Answer Key for Environmental Geology Lab 2

1. Point A will have the least discharge. Water from tributaries flow toward the trunk stream that flows pass point B which has the greatest discharge.

2. Point A has the highest elevation because it is closest to the drainage divide

3. Mouth of watershed. Indicate on figure 1.

4.
September   Q (m³/day) = 2,265,300 m³/day

5.
September   Q (m³/sec) = 26.2 m³/sec

6.
September   Q (ft³/sec) = 926 ft³/sec

7. No, a 100-year flood provides no guarantee exactly when a flood will occur. All it indicates is that there is a 1% chance of a flood of that magnitude occurring in a given year.

8. True

9. False

10. True

11. $Q = A \times V = 2$ ft / sec x 10 ft² = 20 ft³ / sec

12. $V = Q / A = 20^3$ ft / sec / 20 ft² = 1 ft / sec

13. Yes, because when water is less confined it travels more slowly and when it is more confined it travels more quickly

14.
200 yr.	3,100 cfs
30 yr	2,400 cfs
10 yr	1,750 cfs
5 yr	1,050 cfs

15. Discharge of about 300 cfs

16. Reoccurrence interval of about 4.0 to 4.5 yrs

17 and 23. Draw a house on Figure 6.

18. Between Lines 1 to 2   120 cfs
    Between Lines 2 to 3   140 cfs

19. Line 3

20. 335 cfs

21. 21 boxes X 25 cfs = 525 cfs

22. 926 cfs – 335 cfs = 591 cfs

23. Definitely not. A relatively modest five-year flood can cause your house to be flooded by over five feet of water.

24. Yes, because with increased urbanization more runoff is produced increasing the chances of flooding

25. No because the assumption that reoccurrence intervals is constant through time is not valid in light of climate change, potential landscape alterations, or the development of structural barriers to limit flooding within a watershed all of which can change the relationship between discharge and reoccurrence interval.