DYNAMIC PLANET 2011 BOOTH INVITATIONAL

1. Which of the following processes is NOT part of the water cycle?
   a. evaporation
   b. infiltration
   c. condensation
   d. deposition
2. Which type of stream load makes a river look muddy?
   a. bed load
   b. dissolved load
   c. suspended load
   d. gravelly load
3. What features are common in youthful river channels?
   a. meanders
   b. flood plains
   c. rapids
   d. sandbars
4. Which depositional feature is found at the coast?
   a. delta
   b. flood plain
   c. alluvial fan
   d. placer deposit
5. Caves are mainly a product of
   a. erosion by rivers.
   b. river deposition.
   c. water pollution.
   d. erosion by ground water.
6. The largest drainage basin in the United States is the
   a. Amazon.
   b. Columbia.
   c. Colorado.
   d. Mississippi.
7. An aquifer must be
   a. nonporous and nonpermeable.
   b. nonporous and permeable.
   c. porous and nonpermeable.
   d. porous and permeable.
8. Which of the following is a point source of water pollution?
   a. fertilizer from a farming area
   b. runoff from city streets
   c. a wastewater pipe
   d. leaking septic tanks
9. During primary treatment at a sewage treatment plant,
   a. water is sent to an aeration tank.
   b. water is mixed with bacteria and oxygen.
   c. dirty water is passed through a large screen.
   d. water is sent to a settling tank where chlorine is added.
10. A stream is most likely to deposit the rock and soil that it is carrying when
    a. its current slows.
    b. it carries many pollutants.
    c. its volume increases.
    d. it has a steep gradient.
11. Old rivers are characterized by
    a. high erosive energy.
    b. tectonic activity.
    c. straight channels.
    d. sediment deposition.
12. As a stream's velocity increases, it
    a. becomes a river.
    b. can carry larger particles.
    c. cuts a wider, shallow channel.
    d. forms more tributaries.
13. For a rock layer to function as an aquifer, it must
    a. have a small zone of aeration.
    b. be part of an artesian formation.
    c. have pores that are connected.
    d. have a large soil content.

14. Large sinkholes have formed in parts of Florida. These holes are formed when
    a. rivers erode away their banks.
    b. caves formed by ground water collapse.
    c. river meanders form new channels.
    d. flood waters infiltrate permeable rocks.

15. ____ occurs when water vapor cools and changes into liquid water droplets that form clouds in the atmosphere.
    a. Evaporation
    b. Condensation
    c. Percolation
    d. Precipitation

16. ____ occurs when liquid water from the Earth's surface and from living organisms changes into water vapor.
    a. Percolation
    b. Condensation
    c. Evaporation
    d. Precipitation

17. ____ is the downward movement of water through pores and other spaces in the soil due to gravity.
    a. Percolation
    b. Infiltration
    c. Evaporation
    d. Precipitation

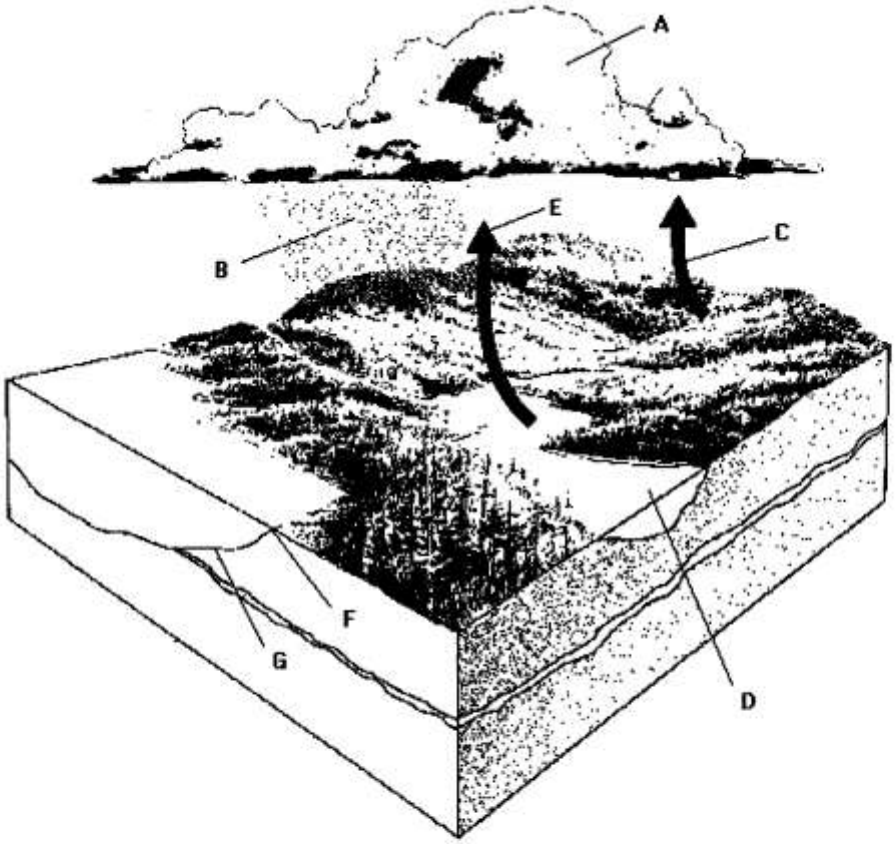
18. ____ is the movement of water into the ground due to the pull of gravity.
    a. Runoff
    b. Infiltration
    c. Percolation
    d. Precipitation

