

ANSWER KEY

Chapter 13 Test Answer Key

BLM 13.5.1A

Answers to Multiple-Choice Questions

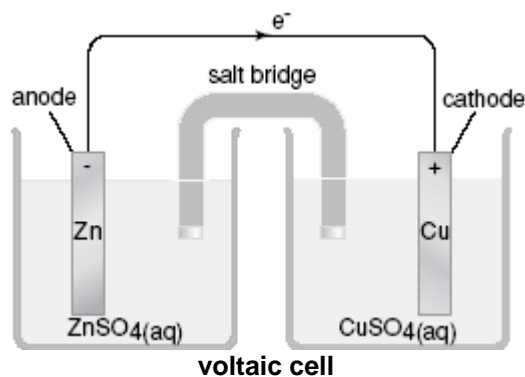
1. d
2. a
3. d
4. d
5. b
6. c
7. c
8. b
9. a
10. a
11. c
12. a
13. c
14. b
15. a

Answers to Numerical Response Questions

| | |
|-----|------------|
| 16. | 0.53 V |
| 17. | 61.2 min. |
| 18. | 2.67 L |
| 19. | 322 min |
| 20. | 7.00 min |
| 21. | 0.22 g |
| 22. | 69.5 g/mol |
| 23. | +2 |
| 24. | -1.26 V |

Answers to Written Response Questions

25. a) Functioning cell



| | | |
|------------|----------------------------|-------------|
| ANSWER KEY | Chapter 13 Test Answer Key | BLM 13.5.1A |
|------------|----------------------------|-------------|

$$b) \quad 50 \text{ mL} \times \frac{\cancel{\text{L}}}{1000 \text{ mL}} \times 1.0 \frac{\cancel{\text{mol}}}{\cancel{\text{L}}} \times 63.55 \frac{\text{g}}{\cancel{\text{mol}}} \text{Cu} = 3.18 \text{ g increase for Cu}$$

$$50 \text{ mL} \times \frac{\cancel{\text{L}}}{1000 \text{ mL}} \times 1.0 \frac{\cancel{\text{mol}}}{\cancel{\text{L}}} \times 65.39 \frac{\text{g}}{\cancel{\text{mol}}} \text{Zn} = 3.27 \text{ g increase for Zn}$$

26. a) The anode in an electroplating process is normally a high purity form of the metal to be plated. There are very few such nickel products. An inert electrode, such as platinum can be use with an aqueous solution of a nickel salt as the electrolyte.

b)

$$\frac{5.00 \cancel{\text{g Ni}}}{58.69 \frac{\cancel{\text{g}}}{\text{mol Ni}}} \times \frac{2 \cancel{\text{mol e}^-}}{\cancel{\text{mol Ni}}} \times \frac{9.65 \times 10^4 \text{ C}}{\cancel{\text{mol e}^-}} \times \frac{1}{10 \cancel{\text{min}} \times 60 \frac{\cancel{\text{s}}}{\cancel{\text{min}}}} = 27.4 \frac{\text{C}}{\text{s}} = 27.4 \text{ A}$$