



[Visit Suncam.com for more courses](http://www.suncam.com)

Continuing Education Course #091
Geothermal Boreholes

1. Which is not a design software program?
 - a. GeoAnalyst
 - b. WriteSoft
 - c. GHEX Borehole
 - d. GeoDesigner

2. Select the material with the lowest K value.
 - a. Portland Cement
 - b. Ice
 - c. Glass
 - d. Asphalt

3. Select the material with the highest K value.
 - a. Loam
 - b. Saturated Silt or Clay
 - c. Clay
 - d. Dry sand or gravel

4. Select the worse rock type for borehole K value.
 - a. Granite
 - b. Gneiss
 - c. Schist
 - d. Basalt

5. What is a reasonable K value for average bedrock?
 - a. 0.5
 - b. 1.5
 - c. 2.5
 - d. 3.5

6. Not a source of rock data
 - a. Thermal conductivity testing
 - b. Maps
 - c. Drillers logs
 - d. Soil above the rock formation

7. Thermal conductivity test duration
 - a. 2 hrs.
 - b. ½ day

- c. 2 days
- d. 2 weeks

8. Factor not affecting Borehole Design Length

- a. Efficient Building BTUs
- b. Borehole Thermal Resistance
- c. Temperature of Ground minus Temp Loop Water
- d. Rig Accessibility

9. A reasonable total borehole Length for 5 tons heating capacity up north

- a. 500'
- b. 750'
- c. 1000'
- d. 1250'

10. Unsuitable separation distance between boreholes

- a. 5'
- b. 15'
- c. 20'
- d. 25'

11. Not an input parameter for software programs

- a. Design heating/cooling loads
- b. Loop pipe type & size
- c. Heat Pump type/COP
- d. Flow Center Specs

12. Factor addressing possible load imbalances

- a. NAGLL
- b. NNAGL
- c. NGANL
- d. NANGLE

13. Total pipe uncoil footage ordered for a 400' deep borehole

- a. 400'
- b. 405'
- c. 800'
- d. 810'

14. Suitable Pressure for HDPE testing

- a. 10 psi
- b. 50 psi
- c. 200 psi
- d. 300 psi

15. Spacing of geo clips

- a. 10' o.c.
- b. 25' o.c.
- c. 50' o.c.
- d. 100' o.c.

16. Suitable permanent casing material

- a. Steel
- b. PVC plastic
- c. HDPE
- d. PEX pipe

17. Three bags of silica mixed with one of grout shown. K =

- a. 0.4
- b. 0.79
- c. 1.0
- d. 1.2

18. Socket fusion temperature

- a. 300°F
- b. 400°F
- c. 500°F
- d. 600°F

19. Wire Material in electric based heat coupling

- a. Steel
- b. Brass
- c. Iron
- d. Copper

NOTE: The following question was revised on 26 June 2018

20. Triton Electrofusion Welding uses:

- a. Special Glue bonds
- b. Three processes at once.
- c. Radio Frequency
- d. None of the above

21. Standard Manifold Name

- a. Reverse-Return
- b. Axis Balanced
- c. Coaxial
- d. Series

22. Not a Flow Center Manufacturer

- a. Grundfos
- b. Wilo
- c. Bell & Gossett
- d. Carrier

23. Number of Link Seals to cover 2" HDPE

- a. 4
- b. 5
- c. 6
- d. 7

24. Diameter in inches of buried marker

- a. 4
- b. 5
- c. 6
- d. 7

25. Geothermal heating and cooling was installed at Liberty Island's:

- a. Observation Deck
- b. Pedestal Base,
- c. Retail Pavilion
- d. Ferry Terminal

[Purchase this course on Suncam.com](http://Suncam.com)