19. ____ is water that flows across land and collects in rivers, streams, and eventually the ocean.
    a. Runoff
    b. Infiltration
    c. Percolation
    d. Condensation

20. ____ is rain, snow, sleet, or hail that falls from clouds onto the Earth's surface.
    a. Runoff
    b. Condensation
    c. Infiltration
    d. Precipitation

21. The Grand Canyon was formed by
    a. evaporation.
    b. infiltration.
    c. erosion.
    d. percolation.

Examine the diagram below and answer the questions that follow.



22. Which of the following is illustrated by **E**?
    a. evaporation
    b. precipitation
    c. condensation
    d. percolation

23. Which of the following is illustrated by **B**?
    a. condensation
    b. percolation
    c. infiltration
    d. precipitation

24. Which of the following is illustrated by **G**?
    a. condensation
    b. infiltration
    c. evaporation
    d. percolation

25. Which of the following is illustrated by **F**?
    a. evaporation
    b. infiltration
    c. condensation
    d. percolation

26. A ____ is the land drained by a river system, including the main river and all of its tributaries.
    a. divide
    b. drainage basin
    c. channel
    d. load

27. ____ are smaller streams or rivers that flow into larger ones.
    a. Divides
    b. Drainage basins
    c. Channels
    d. Tributaries

28. Drainage basins are separated from each other by an area called a
    a. divide.
    b. watershed.
    c. load.
    d. channel.

29. A drainage basin is also called a
    a. channel.
    b. watershed.
    c. load.
    d. divide.

30. Which of the following is the world's largest drainage basin?
    a. Rio Grande basin
    b. Mississippi River basin
    c. Colorado River basin
    d. Amazon River basin

31. The path that a stream follows is called a
    a. channel.
    b. watershed.
    c. divide.
    d. drainage basin.

32. If a river starts at an elevation of 8,500 m and travels 700 km downstream to a lake that is at an elevation of 800 m, what is the stream's gradient?
    a. 7 m/km
    b. 9 m/km
    c. 11 m/km
    d. 13 m/km

33. Which river will cause the most erosion?
    a. one with low gradient and low discharge
    b. one with high gradient and high discharge
    c. one with high gradient and low discharge
    d. one with low gradient and high discharge

34. A ____ includes the main stream and tributaries of a river.
    a. river system
    b. watershed
    c. channel
    d. drainage basin

35. The materials carried in a steam's water are collectively called the stream's
    a. discharge.
    b. gradient.
    c. watershed.
    d. load.

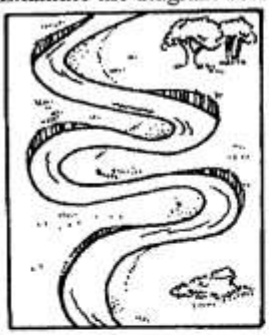
36. The ____ consists of dissolved materials, such as sodium and calcium.
    a. bed load
    b. suspended load
    c. dissolved load
    d. mineral load

37. At which stage would a river erode its channel wider rather than deeper?
    a. youthful stage
    b. mature stage
    c. old stage
    d. rejuvenated stage

38. At which stage would a river be surrounded by terraces?
    a. youthful stage
    b. mature stage
    c. old stage
    d. rejuvenated stage

39. At which stage would a river be characterized by wide, flat flood plains?
    a. youthful stage
    b. mature stage
    c. old stage
    d. rejuvenated stage

Examine the diagram below, and answer the questions that follow.



40. The wide curves in the river in the diagram are called
    a. meanders.
    b. watersheds.
    c. tributaries.
    d. channels.

41. The river in the diagram is most likely in the ____ stage.
    a. youthful
    b. mature
    c. old
    d. rejuvenated

42. As a river passes from a youthful to a mature stage, it
    a. shortens.
    b. deepens.
    c. narrows.
    d. meanders.

