Frontal lobe - receiver of signals from all senses

Parietal lobe - site of the cortical receiving area for touch

Temporal lobe - site of cortical receiving area for hearing

Occipital lobe - site of cortical receiving area for vision

perception - conscious sensory experience

distal stimulus - something "out there" in the external environment

perceptual process - sequence leading to recognition of the stimulus and action with regard to the stimulus

sensation - often identified with elementary processes that occur at the beginning of a

sensory system

principle of transformation - perception that stimuli and responses created by stimuli are transformed between environmental stimulus and perception

principle of representation - perception that everything one percieves is based on representations of stimuli on the receptors

proximal stimulus - in vision, image on retina

sensory receptor - cell specialized to respond to a specific type of environmental energy

transduction - transformation of environmental energy into electrical energy

visual pigment - light sensitive molecule in the rod and cone outer segments

primary receiving area - area that tubes in

most of the signals initiated by a sense's receptors

neural processing - collection of operations that transform electrical signals within a network of neurons

cerebral cortex - layer that contains the machinery for creating perception, language, memory and thinking

visual form agnosia - inability to recognize objects

knowledge - any information that perceiver brings to a situation

top-down processing - action that starts with the analysis of high level information

bottom-up processing - action that is based on information in the receptors

oblique effect - enhanced sensitivity to vertically

and horizontally oriented visual stimuli compared to obliquely oriented stimuli

grating acuity (visual) - smallest width of lines that subjects can detect

threshold - minimum stimulus energy necessary for an observer to detect a stimulus

psychophysics - category of quantitative methods for measuring relationships between stimulus properties and subjects' experiences

method of limits - psychophysical approach where experimenter presents sequences of stimuli in ascending and descending order

magnitude estimation - psychophysical approach where subjects assigns number to a stimulus that are proportional to subjective degree

cognitive influences on perception - how a person's

knowledge, memories, and expectations influence his or her perception

perceived magnitude - measure of stimuli, such as light or sound, that indicates the degree of experience

phenomenological method - approach to determining relationship between stimuli and perception where observers describe what they perceive

electromagnetic spectarum - continuum of energy that extends from very short wavelength gamma rays to long-wavelength radio waves

Chap 2

cell body - part of neuron that contains the neuron's metabolic machinery, receiving stimulation from other neurons

neuron - structure that transmits electrical signals in the body

spectral sensitivity - acuteness of visual receptors to different parts of the visible spectrum

purkinje shift - movement from cone spectral sensitivity to rod spectral sensitivity that takes place during dark adaptation

dendrites - nerve processes on the cell body that receive stimulation from other neurons

spontaneous activity - nerve firing that occurs in the absence of environmental stimulation

axon - part of neuron that can touch nerve impulses over distances

synapse - small space between end of neuron and the cell body of another neuron

receptor site - small area on the post synaptic neuron that is sensitive to specific neurotransmitters

neurotransmitter - chemical stored in synaptic vesicles that is released in response to a nerve impulse

inhibitory response - occurance where a neuron's firing rate decreases due to restriction from another neuron

depolarization - occurance where the inside of a neuron becomes more positive

hyperpolarization - occurance where inside of a neuron becomes more negative

convergence (neural) - occurance where many neurons synapse onto a single neuron

visible light - band of electromagnetic energy that activates the visual system and that therefore can be perceived

Chapter 3

V1 or striate cortex - area of occipital lobe

where signals from retina and LGN first reach cortex

Lateral geniculate nucleus - area that receives input from optic nerve and communicates with cortical receiving area for vision

receptive field - area on the receptor surface that, when stimulated, affects the firing of that neuron

lateral inhibition - inhibitory response that is transmitted across nerve circuit

Superior colliculus - area of the brain involved in controlling eye movements and other visual behaviors

lateral inhibition - inhibitory response that is transmitted across nerve circuit

inhibitory area - area of a receptive field that is associated with inhibition

ommatidium - structure of the eye of the Limulus located directly over a visual receptor

excitatory area - area of receptive field that is associated with excitation

excitatory-center, inhibitory-surround receptive field - in the eye, area in which presenting spot of light to the middle increases firing

inhibitory-center, excitatory-surround receptive field - in the eye, area in which presenting spot of light to the middle decreases firing

center-surround antagonism - competition between the regions of a receptive field

visual receiving area - place where signals from the retina and LGN first reach the cortex

simple cortical cell - neuron in the visual cortex that responds best to bars of a particular orientation

orientation tuning curve - function relating the firing rate of a neuron to the position of the stimulus

complex cell - neuron in the visual cortex that responds best to moving bars with a particular orientation

end-stopped cell - neuron that responds best to lines of a specific length or to the corner of a stimulus

feature detector - neuron that responds selectively to a specific aspect of the stimulus such as orientation

selective adaptation - concept that firing causes neurons to eventually become fatigued

or adapt

contrast threshold - minimum intensity difference between two areas that can just barely be seen

selective rearing - procedure in which animals are brought up in special environments

neural plasticity - capacity of the nervous system to change in response to experience

experience - dependent plasticity - process where neurons adapt to a specific environment where a person or animal lives

inferotemporal cortex - area of the brain outside the striate cortex, involved in object perception and facial recognition

sensory coding - how neurons represent various characteristics of the environment

specificity coding - type of neural code in which different perceptions are signaled by activity in specific neurons

population coding - representation of an object or quality by pattern of large number of neurons firing

sparse coding - representation of an object or quality by the pattern of small number of neurons firing

contextual modulation - effect of stimulating outside the receptive field

Chap 2 cont.

lens - transparent focusing through which light passes after passing through the cornea and the aqueous humor

light-adapted sensitivity - acculeress of eye to brightness

cornea —> 80% of eye's focusing power

refractory period — time between one nerve impulse occuring and next are being generated by the axon