

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

**\*\*\* SURVEY MARKERS AND MONUMENTATIONS \*\*\***

1. **A survey monumentation comprehensive plan shall include:**
  - a) acquisition
  - b) design
  - c) construction
  - d) All of the above.
  
2. **Permanent monuments are set:**
  - a) in stable material or a structure
  - b) on fire hydrants
  - c) on a concrete pavement
  - d) All of the above.
  
3. **Temporary markers are required for:**
  - a) the life of the project
  - b) 2 years or less
  - c) 5 years or less
  - d) None of the above
  
4. **Markers set on structures less than 5 years old are considered:**
  - a) permanent
  - b) stable
  - c) temporary
  - d) None of the above.
  
5. **The right to set a monument on private property should be**
  - a) obtained by verbal permission
  - b) obtained by condemnation
  - c) obtained by land entry permitting
  - d) obtained by the Federal government contracting office.
  
6. **Private owners permitting monuments to set on their land should:**
  - a) understand the purpose of the monument
  - b) understand the replacement cost of the monument
  - c) understand the need for stability of the monument
  - d) All of the above

7. **The security of the monument will be increased by setting the**
- a) monument in the centerline of the future highway construction
  - b) monument in the centerline of a proposed ditch.
  - c) monument in the centerline of a proposed pipeline.
  - d) None of the above.
8. **The best location of a monument will be:**
- a) a flood plain
  - b) river bank
  - c) property fence line
  - d) edge of a road
9. **The crest of a hill is a good location for a monument because:**
- a) there is no slope instability.
  - b) the frost heave is more likely at the crest
  - c) the soil is more inconsistent.
  - d) None of the above.
10. **The angle of visibility above the horizon for GPS monuments is:**
- a) 5 degrees
  - b) 15 degrees
  - c) 25 degrees
  - d) 40 degrees
11. **The maximum depth of frost in northern Nebraska is:**
- a) 1.00 meter
  - b) 1.25 meters
  - c) 1.50 meters
  - d) 1.75 meters
12. **The maximum depth of frost in northern Ohio is:**
- a) 1.00 meter
  - b) 1.25 meters
  - c) 1.50 meters
  - d) 1.75 meters
13. **The maximum depth of frost in northern Alabama is:**
- a) 0.10 meter
  - b) 0.25 meters
  - c) 0.50 meters
  - d) 0.75 meters
14. **The name of a bench mark should not exceed:**
- a) 15 characters
  - b) 20 characters
  - c) 25 characters
  - d) 30 characters

15. **Commas are not allowed in bench mark names because:**
- a) they may be confused with a period.
  - b) they are always difficult to stamp on the disk.
  - c) Both a and b
  - d) Neither a nor b
16. **All alpha and numeric character groupings in a name are**
- a) separated by a hyphen
  - b) separated by a slash
  - c) separated by a period
  - d) separated by a blank
17. **When may the elevation of a bench mark be stamped on the disk?**
- a) Never
  - b) Sometimes
  - c) Always
  - d) Depends on the project
18. **Multiple names on a bench mark are separated by:**
- a) a hyphen
  - b) a blank space
  - c) an equal sign
  - d) a period
19. **A witness post is:**
- a) 4 feet long
  - b) 6 feet long
  - c) 8 feet long
  - d) Any of the above.
20. **A horizontal monument may be a:**
- a) flagpole
  - b) church spire
  - c) concrete monument
  - d) All of the above
21. **An acceptable stamping on a temporary bench mark is:**
- a) POST OAK TBM
  - b) 123 TBM
  - c) TBM 435
  - d) NO. 435 TBM
22. **An acceptable stamping on a temporary bench mark is:**
- a) POST TBM (OAK)
  - b) No. 123 TBM
  - c) TBM 435 A
  - d) NO. 435 tbn

23. **An acceptable stamping on a vertical control point is:**
- a) BM 234.44
  - b) VBM 125.33
  - c) STA BM 188.33
  - d) BM
24. **A vertical control point may be a:**
- a) bench mark
  - b) tidal station
  - c) water level station
  - d) All of the above
25. **An acceptable stamping on a bench mark is:**
- a) BM 123.93
  - b) BM PAYNE
  - c) BM 6893.44 HIGHEST POINT ON ROOSEVELT PEAK
  - d) BM TEMPORARY BENCH MARK FOR JONES PARK
26. **An acceptable stamping on a bench mark is:**
- a) BM WELLS POINT-CR2
  - b) BM WELLS POINT COUNTY ROUTE 2
  - c) BM PROJECT JONES 2314.55 V
  - d) X=565.33 Y=235.11 Z=183.98
27. **An acceptable stamping on a bench mark is:**
- a) JONES-PAYNE
  - b) JONES/PAYNE
  - c) JONES=PAYNE
  - d) JONES PAYNE
28. **An acceptable stamping on a bench mark is:**
- a) BM JONES L1
  - b) BM JONES/L1 1283.33
  - c) BM JONES\*L1
  - d) BM JONES#L1
29. **An acceptable stamping on a bench mark is:**
- a) BM JONES@L1
  - b) BM JONES-L1
  - c) BM JONES^L1
  - d) BM JONES\*L1
30. **An acceptable stamping on a bench mark is:**
- a) BM JONES@L1
  - b) BM JONES+L1
  - c) BM JONES & L1
  - d) BM JONES & L1 147.88