43. At a meander of a river, erosion occurs
    a. on the outside bank where the water flows faster.
    b. on the outside bank where the water flows slower.
    c. along the inside bank where the water flows slower.
    d. along the inside bank where the water flows faster.

44. At a meander of a river, deposition occurs
    a. on the outside bank where the water flows faster.
    b. on the outside bank where the water flows slower.
    c. along the inside bank where the water flows slower.
    d. along the inside bank where the water flows faster.

45. Alluvial fans and deltas have similar
    a. locations of deposition.
    b. sizes of sediment grains.
    c. shapes of deposition.
    d. angles of slope.

46. One difference between an alluvial fan and a delta is that an alluvial fan is
    a. deposited on dry ground.
    b. deposited in water.
    c. relatively flat.
    d. formed by stream deposition.

47. Channel erosion would most likely be quicker in streams with
    a. bed load.
    b. suspended load.
    c. dissolved load.
    d. mineral load.

48. Flood plains generally become
    a. unusable and desolate.
    b. a swampy marsh.
    c. a new ocean.
    d. rich farming areas.

49. The zone of aeration and the zone of saturation meet at a boundary called the
    a. recharge zone.
    b. water table.
    c. well.
    d. artesian spring.

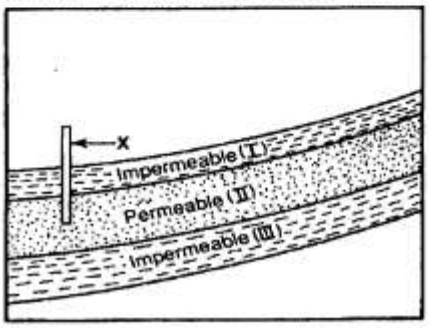
50. A river can be rejuvenated by
    a. increasing its slope.
    b. decreasing its speed.
    c. increasing the number of its tributaries.
    d. decreasing its depth.

51. Which of the following will affect a stream's erosion?
    a. the stream's gradient
    b. the stream's discharge
    c. the stream's load
    d. All of the above

52. Which of the following would NOT be considered the best type of layer to form an aquifer?
    a. sandstone
    b. limestone
    c. cement
    d. sand

53. A rock that tends to stop the flow of water is
    a. porous.
    b. impermeable.
    c. aerated.
    d. unsaturated.

Examine the illustration below and answer the questions that follow.



54. The rock layer **I** is called the
    a. aquifer.
    b. cap rock.
    c. well.
    d. zone of saturation.

55. The rock layer **II** is called the
    a. aquifer.
    b. cap rock.
    c. Artesian spring.
    d. zone of aeration.

56. The formation labeled **X** is called a(n)
    a. aquifer.
    b. zone of saturation.
    c. cap rock.
    d. Artesian spring.

57. The diagram above illustrates a(n)
    a. alluvial fan.
    b. artesian formation.
    c. delta.
    d. drainage basin.

Examine the illustration below and answer the question that follows.

58. The diagram above illustrates a(n)
    a. stalagmite.
    b. artesian formation.
    c. stalactite.
    d. dripstone column.

59. Only 3 percent of Earth's water is drinkable, and of that 3 percent, 75 percent is frozen in the polar icecaps. What percentage of Earth's drinkable water is readily available for use?
    a. 0.75 percent
    b. 2.25 percent
    c. 3 percent
    d. 75 percent

60. More than half of all household water in the United States comes from
    a. rivers.
    b. surface water.
    c. lakes.
    d. ground water.

61. At sewage treatment plants, filtered water that is to be cleaned is sent to a(n) ____ where oxygen and bacteria are added.
    a. settling tank
    b. aeration tank
    c. chlorinator
    d. sludge tank

62. At sewage treatment plants, disinfecting the water occurs in the
    a. settling tank.
    b. aeration tank.
    c. chlorinator.
    d. sludge tank.

Use the table below to answer the questions that follow.

Average Household Water Usage

Used for	Usage
Bathing, toilet, laundry	60%
Lawn, car and pool maintenance	32%
Drinking, cooking, and dishes	8%

**The average household in the United States uses about 100 gal of water per day.

63. How much water does the average American use daily for drinking water and kitchen use?
    a. 8 gallons
    b. 32 gallons
    c. 60 gallons
    d. 100 gallons

