

Good luck on this first exam. Read each question carefully and answer it completely. You do not have to use complete sentences and prose structure to answer questions. You do, however, have to answer clearly and completely. Do not simply provide me with a recall cue, but clarify what the term means and how it provides evidence for the point you're trying to make. Use the point value of each question as a clue to the amount of time I expect you to spend on that question (i.e., 1 pt = 1 minute). Multiple-choice questions are worth 1 point each. The total point value on the exam is 80 points. Check to be sure that you have all 6 pages of the exam. As always, the Skidmore Honor Code is in effect, and you will write and sign a statement to that effect at the end of the exam.

1. Use the attached lined paper to (neatly) answer the following two essays, each worth 20 pts.

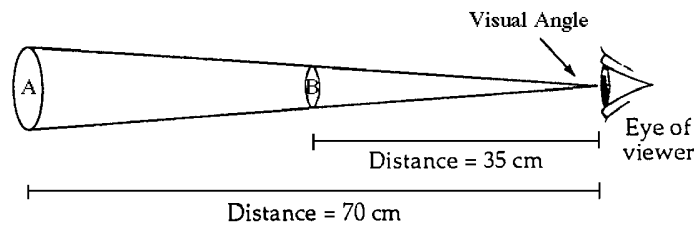
ESSAY 1: For the corollary discharge theory of motion perception, Gregory has argued that two separate systems are involved (image-retina and eye-head). How do the two systems interact to provide us with our perception of motion and stability? What would J. Gibson have to say about corollary discharge theory?

ESSAY 2: Describe some cues to the perception of depth. Distinguish between monocular and binocular cues, and describe the conditions under which a person with only one eye is at no disadvantage to a person with two good eyes as far as depth perception goes. Why are Julesz's random dot stereograms important?

1. Complete the table below to illustrate differences between rods and cones. [5 pts]

Characteristic	Rods	Cones
Dark Adaptation		
Sensitivity		
Relative number connected to ganglion cells (convergence)		
Location in retina		
Function/purpose		

2. What is an astigmatism?
  - a. a clouding of the lens
  - b. an eye problem in which the cornea is not perfectly round
  - c. equal focusing abilities on all parts of the eye
  - d. an eye problem that is most common in preschool children
  
3. What is the name of the cells that receive information from the rods and cones and pass it on to the ganglion cells?
  - a. bipolar cells
  - b. horizontal cells
  - c. amacrine cells
  - d. complex cells
  
4. Research on lightness perception indicates that
  - a. we organize the visual scene before we perceive the lightness of objects in the scene.
  - b. we perceive the lightness of objects in a scene before we organize those objects.
  - c. lightness perception and organization of objects occur simultaneously.
  - d. the nature of the stimuli determines whether lightness perception or organization of objects occur first.
  
5. Autokinesis (the autokinetic effect) is presumably due to
  - a. small movements of a stationary car produced by action of the engine.
  - b. induced motion.
  - c. involuntary eye movements.
  - d. movement aftereffects.
  
6. In general, a constancy occurs when
  - a. qualities of objects tend to stay the same despite changes in the ways we view the objects.
  - b. our knowledge of objects remains constant in spite of changes in experience.
  - c. the distal stimulus and the proximal stimulus are identical.
  - d. the proximal stimulus tends to stay the same despite changes in the ways we view objects.
  
7. For a nearsighted (myopic) person,
  - a. the far point is closer than for a person with normal acuity.
  - b. the near point is closer than for a person with normal acuity.
  - c. the eyeball is typically elongated.
  - d. All of the above.
  
8. When your eyes move from one location to the next as you read this question, they are making a
  - a. fixation.
  - b. vergence movement.
  - c. gaze-contingent paradigm.
  - d. saccade.



9. Refer to the above figure to answer the following questions [4 pts]:
- Because circle A is twice as large as circle B, its visual angle will be (twice as large as, the same as, half as large as) that of circle B.
  - With the same visual angle, because circle A is twice as far away as circle B, it will measure (twice as large as, the same size as, half as large as) circle B.
  - If circle A were the same size as circle B, but twice as far away, its visual angle would be (smaller than, the same as, larger than) that of circle B.
  - What is one advantage of using visual angle to describe objects?
10. The condition in which the lens loses its ability to accommodate, resulting in difficulty in focusing on nearby objects is known as
- glaucoma.
  - albino.
  - cataract.
  - presbyopia.
11. According to Treisman's feature integration approach, when a person's attention is either overloaded or distracted, features can become combined inappropriately. This is known as
- amblyopia.
  - dynamic visual acuity.
  - an illusory conjunction.
  - diabetic retinopathy.
12. The difficulties we experience in accurately perceiving stimuli in unusual orientations (such as the upside-down Mrs. Thatcher) is support for
- a data-driven (bottom-up) approach to shape perception.
  - a conceptually driven (top-down) approach to shape perception.
  - the spatial-frequency approach.
  - the prototype-matching approach.
13. Pairs of lights that look exactly the same but are composed of physically different stimuli are known as
- complementary colors.
  - metamers.
  - tritanopes.
  - dichromats.

14. Achromatopsia

- a. arises due to damage to V2.
- b. arises due to damage to V3.
- c. arises due to damage to V4.
- d. arises due to damage to V5.

15. The tendency to recall more of a scene than was actually present in a picture is referred to as

- a. illusory contour.
- b. illusory conjunction.
- c. boundary extension.
- d. lateral inhibition.

16. According to the Gibsonian (direct perception) approach,

- a. visual perception does not involve internal representations or mental processes.
- b. traditional cues such as linear perspective and size are important for depth perception in real-world scenes.
- c. the optic array is a poor reflection of the richness of the world.
- d. the actions that one could do with objects are not important.

17. Color constancy

- a. arises when we call colors the same name, in spite of differences in the wavelengths striking our retinas.
- b. is only roughly accurate — color perceptions are influenced by illumination differences.
- c. was thought by Helmholtz to be due to unconscious inferences.
- d. All of the above.

18. What is one reason that the eye becomes more sensitive to light as time passes during dark adaptation?

- a. Because the pupil constricts, letting in less light.
- b. Because the dark-adapted eyes have a higher concentration of rhodopsin.
- c. Because the dark-adapted eyes have a lower concentration of rhodopsin.
- d. Because the cornea becomes more sensitive to light.

19. What do observers report when they look at an image using the stabilized retinal image technique?

- a. Their acuity improves.
- b. The contrast within the image grows stronger.
- c. They become light adapted.
- d. The image disappears.

20. Which of the following is an example of the additive method of color mixing?

- a. We mix blue and yellow food coloring together.
- b. We put blue crayon on a yellow paper.
- c. We make tiny dots of red and green and view them from a distance.
- d. We mix blue and green together before painting a white piece of paper.

21. List and describe 3 pieces of evidence used to support trichromatic theory. [5 pts]

22. Describe and illustrate 3 Gestalt principles of form perception. [3 pts]

23. Briefly describe the stages of Marr's computational approach to shape perception. [5 pts]