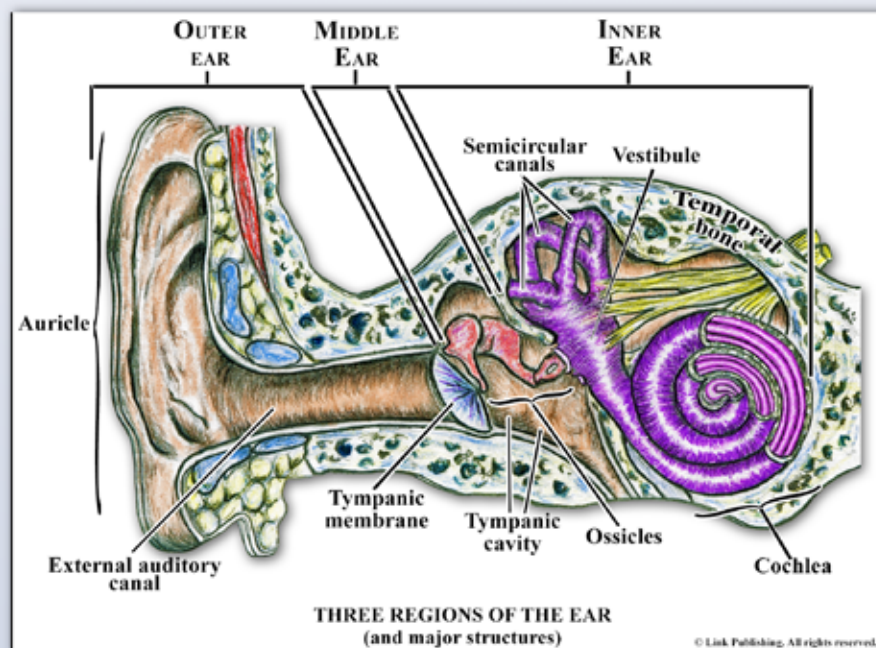


# ANATOMY AND PHYSIOLOGY TEXT and LABORATORY WORKBOOK

## CHAPTER 24 INTRODUCTION TO THE EAR AND HEARING



# TABLE OF CONTENTS

## HEARING AND BALANCE

|   |           |
|---|-----------|
| <b>STRUCTURE OF THE EAR</b> .....   | <b>4</b>  |
| Lab Activity 1 - Observation of Ear Model .....                                     | 4         |
| Learning Outcomes Review Questions .....  | 6         |
| Practice Test 1 - GENERAL STRUCTURE OF THE EAR .....                                | 6         |
| <b>OUTER EAR</b> .....  | <b>7</b>  |
| Tympanic membrane (eardrum) .....   | 7         |
| <b>MIDDLE EAR</b> .....   | <b>7</b>  |
| Ossicles .....  | 7         |
| Lab Activity 2 - Observation of Ossicles .....                                      | 8         |
| Learning Outcomes Review Questions .....  | 8         |
| Practice Test 2 - OUTER EAR, MIDDLE EAR, AND OSSICLES .....                         | 9         |
| Practice Test 3 - TERMINOLOGY - OUTER EAR .....                                     | 9         |
| <b>Practice Test 4</b> TERMINOLOGY - MIDDLE EAR .....                               | 9         |
| <b>INNER EAR</b> .....  | <b>10</b> |
| Learning Outcomes Review Questions .....  | 12        |
| INNER EAR .....   | 12        |
| <b>COCHLEA</b> .....  | <b>13</b> |
| Learning Outcomes Review Questions .....  | 14        |
| Practice Test 6 - COCHLEA - INTRODUCTION .....                                      | 14        |
| <b>VESTIBULE</b> .....  | <b>15</b> |
| Learning Outcomes Review Questions .....  | 16        |
| Practice Test 7 - VESTIBULE .....   | 16        |
| <b>SEMICIRCULAR CANALS</b> .....  | <b>17</b> |
| Learning Outcomes Review Questions .....  | 18        |
| Practice Test 8 - SEMICIRCULAR CANALS .....   | 18        |
| <b>COCHLEA</b> .....  | <b>19</b> |
| Lab Activity 3 - Observation of Cochlea, Slide Preparation .....                    | 19        |
| Practice Test 9 - COCHLEA - HISTOLOGY AND FUNCTIONS .....                           | 25        |
| Practice Test 10 - TERMINOLOGY = INNER EAR .....                                    | 25        |
| <b>MECHANISM OF HEARING</b> .....   | <b>26</b> |
| Sound .....   | 26        |
| Frequency .....   | 26        |
| Amplitude .....   | 26        |
| Learning Outcomes Review Questions .....  | 28        |
| Practice Test 11 - Sound and MECHANISM OF HEARING .....                             | 28        |
| <b>PATHWAYS OF SOUND CONDUCTION</b> .....   | <b>29</b> |
| Sound Conduction to the Cochlea .....   | 29        |
| Learning Outcomes Review Questions .....  | 30        |
| <b>COCHLEAR NERVE AND NEURAL CONDUCTION TO THE BRAIN</b> .....                      | <b>31</b> |
| Learning Outcomes Review Questions .....  | 32        |
| Practice Test 12 - PATHWAY OF SOUND CONDUCTION AND NEURAL CONDUCTION TO BRAIN ..... | 32        |
| <b>HEARING TESTS</b> .....  | <b>33</b> |
| Conduction deafness .....   | 33        |
| Sensorineural deafness .....  | 33        |
| Weber's and Rinne's tests .....   | 33        |
| Lab Activity 4 - Weber's Test .....   | 33        |
| Lab Activity 5 - Rinne's Test .....   | 33        |
| Learning Outcomes Review Questions .....  | 34        |
| Practice Test 13 - HEARING TESTS .....  | 34        |

|  |           |
|--|-----------|
| <b>EQUILIBRIUM</b>   | <b>35</b> |
| Vestibule  | 35        |
| Maculae  | 35        |
| Semicircular canals  | 37        |
| Lab Activity 6 - Crista ampullaris, Slide Preparation              | 38        |
| Learning Outcomes Review Questions                                 | 40        |
| Practice Test 14 - EQUILIBRIUM                                     | 44        |
| Practice Test 15 - TERMINOLOGY - VESTIBULE AND SEMICIRCULAR CANALS | 44        |
| <b>VESTIBULAR NERVE AND PATHWAY TO THE BRAIN</b>                   | <b>45</b> |
| Practice Test 16 - VESTIBULAR NERVE AND PATHWAY TO THE BRAIN       | 45        |
| <b>COPYRIGHT AND PRODUCT DETAILS</b>                               | <b>46</b> |