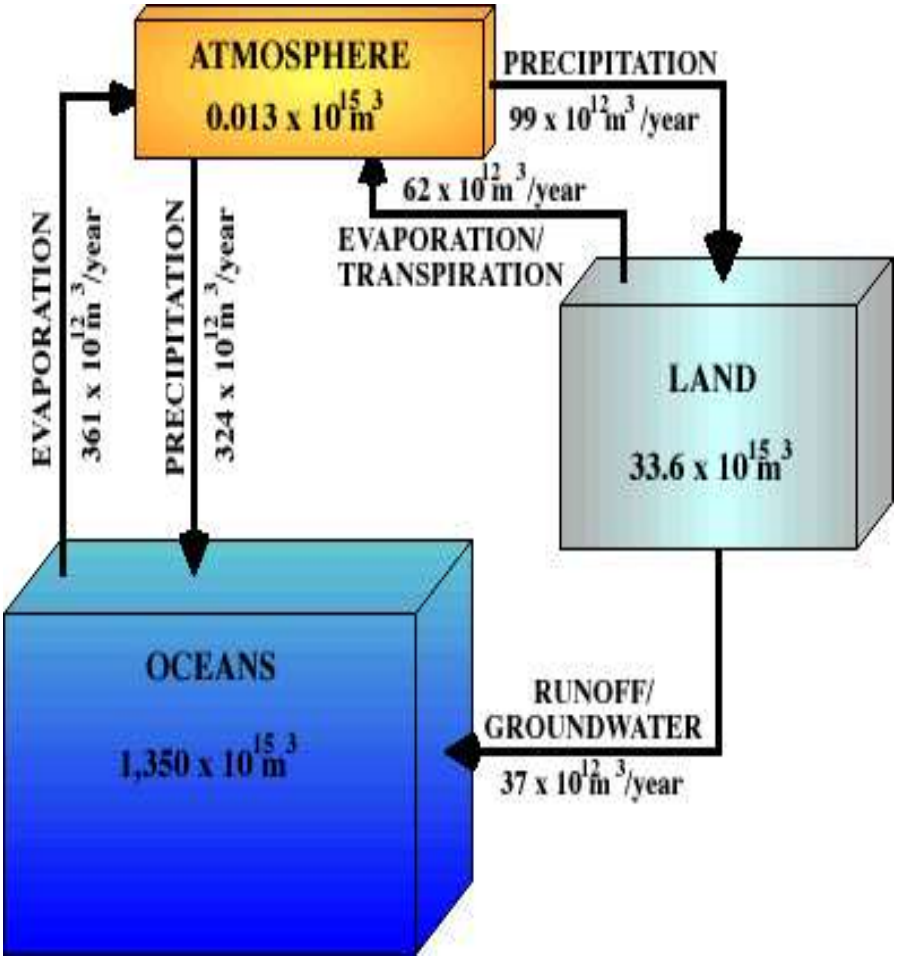
64. How much water does the average American use daily for bathing, laundry, and toilet use?
    a. 8 gallons
    b. 32 gallons
    c. 60 gallons
    d. 100 gallons

65. How much water does the average American use daily to water their lawn, wash their car, and maintain their pool?
    a. 8 gallons
    b. 32 gallons
    c. 60 gallons
    d. 100 gallons

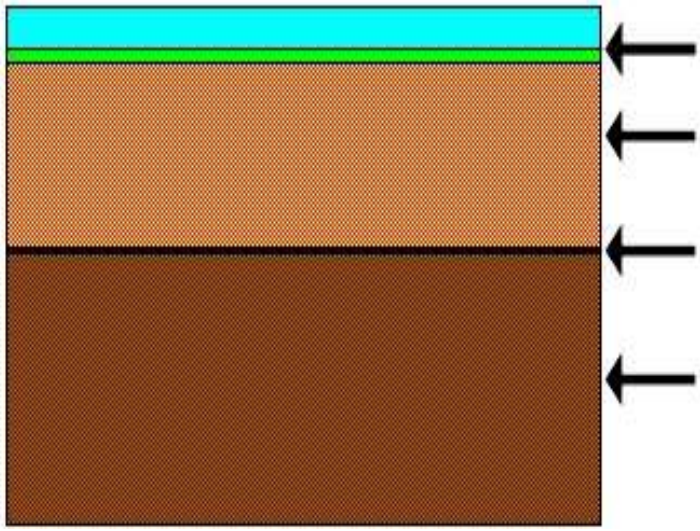
66. Which of the following carries the largest and heaviest rocks?
    a. waves
    b. rivers
    c. wind
    d. ice

67. Which of the following is a depression created by a glacier that usually gets filled with water to form a lake or pond?
    a. moraine
    b. kettle
    c. till
    d. outwash plain

68. What does this diagram represent? What are the percentages associated with each box below?



69. Label the correct terms for the different layers representing ground water zones.



Label with the correct tems for the different layers representing ground water zones

70. What type of Karst feature is this?

71. What Type of Karst Feature is this?

72. What type of Karst feature is this?

73. What type of river channel is this – explain how it is formed.

74. What type of formation is this? How is it formed?

75. Explain the formation of an oxbow lake. What will eventually happen to the lake?