- A) Terraces are composed of bedrock and form as a result of rapid subsidence.
 - B) Terraces are composed of bedrock and form as a result of rapid uplift.
 - C) Terraces are composed of floodplain deposits and form as a result of rapid subsidence.
 - D) Terraces are composed of floodplain deposits and form as a result of rapid uplift.
135. In North America, the continental divide that separates water that flows into the Atlantic Ocean from water that flows into the Pacific Ocean is located _____.
- A) in the Sierra Nevada, California
 - B) in the Rocky Mountains
 - C) in the Appalachian Mountains
 - D) along the Mississippi River

136. What type of drainage pattern is depicted in the map below?



- A) dendritic
- B) radial
- C) rectangular
- D) trellis

137. What type of drainage network would you expect to find on a volcano?

- A) dendritic drainage
- B) rectangular drainage
- C) radial drainage
- D) trellis drainage

138. Where do deltas form?

- A) at drainage divides
- B) at mountain fronts
- C) at meander loops
- D) at river mouths

139. Why is the Mississippi delta so large?

- A) because the Mississippi River transports a huge amount of sediment
- B) because tides in the Gulf of Mexico are not very strong
- C) because waves in the Gulf of Mexico are not very strong
- D) all of the above

140. Where does a stream channel begin?
- A) where rainwater infiltrates into the subsurface weakening the underlying bedrock
 - B) where there are active faults that create cracks in the underlying bedrock
 - C) where rainwater flows over the surface so fast that it carves into the underlying units
 - D) where there are pre-existing weaknesses in the bedding planes in the underlying units
141. _____ is the process whereby sand grains jump along the streambed during transport.
- A) Superposition
 - B) Hydrolysis
 - C) Saltation
 - D) Meandering
142. The topographic rise between two streams is called a _____.
- A) divide
 - B) point bar
 - C) trellis
 - D) valley
143. Why are sand-sized particles easier to erode than clay-sized particles?
- A) because sand grains are rounder and roll more easily, whereas clay particles are flat and platy
 - B) because sand grains are typically made of quartz, which saltates more easily than clay particles
 - C) because clay particles are denser than sand particles, making them heavier
 - D) because clay particles are attracted to each other due to opposite charges, which hold them in place
144. What sort of sedimentary structure forms where rivers run into bodies of standing water?
- A) alluvial fan
 - B) delta
 - C) terrace
 - D) floodplain

145. An imaginary line below which a stream cannot erode is called _____.
- A) ground level
 - B) sea level
 - C) lake level
 - D) base level
146. Which of the following particles would have the lowest settling velocity?
- A) sand
 - B) clay
 - C) gravel
 - D) cobbles
147. What information do geologists use to estimate speeds of ancient rivers?
- A) sediment type
 - B) grain size
 - C) channel dimensions
 - D) chemistry of the sediments
148. What is the discharge of a stream that is one meter deep, two meters wide, and has a water flow of 5 meters per second?
- A) 1 m/sec
 - B) 5 m/sec
 - C) 5 m³/sec
 - D) 10 m³/sec