

***** EXAMINATION *****

CONSTRUCTION LAYOUT NO. 1 * VERTICAL CURVES**

1. **The elevation on the tangent at 1+00 is:**

- a) 177.20 feet
- b) 186.00 feet
- c) 188.00 feet
- d) 190.10 feet

2. **The elevation on the curve at 1+00 is:**

- a) 177.20 feet
- b) 186.20 feet
- c) 188.00 feet
- d) 189.88 feet

3. **The elevation on the tangent at 2+00 is:**

- a) 188.20 feet
- b) 191.00 feet
- c) 191.20 feet
- d) 191.50 feet

4. **The elevation on the curve at 2+00 is:**

- a) 188.20 feet
- b) 191.00 feet
- c) 191.20 feet
- d) 191.50 feet

5. **The elevation on the tangent at 3+00 is:**

- a) 193.67 feet
- b) 194.00 feet
- c) 194.20 feet
- d) 194.40 feet

6. **The elevation on the curve at 3+00 is:**

- a) 193.67 feet
- b) 194.00 feet
- c) 194.20 feet
- d) 194.40 feet

7. **The elevation on the tangent at 4+00 is:**
- a) 194.20 feet
 - b) 195.67 feet
 - c) 197.00 feet
 - d) 198.00 feet
8. **The elevation on the curve at 4+00 is:**
- a) 194.20 feet
 - b) 195.67 feet
 - c) 197.00 feet
 - d) 198.00 feet
9. **The elevation on the tangent at 5+00 is:**
- a) 193.67 feet
 - b) 194.00 feet
 - c) 195.67 feet
 - d) 200.00 feet
10. **The elevation on the curve at 5+00 is:**
- a) 193.67 feet
 - b) 194.00 feet
 - c) 195.67 feet
 - d) 197.00 feet
11. **The elevation on the tangent at 6+00 is:**
- a) 197.00 feet
 - b) 197.67 feet
 - c) 199.00 feet
 - d) 199.33 feet
12. **The elevation on the curve at 6+00 is:**
- a) 197.00 feet
 - b) 197.67 feet
 - c) 199.00 feet
 - d) 199.33 feet
13. **The elevation on the tangent at 7+00 is:**
- a) 197.67 feet
 - b) 197.75 feet
 - c) 198.00 feet
 - d) 198.25 feet
14. **The elevation on the curve at 7+00 is:**
- a) 197.67 feet
 - b) 197.75 feet
 - c) 198.00 feet
 - d) 198.25 feet