31. **An acceptable stamping on a bench mark is:**
- a) BM NO. L1
  - b) BM #L1
  - c) BM NO L1
  - d) BM 120
32. **An acceptable stamping on a bench mark is:**
- a) BM NAIL
  - b) BM RR SPIKE
  - c) BM T A1
  - d) BM BOLT
33. **A bench mark name may include the word:**
- a) MOUNTAIN
  - b) SPIKE
  - c) FIRE HYDRANT
  - d) TOP OF CURB
34. **A bench mark name may include the words:**
- a) PINE GULCH
  - b) RR SPIKE
  - c) BUFFALO BOX
  - d) CURB CUT
35. **A bench mark name may include the words:**
- a) ABC SURVEYING 23
  - b) JONES ASSOCIATES #14
  - c) AAA SURVEY 18
  - d) SURVEY MARKER 44
36. **A bench mark name may include the words:**
- a) TOP OF HYDRANT
  - b) 60 PENNY SPIKE
  - c) SURVEY 23 ACC
  - d) JJ SURVEYS 111
37. **A horizontal recovery control station form using NAD83 datum**
- a) will show the UTM zone
  - b) will show the State plane coordinate zone
  - c) will show the UTM and state plane coordinate zones
  - d) will show no zones
38. **A horizontal recovery control station form includes:**
- a) information from the field only
  - b) information from the office only
  - c) information from both the field and the office
  - d) calculated information only

39. **A horizontal control monument should be referenced to:**
- a) two permanent marks
  - b) three permanent marks
  - c) four permanent marks
  - d) five permanent marks
40. **When replacing a horizontal control monument, the disk shall be:**
- a) stamped with the same name followed by a 2 and the new date
  - b) stamped with the same name
  - c) stamped with the new date
  - d) stamped with a new name
41. **When locating the references for a horizontal control monument,**
- a) at least 2 references should be features shown in an aerial photo
  - b) at least 2 references should be in pavement
  - c) at least 2 references should be in a sidewalk
  - d) at least 2 references should be to a fence line
42. **Monument/marker documentation includes the nearest:**
- a) steeple
  - b) city or town
  - c) building
  - d) ties to a section corner
43. **Monument/marker documentation includes the order of accuracy**
- a) for vertical only
  - b) for horizontal only
  - c) for vertical and horizontal
  - d) does not include order of accuracy on the form
44. **Monument/marker documentation includes:**
- a) the nearest road
  - b) the latitude
  - c) the longitude
  - d) All of the above
45. **The accuracy standards of bench marks have been established**
- a) by the NGS
  - b) by the BLM
  - c) by the USFS
  - d) by the Department of Energy
46. **The stability of monuments affect:**
- a) the accuracy of survey projects
  - b) the frequency of tidal movements
  - c) the location of earthquakes
  - d) None of the above

47. **A BM having elevation of 800.00 feet and later subsided 0.4 feet:**
- a) would make the true elevation of a house 0.4' higher than measured
  - b) would make the true elevation of a house 0.4' lower than measured
  - c) would not change the true elevation of a house measured from the BM
  - d) None of the above
48. **A source of thawing includes:**
- a) buildings
  - b) roads
  - c) pipelines
  - d) All of the above
49. **The corrosive character of the soil is measured by checking:**
- a) the alkalinity of the soil
  - b) the acidity of the soil
  - c) the resistivity of the soil
  - d) Any of the above
50. **An area to be avoided for placing monuments contains:**
- a) iron
  - b) chlorides
  - c) phosphates
  - d) nitrates
51. **Monumentation sites for GPS:**
- a) should be on level ground
  - b) should be on mountain tops
  - c) should have satellite visibility
  - d) None of the above
52. **Oil fields are poor locations for monuments because:**
- a) subsidence
  - b) acidic soil conditions
  - c) alkaline soil conditions
  - d) high soil resistivity
53. **BM 23 / A14 \* 243 is an improper monument marking because:**
- a) the special character / is not allowed
  - b) the special character \* is not allowed
  - c) the name is too long
  - d) no more than one name is allowed per disk
54. **BM RR SPIKE is an improper monument marking because:**
- a) RR or SPIKE is acceptable but not both words
  - b) no elevation is marked
  - c) it is unknown whether it is for horizontal or vertical control
  - d) non-specific descriptive terms are not allowed

55. **BM Paynell Gulch Northwest is an improper monument marking because:**
- a) the name exceeds 25 alphanumeric characters
  - b) numbers are not allowed
  - c) more than two names are not allowed
  - d) names have to be separated by a hyphen
56. **BM 455 CINCO RANCH NO. 5 is an improper monument marking because:**
- a) NO or NO. is an unacceptable abbreviation for the word number
  - b) numbers are not allowed
  - c) more than two names are not allowed
  - d) names have to be separated by a hyphen
57. **BM CINCO CHISELED X is an improper monument marking because:**
- a) numbers are not allowed
  - b) more than two names are not allowed
  - c) non-specific descriptive terms such as chiseled X are not allowed
  - d) names have to be separated by a hyphen
58. **455 CINCO 5 BENCH MARK is an improper monument marking because:**
- a) numbers are not allowed
  - b) more than two names are not allowed
  - c) non-specific descriptive terms are not allowed
  - d) names have to be separated by a hyphen
59. **A good location for a bench mark is:**
- a) along a property fence line
  - b) near a utility pole
  - c) in a cemetery
  - d) Any of the above
60. **The following area is not recommended for a bench mark:**
- a) along side of a pond
  - b) along side of a river
  - c) along side of a reservoir
  - d) None of the above is recommended.

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