

**GEOGRAPHIC INFORMATION SYSTEMS
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***** EXAMINATION *****

STRUCTURAL DESIGN OF CONCRETE-LINED FLOOD CONTROL CHANNELS

1. **The majority of concrete-lined flood control channels are:**
 - a) trapezoidal or rectangular
 - b) elliptical
 - c) circular
 - d) None of the above

2. **The design of flood control channels may include:**
 - a) hydrologic engineers
 - b) geotechnical engineers
 - c) environmental engineers
 - d) All of the above

3. **The most economical type channel is:**
 - a) circular
 - b) rectangular
 - c) trapezoidal
 - d) elliptical

4. **A rectangular channel is superior to a trapezoidal channel when:**
 - a) the flood flow is constant
 - b) the right-of-way width is limited
 - c) the channel is not curved
 - d) All of the above

5. **Safety provisions in the design of flood channels may include:**
 - a) sidewalks
 - b) fencing
 - c) multiple gates
 - d) None of the above

6. **The most expensive cost of erosion protection is:**
 - a) reinforced concrete paving
 - b) sod
 - c) hyacinths
 - d) riprap

7. **A geophysical site condition affecting a flood control channel is:**
 - a) subsidence potential
 - b) depth of frost penetration
 - c) ground water level
 - d) All of the above

8. **Thicker concrete channel linings are required by the presence of:**
 - a) salts
 - b) sulfates
 - c) industrial wastes
 - d) All of the above

9. **Waterstops should be installed in joints of concrete sections when:**
 - a) flows need to be regulated
 - b) when acids are present in industrial waste flows
 - c) water tightness is desired.
 - d) All of the above

10. **Joints with appreciable movements require:**
 - a) plastic waterstops
 - b) rubber waterstops
 - c) glass waterstops
 - d) None of the above

11. **A joint sealant should be:**
 - a) multi-component
 - b) high viscosity
 - c) nonflammable
 - d) All of the above

12. **The magnitude of hydrostatic pressures may be reduced by:**
 - a) installing drainage systems
 - b) providing vents
 - c) lubricants
 - d) All of the above

13. **Wind loads on walls are:**
 - a) greater during the actual flood
 - b) usually negligible
 - c) significant for higher altitudes
 - d) None of the above

14. **The thickness of the top of walls greater than 8 feet in height shall be:**
 - a) at least six inches
 - b) at least eight inches
 - c) at least ten inches
 - d) at least twelve inches

15. **The rule for the location of joints is:**
- a) one joint every four feet
 - b) one joint every six feet
 - c) one joint every eight feet
 - d) not exact
16. **Channel flows during construction should be controlled by:**
- a) diversion
 - b) pumping
 - c) phasing of the construction
 - d) Any of the above
17. **Weep holes for open drainage systems are commonly placed:**
- a) three feet apart
 - b) six feet apart
 - c) ten feet apart
 - d) fifteen feet apart
18. **Closed drainage systems consist of:**
- a) drainage blankets
 - b) ramps
 - c) walls
 - d) None of the above
19. **Concrete strength for continuously reinforced paving should have:**
- a) a compressive strength of 1000 psi
 - b) a compressive strength of 3000 psi
 - c) a compressive strength of 5000 psi
 - d) a compressive strength of 8000 psi
20. **Pilot channel paving carrying scouring materials should be:**
- a) at least 6 inches thick
 - b) at least 8 inches thick
 - c) at least 10 inches thick
 - d) at least 12 inches thick

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*** ANSWER SHEET *** U119 STRUCTURAL DESIGN OF CONCRETE-LINED FLOOD CONTROL CHANNELS	<u>STATE BOARD</u>	<u>COURSE NO.</u>	<u>VALUE</u>
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