15. **The elevation on the tangent at 8+00 is:**

- a) 196.00 feet
- b) 197.00 feet
- c) 198.00 feet
- d) 198.33 feet

16. **The elevation on the curve at 8+00 is:**

- a) 196.00 feet
- b) 197.00 feet
- c) 198.00 feet
- d) 198.33 feet

17. **The elevation on the tangent at 9+00 is:**

- a) 196.00 feet
- b) 197.00 feet
- c) 198.00 feet
- d) 198.33 feet

18. **The elevation on the curve at 9+00 is:**

- a) 196.00 feet
- b) 197.00 feet
- c) 198.00 feet
- d) 198.33 feet

19. **The station of the high / low point is:**

- a) 6+33
- b) 6+50
- c) 7+33
- d) 7+50

20. **The elevation of the high / low point is:**

- a) 197.67 feet
- b) 197.75 feet
- c) 198.12 feet
- d) 198.25 feet

21. **The elevation on the tangent at 1+00 is:**

- a) 260.00 feet
- b) 262.00 feet
- c) 264.00 feet
- d) 266.00 feet

22. **The elevation on the curve at 1+00 is:**

- a) 260.00 feet
- b) 262.00 feet
- c) 264.00 feet
- d) 266.00 feet

23. **The elevation on the tangent at 2+00 is:**

- a) 262.00 feet
- b) 263.69 feet
- c) 264.00 feet
- d) 266.00 feet

24. **The elevation on the curve at 2+00 is:**

- a) 262.00 feet
- b) 263.69 feet
- c) 264.00 feet
- d) 266.00 feet

25. **The elevation on the tangent at 3+00 is:**

- a) 264.75 feet
- b) 265.19 feet
- c) 266.00 feet
- d) 268.00 feet

26. **The elevation on the curve at 3+00 is:**

- a) 264.75 feet
- b) 265.19 feet
- c) 266.00 feet
- d) 266.12 feet

27. **The elevation on the tangent at 4+00 is:**

- a) 264.75 feet
- b) 265.19 feet
- c) 266.00 feet
- d) 268.00 feet

28. **The elevation on the curve at 4+00 is:**

- a) 264.75 feet
- b) 265.19 feet
- c) 266.00 feet
- d) 268.00 feet

29. **The elevation on the tangent at 5+00 is:**

- a) 265.00 feet
- b) 265.20 feet
- c) 268.00 feet
- d) 270.00 feet

30. **The elevation on the curve at 5+00 is:**

- a) 265.00 feet
- b) 265.20 feet
- c) 268.00 feet
- d) 270.00 feet

31. **The elevation on the tangent at 6+00 is:**

- a) 264.19 feet
- b) 265.00 feet
- c) 267.00 feet
- d) 270.00 feet

32. **The elevation on the curve at 6+00 is:**

- a) 264.19 feet
- b) 265.00 feet
- c) 267.00 feet
- d) 270.00 feet

33. **The elevation on the tangent at 7+00 is:**

- a) 262.75 feet
- b) 264.00 feet
- c) 264.19 feet
- d) 267.00 feet

34. **The elevation on the curve at 7+00 is:**

- a) 262.75 feet
- b) 264.00 feet
- c) 264.19 feet
- d) 267.00 feet

35. **The elevation on the tangent at 8+00 is:**

- a) 258.00 feet
- b) 259.00 feet
- c) 260.00 feet
- d) 261.00 feet

36. **The elevation on the curve at 8+00 is:**

- a) 258.00 feet
- b) 259.00 feet
- c) 260.69 feet
- d) 261.00 feet

37. **The elevation on the tangent at 9+00 is:**

- a) 258.00 feet
- b) 259.00 feet
- c) 260.00 feet
- d) 261.00 feet

38. **The elevation on the curve at 9+00 is:**

- a) 258.00 feet
- b) 259.00 feet
- c) 260.00 feet
- d) 261.00 feet

39. **The station of the high / low point is:**
- a) 4+20
 - b) 5+00
 - c) 5+20
 - d) 5+33
40. **The elevation of the high / low point is:**
- a) 264.19 feet
 - b) 265.00 feet
 - c) 265.15 feet
 - d) 265.20 feet
41. **The elevation on the tangent at 1+00 is:**
- a) 370.00 feet
 - b) 372.00 feet
 - c) 374.00 feet
 - d) 376.00 feet
42. **The elevation on the curve at 1+00 is:**
- a) 370.00 feet
 - b) 370.12 feet
 - c) 372.00 feet
 - d) 372.24 feet
43. **The elevation on the tangent at 2+00 is:**
- a) 372.00 feet
 - b) 372.24 feet
 - c) 373.62 feet
 - d) 374.00 feet
44. **The elevation on the curve at 2+00 is:**
- a) 372.00 feet
 - b) 372.24 feet
 - c) 373.62 feet
 - d) 374.00 feet
45. **The elevation on the tangent at 3+00 is:**
- a) 374.50 feet
 - b) 374.62 feet
 - c) 376.00 feet
 - d) 376.44 feet
46. **The elevation on the curve at 3+00 is:**
- a) 374.50 feet
 - b) 374.62 feet
 - c) 376.00 feet
 - d) 376.22 feet

47. **The elevation on the tangent at 4+00 is:**

- a) 374.62 feet
- b) 374.67 feet
- c) 378.00 feet
- d) 379.00 feet

48. **The elevation on the curve at 4+00 is:**

- a) 374.62 feet
- b) 378.00 feet
- c) 378.44 feet
- d) 378.88 feet

49. **The elevation on the tangent at 5+00 is:**

- a) 372.00 feet
- b) 374.00 feet
- c) 376.00 feet
- d) 380.00 feet

50. **The elevation on the curve at 5+00 is:**

- a) 374.00 feet
- b) 374.20 feet
- c) 374.80 feet
- d) 374.90 feet

51. **The elevation on the tangent at 6+00 is:**

- a) 372.62 feet
- b) 376.00 feet
- c) 376.52 feet
- d) 378.12 feet

52. **The elevation on the curve at 6+00 is:**

- a) 370.00 feet
- b) 372.62 feet
- c) 374.00 feet
- d) 375.00 feet

53. **The elevation on the tangent at 7+00 is:**

- a) 370.50 feet
- b) 372.00 feet
- c) 374.00 feet
- d) 375.00 feet

54. **The elevation on the curve at 7+00 is:**

- a) 370.00 feet
- b) 370.50 feet
- c) 371.19 feet
- d) 372.00 feet

55. **The elevation on the tangent at 8+00 is:**
- a) 367.62 feet
 - b) 368.00 feet
 - c) 369.00 feet
 - d) 369.44 feet
56. **The elevation on the curve at 8+00 is:**
- a) 365.00 feet
 - b) 365.50 feet
 - c) 366.44 feet
 - d) 367.62 feet
57. **The elevation on the tangent at 9+00 is:**
- a) 363.00 feet
 - b) 364.00 feet
 - c) 365.00 feet
 - d) 366.00 feet
58. **The elevation on the curve at 9+00 is:**
- a) 363.00 feet
 - b) 364.00 feet
 - c) 365.00 feet
 - d) 366.00 feet
59. **The station of the high / low point is:**
- a) 3+50
 - b) 3+67
 - c) 6+20
 - d) 6+33
60. **The elevation of the high / low point is:**
- a) 374.50 feet
 - b) 374.67 feet
 - c) 374.88 feet
 - d) 374.98 feet
61. **The tangent offset at the beginning of the curve is:**
- a) $(g_2 - g_1) / L$
 - b) $(g_1 - g_2) / L$
 - c) zero.
 - d) greater than the tangent offset at the PVI.
62. **The tangent offset at the end of the curve is:**
- a) $(g_2 - g_1) / L$
 - b) $(g_1 - g_2) / L$
 - c) zero.
 - d) greater than the tangent offset at the PVI.

63. **The maximum tangent offset is always at:**
- a) the PVI.
 - b) the PVC.
 - c) the EVC.
 - d) the high or low point.
64. **If the rate of change in grade is negative:**
- a) the vertical curve has a high point.
 - b) the vertical curve has a low point.
 - c) may have a high or low point.
 - d) None of the above.
65. **The station of the high or low point of the curve equals:**
- a) $-g_1 * L / (g_2 - g_1) + \text{Sta. PVC}$
 - b) $-g_2 / r + \text{Sta. PVC}$
 - c) $(g_2 - g_1) / L + \text{Sta. PVC}$
 - d) None of the above.
66. **The tangent offset at the PVI is:**
- a) $L * (g_2 - g_1) / 8$
 - b) $(g_2 - g_1) / L$
 - c) $(g_1 - g_2) / L$
 - d) None of the above.
67. **The rate of change equals:**
- a) $-g_1/r$
 - b) $-g_2/r$
 - c) $(g_2 - g_1)/L$
 - d) None of the above.
68. **A vertical curve is:**
- a) parabolic.
 - b) circular.
 - c) a spline.
 - d) may be any of the above.

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