

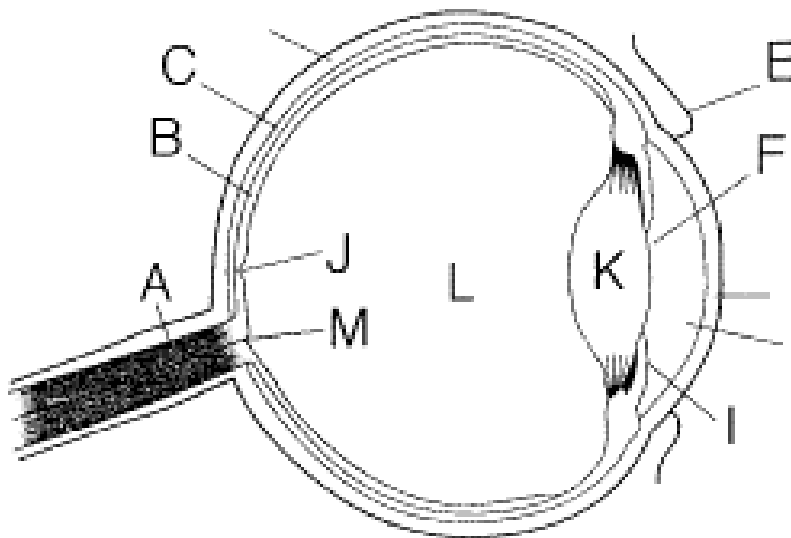
OK, keep your eyes foveated on your own exam. The Skidmore Honor Code is in effect, as always. Read each question carefully and answer it completely. Multiple choice questions are worth 1 point each. The point values for the rest of the questions are marked. Good Luck!

Answer the essay questions on the attached lined paper.

Essay 1. Describe the trichromatic and opponent process theories of color vision. Evaluate the evidence available to support each theory, and their synthesis. [20 pts.]

Essay 2. What is a constancy? Illustrate the importance of constancy by discussing size and lightness constancy. What does the moon illusion tell us about size constancy? What do the Gelb demonstration and Gilchrist's study tell us about lightness constancy? [20 pts.]

1. As you look straight ahead, a bar of red light flashes in your left visual field. Trace what happens to that visual input as completely and clearly as you can. (Your answer doesn't have to be prose.) [10 pts.]



2. Match the appropriate letter from the figure to the descriptions indicated below [5 pts.]:

Responsible for bending most of the light entering the eye	_____
Responsible for perceiving visual detail	_____
Responsible for accommodation	_____
Responsible for absorbing light not absorbed by the retina	_____
Contains aqueous humor	_____
Lack of photoreceptors creates a blind spot.	_____
Place where cataracts may occur	_____
Floater are found here	_____
Astigmatism occurs here	_____
Would be a tapetum in a nocturnal animal	_____

3. A large-amplitude wavelength looks
  - a. dim.
  - b. bright.
  - c. red.
  - d. purple.
4. The \_\_\_\_\_ is (are) responsible for carrying information about illumination differences and moderate or rapid movement.
  - a. magno pathway
  - b. parvo pathway
  - c. horizontal cells
  - d. Amacrine cells
5. Compared to other cues to depth, accommodation is
  - a. a strong pictorial cue.
  - b. more effective in conveying relative distance.
  - c. more effective in conveying egocentric distance.
  - d. weak, at best.
6. Ordinarily context helps us to perceive shapes accurately. However, this is not true in the case of
  - a. top-down processing.
  - b. the perception of complex shapes.
  - c. the twisted-cord illusion.
  - d. shape constancy.
7. People who favor the Gestalt approach to shape perception argue that
  - a. all experiences can be analyzed into their most basic sensations.
  - b. shape perception can largely be explained at the physiological level.
  - c. all species tend to organize shapes in the same fashion.
  - d. we perceive objects as well-organized wholes.
8. Data-driven (bottom-up) approaches to shape perception
  - a. would emphasize the importance of the information in the stimulus.
  - b. would emphasize the importance of cognitive operations.
  - c. are no longer thought to be important.
  - d. are thought to be more important than conceptually driven processes.
9. Binocular disparity
  - a. is most effective for determining the depth of nearby objects.
  - b. is most effective for determining the depth of distant objects.
  - c. is more effective than any of the monocular cues for depth.
  - d. is an important pictorial depth cue.
10. In motion parallax,
  - a. objects closer to you than the fixation point move in the same direction as your own movement.

- b. objects farther from you than the fixation point move in the opposite direction from your own movement.
  - c. objects farther from you than the fixation point move in the same direction as your own movement.
  - d. both eyes are necessary in order to use this cue in depth perception.
11. You saw (in class and in the book) an illustration of Margaret Thatcher's face upside down. What important point is illustrated by such a demonstration? [3 pts]
12. Briefly list and describe the stages of shape processing proposed by the computational theorists (e.g., David Marr). [15 pts]
13. A person with a problem in his or her M-cone system
- a. would have difficulty seeing greens.
  - b. would have difficulty seeing blues.
  - c. would have difficulty seeing reds and greens.
  - d. would have difficulty seeing yellows and blues.
14. Binocular rivalry exists when
- a. the images on corresponding retinal points cannot be fused.
  - b. cyclopean perception is achieved.
  - c. the images on corresponding retinal points can be fused.
  - d. we are viewing an ambiguous figure and the perception keeps changing.
15. Suppose that you are looking at a 3" black square on a white surface, two feet from your eyes. You then shift your gaze to a medium-gray, distant wall. According to Emmert's Law, you are likely to see on that wall
- a. a 3" black square.
  - b. a 3" white square.
  - c. a white square that is larger than 3".
  - d. a white square that is smaller than 3".
16. Which of the following is the main advantage of a small pupil?
- a. the restriction of light permitted to enter the eye
  - b. the greater amount of light permitted to enter the eye
  - c. the increased distance over which objects will be in focus
  - d. the increased pressure that's provided to the eye
17. In the kinetic depth effect,
- a. the distance to an object becomes apparent as the observer moves.
  - b. several other depth cues aid the perception of depth.
  - c. a figure appears flat when stationary but solid when in motion.
  - d. the effect arises from the disparity of information provided to the two eyes.

18. The parasol ganglion cells
  - a. are found at the beginning of the parvo pathway.
  - b. are found at the beginning of the magno pathway.
  - c. are predominantly connected to cones.
  - d. provide us with information about the details of a stimulus.
  
19. Most of the ganglion cells leaving the eye have their first synapse in the
  - a. superior colliculus.
  - b. primary visual cortex.
  - c. lateral geniculate nucleus.
  - d. optic nerve.
  
20. If you were to move an object closer to you, its visual angle would
  - a. stay the same.
  - b. increase.
  - c. decrease.
  
21. Accommodation is
  - a. used only by nearsighted people.
  - b. used during all pursuit movements.
  - c. used to focus the light rays on a point about a centimeter in front of the retina.
  - d. used to change the shape of the lens.