

## LABORATORY EXERCISE 33 THE EAR AND HEARING

### Figure Labels

#### FIG. 33.1

- |                        |                                |
|------------------------|--------------------------------|
| 1. Auricle             | 7. Vestibulocochlear nerve     |
| 2. Malleus             | 8. Oval window                 |
| 3. Incus               | 9. Tympanic membrane (eardrum) |
| 4. Semicircular canals | 10. Auditory (eustachian) tube |
| 5. Stapes              | 11. External auditory meatus   |
| 6. Cochlea             |                                |

#### FIG. 33.2

- |   |   |   |
|---|---|---|
| 4 | 5 | 1 |
| 6 | 3 | 2 |

#### FIG. 33.3

- |                                |                             |
|--------------------------------|-----------------------------|
| 1. Tectorial membrane          | 3. Branch of cochlear nerve |
| 2. Hair cells (receptor cells) | 4. Basilar membrane         |



### Critical Thinking Application Answer

The largest ear structure is the auricle which is able to trap and funnel a minute sound wave into the middle and inner ear structures. This will allow a concentration of the vibrations making the sound detection more likely to occur.

### Laboratory Report Answers

#### PART A

- |      |      |       |       |
|------|------|-------|-------|
| 1. i | 5. k | 9. n  | 13. f |
| 2. l | 6. h | 10. j | 14. a |
| 3. d | 7. c | 11. o | 15. g |
| 4. m | 8. b | 12. e |       |

#### PART B (figure 33.7)

- |                                |                     |
|--------------------------------|---------------------|
| 1. Scala media (cochlear duct) | 4. Basilar membrane |
| 2. Tectorial membrane          | 5. Scala tympani    |
| 3. Hair cells (receptor cells) |                     |

#### PART C

- |                           |                           |
|---------------------------|---------------------------|
| 1. (experimental results) | 3. (experimental results) |
| 2. (experimental results) | 4. Answers will vary.     |

## LABORATORY EXERCISE 34 SENSE OF EQUILIBRIUM

### Laboratory Report Answers

#### **PART A**

1. utricle
2. temporal
3. macula
4. calcium carbonate
5. vestibulocochlear (vestibular branch)
6. ampulla
7. crista ampullaris
8. cupula
9. inertia
10. cerebellum

#### **PART B**

1.
  - a. The eyes, inner ears, and proprioceptors provide information needed to maintain equilibrium when the eyes are open.
  - b. The inner ears and proprioceptors provide such information when the eyes are closed.
2.
  - a. (experimental results)
  - b. Probably yes; this demonstrates the importance of visual information in maintaining equilibrium.
3.
  - a. (experimental results)
  - b. Answers will vary.
  - c. With the eyes closed, such a person would receive very little sensory information needed to maintain equilibrium.



### Critical Thinking Application Answer

Vision, touch, and proprioception would all supplement equilibrium.