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Examination for Earth and Rockfill Dams Part 1

CHAPTER 1 - INTRODUCTION

1. Why was the construction of earth dams by hydraulic means curtailed in the 1940's?
 - a) Liquefaction concerns
 - b) Economic considerations
 - c) Earthquake loading
 - d) All of the above

CHAPTER 2 – GENERAL CONSIDERATIONS

2. Which of the following is not listed as a major feature of the design?
 - a) Seepage conditions
 - b) Influence of climate
 - c) Abutment stability
 - d) Foundation treatment
3. When should turnover of the dam to its sponsor occur?
 - a) Immediately before the first periodic inspection
 - b) Immediately following the last periodic inspection
 - c) Immediately following the first periodic inspection
 - d) Immediately before the last periodic inspection
4. What distinguishes the two principal types of embankment dams?
 - a) The height of the dam
 - b) The predominant fill material used
 - c) The amount of impervious material used
 - d) The utilization of the dam
5. Which of the following is not listed as a method for controlling underseepage in dam foundations?
 - a) Horizontal drains
 - b) Diversion galleries
 - c) Toe drains
 - d) Impervious blankets

6. When high pore pressures may be induced in the foundation, instrumentation should be installed during construction?

- a) True
- b) False
- c) Not enough information for a specific answer
- d) Too many variables for a specific answer

7. Greater savings will result if materials from required excavations are stockpiled?

- a) True
- b) False
- c) Not enough information for a specific answer
- d) Too many variables for a specific answer

CHAPTER 3 – FIELD INVESTIGATIONS AND LABORATORY TESTING

8. Which of the following may be a major factor in determining project feasibility?

- a) Suitability of the foundation
- b) Suitability of embankment materials
- c) Availability of embankment materials
- d) Required foundation treatment

9. Estimates of foundation permeability from laboratory tests are often misleading?

- a) True
- b) False
- c) Not enough information for a specific answer
- d) Too many variables for a specific answer

10. Right and left abutments are so designated looking in what direction?

- a) Upstream
- b) Downstream
- c) Not enough information for a specific answer
- d) Too many variables for a specific answer

11. Test fills must be completed when?

- a) After commencement of construction
- b) Prior to completion of the embankment design
- c) During the feasibility phase
- d) Prior to reservoir design

CHAPTER 4 – GENERAL DESIGN CONSIDERATIONS

12. For dams in narrow valleys, the curvature radius forming the upstream arching is generally what?

- a) Less than 500 ft.
- b) 500 to 1,000 ft.
- c) 1,000 to 3,000 ft.
- d) Greater than 3,000 ft.

13. Which of the following does not specifically require a site visit when it occurs?
- a) Placement of materials late in construction
 - b) Excavation of tunnels and borrow areas
 - c) Observation of different field conditions
 - d) Excavation of cutoff trenches

CHAPTER 5 – FOUNDATION AND ABUTMENT PREPARATION

14. During foundation preparation, which of the following generally does not need to be removed?

- a) Rubbish fills
- b) Highly compressible soils
- c) Organic materials
- d) Organic-stained soils

15. For shale foundations, when should the last few feet of shale be removed?

- a) Just after the shale is allowed to swell
- b) Just prior to the shale being dried out
- c) Just before embankment fill placement
- d) Just after the shale is dried out

16. The absence of surface sinks can be accepted as proof that a foundation does not contain solution features?

- a) True
- b) False
- c) Not enough information for a specific answer
- d) Too many variables for a specific answer

17. Which of the following is not listed as a method for improving liquefiable foundation soil?

- a) In-situ vitrification
- b) Pressure-injected lime
- c) Chemical grouting
- d) Geogrid installation

CHAPTER 6 – SEEPAGE CONTROL

18. Which of the following is not listed as a method for seepage control in embankments?

- a) Collector pipes
- b) Embankment zonation
- c) Vertical/horizontal drains
- d) Flat slopes without drains

19. For embankment zonation, permeability should decrease from each slope in to the core?
- a) True
 - b) False
 - c) Not enough information for a specific answer
 - d) Too many variables for a specific answer
20. A slurry trench is normally located where?
- a) Under or near the downstream toe of the dam
 - b) Directly under the center of the dam
 - c) Under or near the upstream toe of the dam
 - d) Well past the downstream toe of the dam
21. Concrete cutoff walls should be used where strong earthquake shocks are likely?
- a) True
 - b) False
 - c) Not enough information for a specific answer
 - d) Too many variables for a specific answer
22. In no instance should the inside diameter of a relief well be less than what?
- a) 9 inches
 - b) 12 inches
 - c) 6 inches
 - d) 3 inches
23. The minimum size cross section recommended for galleries and access shafts is what?
- a) 7 ft. x 7 ft.
 - b) 5 ft. x 5 ft.
 - c) 6 ft. x 6 ft.
 - d) 8 ft. x 8 ft.
24. Concrete plugs used as backfill in rock cuts should be what length?
- a) 25 ft. maximum
 - b) At least 50 ft.
 - c) 50 ft. maximum
 - d) At least 25 ft.
25. To prevent blocking by debris, wall outlets should be how far above the floor?
- a) 36 inches
 - b) 24 inches
 - c) 12 inches
 - d) 6 inches



Answer Sheet for Earth and Rockfill Dams Part 1
 TPDH-00025

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Please completely fill in one box for each answer

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