

General Chemistry II Jasperse
 Chemical Equilibria. Extra Practice Problems

ANSWERS

1. E
2. C
3. D
4. E
5. B
6. D
7. A
8. B
9. C
10. D
11. $K = \frac{[\text{NH}_3]^2}{[\text{N}_2][\text{H}_2]^3}$
12. $K = \frac{[\text{H}_2\text{O}]^4[\text{CO}_2]^3}{[\text{C}_3\text{H}_8][\text{O}_2]^5}$
13. $K = \frac{[\text{O}_2]}{[\text{N}_2\text{O}_4][\text{O}_3]}$
14. C
15. D
16. $K = \frac{[\text{Ca}^{2+}]}{[\text{H}^+]^2}$
17. $K = \frac{[\text{NH}_3]^2}{[\text{CO}_2]}$
18. $K = 1/[\text{Cl}_2]^2$
19. D
20. B
21. A
22. D
23. E
24. C
25. 8.3×10^2
26. 0.016
27. 5.6×10^{-4}
28. C
29. 49
30. 8.9×10^{-3}
31. 6.25×10^{-6}
32. 2.19×10^{-4}
33. C
34. C
35. E
36. 3.2 mol, 1.6 mol, 0.8 mol
37. 0.37
38. $K = 0.0505$
39. $K = 20$

40. B
41. 1.6×10^{-4}
42. $[\text{H}^+] = [\text{A}^-] = 3.5 \times 10^{-3}$, $[\text{HA}] = 0.60$
43. $[\text{H}^+] = [\text{A}^-] = 3.9 \times 10^{-5}$, $[\text{HA}] = 0.30$
44. $[\text{H}^+] = [\text{A}^-] = 0.165$, $[\text{HA}] = 0.135$
 (quadratic required for 44)
45. $[\text{Br}_2] = [\text{Cl}_2] = 0.085$, $[\text{BrCl}] = 0.23$
46. $[\text{A}] = [\text{B}] = 0.500$, $[\text{C}] = 1.5 \times 10^{-4}$
47. C
48. B
49. C
50. B
51. B
52. A
- 53.

	$[\text{H}_2]$	$[\text{Br}_2]$	$[\text{HBr}]$	K
1	down	down	up	--
2	up	up	down	--
3	up	up	down	--
4	down	down	up	--
5	up	up	down	down
6	down	down	up	up
7	--	--	--	--

54.

	$[\text{NO}_2]$	$[\text{NO}]$	$[\text{O}_2]$	K
1	down	up	up	--
2	up	down	down	--
3	up	down	down	--
4	down	up	up	--
5	down	up	up	up
6	up	down	down	down
7	up	down	down	down
8	down	up	up	up

55. C
56. B,C,D
57. B
58. C
59. C
60. C