

Well, no treats, but no tricks either. You should find this exam to be consistent with previous exams. That is, the exam has a total of 80 points, so I'm expecting that it will take you about 80 minutes to complete. Because I think of a point as a minute, you should not spend 5 minutes responding to a 20-point question. Nor should you spend 10 minutes responding to a 5-point question. Keep your eyes foveated on your own exam. Good Luck!

Use the lined paper at the back of the exam to answer the essay questions.

Essay #1. What seem to be the crucial conditions for human vision? What is the evidence used to demonstrate the degree to which these conditions are important? [20 pts]

Essay #2. We have discussed a number of different examples that indicate that perception is influenced by what we know (conceptual-driven processing). Describe at least four examples that indicate to you most clearly that perception is not simply the passive reception of visual stimuli (as a camera does), and discuss what this might mean about the relationship between memory and perception. [20 pts]

1. Autokinesis 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.
2. Induced movement
  - a. is an example of a context effect.
  - b. is a type of stroboscopic movement.
  - c. occurs due to involuntary eye movements.
  - d. occurs when a larger object impinges on a smaller object.
3. 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
4. The tapetum
  - a. is found in cats and other nocturnal animals.
  - b. is located behind the choroid in humans.
  - c. aids people in seeing at night.
  - d. helps to overcome the loss of vision found at the blind spot.
5. If you were to move an object closer to you, its visual angle would
  - a. stay the same.
  - b. increase.
  - c. decrease.

6. The line in which all points are the same distance from the observer as the focal point is called
  - a. Panum's area.
  - b. Trompe l'oeil.
  - c. the horopter.
  - d. interposition.
  
7. An object with a higher albedo will always
  - a. reflect a larger amount of light than an object with a lower albedo, regardless of lighting conditions.
  - b. appear to be lighter than an object with a lower albedo, regardless of lighting conditions.
  - c. reflect a larger amount of light than an object with a lower albedo under identical lighting conditions.
  - d. appear to be lighter than an object of identical albedo that is under brighter lighting conditions.
  
8. Pairs of lights that look exactly the same but are composed of physically different stimuli are known as
  - a. complementary colors.
  - b. metamers.
  - c. tritanopes.
  - d. dichromats.
  
9. Complete the table below to illustrate differences between rods and cones. [5 pts]

Characteristic	Rods	Cones
Dark Adaptation		
Sensitivity		
Number		
Location in retina		
Function/purpose		

10. 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.

11. 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.
  
12. Midget bipolar cells
  - a. connect to a single rod or small number of rods.
  - b. connect to many rods.
  - c. connect to a single cone or small number of cones.
  - d. connect to many cones.
  
13. 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.
  
14. 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.
  
15. Suppose you watch a car drive by from left to right in front of your house. According to the corollary discharge theory,
  - a. the car appears to move because you expect it to.
  - b. the car's image falls on the same area of the moving retina, which is inconsistent with the expectation of movement from the eye-head system.
  - c. the car appears to move quickest when it is farthest away.
  - d. the movements of your eyes often confuse you as to what is truly moving, you or the car.
  
16. