

Final Exam
Continuing Education Course #440
Floodplain Engineering
An Introduction to Stream Classification & Restoration

1. Determining the time frame of a stream restoration project is an essential part of the planning process.
☐ a. True.
☐ b. False.
2. In designing and implementing a stream restoration process it is necessary for the engineer to work in collaboration with other professionals.
☐ a. True.
☐ b. False.
3. Clean, tilled cropland generates less sediment than does a woodland.
☐ a. True.
☐ b. False.
4. Which of the following is not an effect of urbanization on streams?
☐ a. Increased stormwater runoff.
☐ b. Enhancement of the water quality.
☐ c. Increase in the load of nutrients, sediment, & toxic material.
☐ d. Alteration of the natural water temperature regime.
5. According to the Rosgen Classification System, what is the classification of a stream with a bedrock channel, that is steep, entrenched, step-pool stream with a slope of 6%.?
☐ a. Aa+.
☐ b. A1.
☐ c. C1.
☐ d. D.
6. According to the Rosgen Classification System, what is the classification of a low-gradient, meandering riffle/pool stream with a flat, sandy channel?
☐ a. Aa+.
☐ b. A1.
☐ c. C1.
☐ d. E5f.
7. According to relationship between the Rosgen Method and Manning's n coefficient, what is the n value for a large F5 type stream?
☐ a. 0.10.
☐ b. 0.057.
☐ c. 0.038.
☐ d. 0.38.

8. In analyzing a channel it is found that the channel banks exhibit high erodibility and do not have any controls that restrict extensive changes in geometry. How should this channel be categorized?

- ☐ a. Very stable.
- ☐ b. Moderately stable.
- ☐ c. Unstable.
- ☐ d. Very unstable.

9. Using the Pfankuch Method to classify channel stability, what is the score assigned to the “vegetative bank protection” if there is less than 50% plant density present?

- ☐ a. 3.
- ☐ b. 9.
- ☐ c. 12.
- ☐ d. 0.

10. Using the Pfankuch Method to classify channel stability, what is the score assigned to the “bank rock content” if there is approximately 30% rock content and most of the rocks are in the range of 3-6” in diameter?

- ☐ a. 1.
- ☐ b. 2.
- ☐ c. 4.
- ☐ d. 6.

11. Using the Pfankuch Method to classify channel stability, what percent of the rocks are “bright” if the “Brightness” component is assigned a score of 3?

- ☐ a. 0%.
- ☐ b. <35%.
- ☐ c. 35% to 65%.
- ☐ d. >65%.

12. Using the Pfankuch Method to classify channel stability, what is the overall rating if the score is 60.

- ☐ a. Excellent.
- ☐ b. Good.
- ☐ c. Fair.
- ☐ d. Poor%.

13. Which if the following is not a typical goal of stream restoration projects?

- ☐ a. Flood level reduction.
- ☐ b. Be self-maintaining and cost effective.
- ☐ c. Improve water quality.
- ☐ d. Improve agricultural production.

14. When production and use of stream and streamside vegetation (game fish, livestock forage, & forest products) are a goal of stream restoration, then channel banks and bed may be modified to favor specific game fish.

- ☐ a. True.
- ☐ b. False.

15. In-channel structures used in stream restorations are generally designed for which of the following?

- ☐ a. To reduce erosive velocities.
- ☐ b. To armor a vulnerable section of the channel.
- ☐ c. Neither of the above.
- ☐ d. Both of the above.

16. A rock vane in a restored stream channel sometimes includes a scour hole on the upstream side of the vane.

- ☐ a. True.
- ☐ b. False.

17. In checking physical and chemical stream parameters, which of the following is not covered under “watershed trends”?

- ☐ a. Land use.
- ☐ b. Demographics.
- ☐ c. Land management practices.
- ☐ d. Soil types, topography, & regional climate & weather.

18. Which of the following are common maintenance actions in the channel of a restored stream?

- ☐ a. Repair of in-stream structures.
- ☐ b. Island & bar preservation.
- ☐ c. Bank toe stabilization.
- ☐ d. All of the above.

19. Which of the following are common maintenance activities associated with vegetation in a restored stream channel?

- ☐ a. Repair bank armoring.
- ☐ b. Repair pools/riffles and/or rock structures.
- ☐ c. Removal of excess woody vegetation.
- ☐ d. All of the above.

20. In maintaining a restored stream reach it is sometimes necessary to keep streamside pathways clear for people and livestock.

- ☐ a. True.
- ☐ b. False.

21. Maintaining proper water depth, water velocities, and stream temperature all contribute to improving aquatic habitat.

- ☐ a. True.
- ☐ b. False.

22. To improve water quality, it is necessary to maintain which of the following:

- ☐ a. Rock vanes.
- ☐ b. Channel width to depth ratio.
- ☐ c. Scour holes.
- ☐ d. pH & dissolved oxygen.

23. In any stream restoration project there is always only one “right” answer to the problem.

- ☐ a. True.
- ☐ b. False.

24. It is imperative to have specific, measurable goals for a stream restoration project.

- ☐ a. True.
- ☐ b. False.

25. All successful stream restoration projects represent permanent solutions.

- ☐ a. True.
- ☐ b. False.