

ANSWER KEY

Chapter 1 INTRODUCTION TO WATER COLLECTION

1. overpumping fresh water	8. 4	15. pathogenic organisms	22. 4
2. 3	9. 2	16. industrial	23. 3
3. 1	10. 4	17. 2	24. 3
4. 2	11. 2	18. 2	25. 4
5. 2	12. 3	19. 4	
6. 4	13. entrance to the distribution system	20. 4	
7. 3	14. source water, flocculation effluent, sedimentation effluent, filter effluent	21. 3	

Chapter 2 SOURCE WATER, RESERVOIR MANAGEMENT, AND INTAKE STRUCTURES

1. B	9. F	17. 1	25. 1
2. I	10. J	18. 2	26. 3
3. H	11. 2	19. 1	27. 4
4. E	12. 3	20. 2	28. 3
5. C	13. 2	21. 3	29. 2
6. D	14. 4	22. 4	30. 1
7. G	15. 2	23. 3	
8. A	16. 3	24. 4	

Chapter 3 COAGULATION AND FLOCCULATION

1. 4	8. 1	15. 4	22. 3
2. 1	9. 1	16. 2	23. 4
3. 2	10. 1	17. 3	24. 3
4. 4	11. 2	18. 3	25. 1
5. 1	12. 2	19. 1	
6. 1	13. 2	20. 2	
7. 4	14. 1	21. 3	

Chapter 4 SEDIMENTATION

1. 4	8. 2	15. 2	22. 2
2. 3	9. 1	16. 3	23. 1
3. 4	10. 1	17. sedimentation	24. representative
4. 1	11. solids-contact process units	18. 4	25. 2
5. 3	12. coagulant aid	19. 4	
6. 2	13. 3	20. 3	
7. 1	14. 3	21. 2	

Chapter 5 FILTRATION

1. C	8. B	15. 4	22. 1
2. G	9. H	16. 4	23. 4
3. D	10. I	17. 3	24. 1
4. E	11. 3	18. 2	25. 2
5. J	12. 1	19. 2	
6. F	13. 1	20. 1	
7. A	14. 1	21. 2	

Chapter 6 DISINFECTION

1. A	10. B	19. 3	28. safety aspects, health effects
2. F	11. disinfection, sterilization	20. dry, hydrochloric acid	29. 1
3. G	12. disinfectants, compounds	21. 1	30. checking UV monitors, cleaning the UV lamps
4. I	13. 1	22. 100°, 38°	31. 4
5. C	14. 2	23. ventilated air, chlorine	32. 2
6. D	15. carcinogenic compounds, ammonia, sulfide compounds, phenolic tastes and odors	24. continuous, water consumers	33. 2
7. E	16. 4	25. 1	34. 1
8. H	17. weaken it, start leaking	26. 3	35. 4
9. J	18. 4	27. technological difficulties, high energy costs	

Chapter 7 CORROSION CONTROL

1. E	9. F	17. slowing	25. 1
2. A	10. H	18. 3	26. reduce, inhibit, reversing
3. B	11. 2	19. 1	27. ferrous (iron) materials, concrete slab floors
4. G	12. chemical action	20. change, reduced	28. 4
5. D	13. algal growths, corrode	21. 3	29. lead, corrosion-control program
6. I	14. 1	22. 1	30. 1, 2, 3
7. J	15. 1	23. 1	
8. C	16. 4	24. 2	

Chapter 8 TASTE AND ODOR CONTROL

1. G	10. E	19. locate where in the system the problem originates	28. 3
2. B	11. significant	20. dead ends, low-flow zones, areas subject to wide flow variations or changes in supply source	29. 1
3. H	12. bottled drinking water, alternative water supplies	21. source water	30. 4
4. C	13. accelerate, worsen	22. standard jar test procedure	31. 1
5. F	14. night	23. 1	32. effective communications network
6. I	15. natural runoff	24. 3	33. recognize that a problem exists, determine the extent of the problem
7. D	16. 4	25. 4	34. 1
8. A	17. 3	26. objectionable byproducts of the reaction do not normally form	35. 4
9. J	18. inadequate or incomplete maintenance	27. testing the carbons	

Chapter 9 LABORATORY PROCEDURES

1. D	10. E	19. acid to water	28. 4
2. F	11. 16.6 °C, 71.6 °F	20. foam, carbon dioxide, or dry chemical extinguish- ers	29. 1
3. J	12. 5,000 mg, 0.250 L, 0.00005 g	21. 4	30. coliform bacteria
4. B	13. 4	22. acidic	31. 4
5. I	14. volumetric, graduated or Mohr, and serological	23. 4	32. mean = 14.3; median = 8; geometric mean = 8.4
6. G	15. meniscus	24. as soon as possible	33. representative sample
7. A	16. known	25. calcium carbonate (CaCO ₃) equivalents	34. 4
8. H	17. 3	26. calcium and magne- sium	35. 4
9. C	18. 2	27. 3	