

Sensory Receptors (page 146)

1. Who am I? Match each part of the sensory circuit with one of the descriptions that follow:

<i>Analyzer</i>	<i>Receptor</i>
<i>Conductor</i>	<i>Stimulus</i>
<i>Nerve impulse</i>	<i>Processor</i>

- a) I am an integration centre that gathers information needed to make a decision. *Analyzer*
- b) I am information that travels like an electrical current and is transmitted from neuron to neuron. *Nerve impulse*
- c) I am an external agent that evokes a response bearing information. *Stimulus*
- d) I am a structure that can receive stimuli from outside the body, which means I can receive information. *Receptor*
- e) I am a structure that conveys information. *Conductor*
- f) I convert stimuli nerve impulses. *Processor*

- c) I am a transparent jelly that fills most of the eyeball and holds the retina in place. *Vitreous humour*
- d) I am a liquid on the surface of the lens that is constantly being replenished. *Aqueous humour*
- e) We prevent dust and sweat from falling into the eye. *Eyelashes and eyebrows*
- f) I am a coloured ring that controls the quantity of light reaching the retina. *Iris*
- g) I am a structure that secretes tears. *Lacrimal gland*
- h) I spread tears over the eye surface with my movements. *Eyelid*
- i) I am a membrane covered with light-receptor nerve cells. *Retina*
- j) I am a thick membrane that forms the white of the eye. *Sclera*
- k) I am the membrane of the eye that contains the most blood vessels. *Choroid*
- l) I am a transparent extension of the eyelid on the surface of the eye. *Conjunctiva*

Anatomy of the Eye (pages 146 to 150)

2. Who am I? Who are we? Match each part of the eye with one of the descriptions that follow:

<i>Eyelashes and eyebrows</i>	<i>Vitreous humour</i>
<i>Conjunctiva</i>	<i>Iris</i>
<i>Cornea</i>	<i>Choroid</i>
<i>Lens</i>	<i>Sclera</i>
<i>Lacrimal gland</i>	<i>Eyelid</i>
<i>Aqueous humour</i>	<i>Retina</i>

- a) I am a structure in the eye that makes visual accommodation possible. *Lens*
- b) I am the first transparent membrane of the eye that light passes through. *Cornea*

Physiology of the Eye (pages 150 to 154)

- 3. List, in the correct order, the structures light passes through when it enters the eye. *Cornea, aqueous humour, lens, vitreous humour*
- 4. Name the two causes of myopia. *Slightly elongated eyeball and overly curved lens*
- 5. Name the two causes of hypermetropia. *Slightly shortened eyeball and insufficiently curved lens*
- 6. Name the vision defect associated with aging. *Presbyopia*

7. Use the terms below to complete the sentences that follow:

<i>In front of</i>	<i>Diverging</i>
<i>Converging</i>	<i>Hypermetropia</i>
<i>Behind</i>	<i>Myopia</i>

- a) In *myopia*, the clear image is formed *in front of* the retina, and distant objects appear to be blurred. *Diverging* lenses are used to correct this defect.
- b) In *hypermetropia*, the clear image is formed *behind* the retina and nearby objects appear to be blurred. *Converging* lenses are used to correct this defect.

8. Fill in the following table:

Receptor organ	Stimulus	Processor	Signal	Conductor	Analyzer
Eye	<i>Light</i>	<i>Retina</i>	<i>Nerve impulse</i>	<i>Optic nerve</i>	<i>Visual area of the brain</i>

Student textbook, page 161

Anatomy and Physiology of the Ear (pages 156 to 160)

1. Indicate whether each part belongs to the *outer ear*, *middle ear* or *inner ear*.

- a) The three ossicles *Middle ear*
 b) The pinna *Outer ear*
 c) The cochlea *Inner ear*
 d) The auditory canal *Outer ear*
 e) The Eustachian tube *Middle ear*
 f) The semicircular canals *Inner ear*
 g) The eardrum *Middle ear*
 h) The vestibule *Inner ear*

2. Indicate which part of the ear matches each of the following descriptions:

- a) I am a simple tube that conveys sound to the eardrum. *Auditory canal*
 b) I am a channel that ends at the throat and balances air pressure on both sides of the eardrum. *Eustachian tube*
 c) We are small bones that vibrate to the rhythm of sound. *Ossicles*

- d) I am a flexible membrane that vibrates. *Eardrum*
 e) I am made of folds of cartilage covered with skin and I capture sounds. *Pinna*
 f) I am a structure that carries auditory sensations to the brain. *Auditory nerve*
 g) We are rings that contain movement receptors. *Semicircular canals*
 h) I am shaped like a snail and I contain ciliary cells that turn sound into nerve impulses. *Cochlea*

3. Name the structures in the ear that sound vibrations pass through, in order. *Pinna, auditory canal, eardrum, ossicles, vestibule, cochlea*

4. Fill in the following table:

Receptor organ	Stimulus	Processor	Signal	Conductor	Analyzer
Ear	<i>Sound</i>	<i>Cochlea</i>	<i>Nerve impulse</i>	<i>Auditory nerve</i>	<i>Auditory area of the brain</i>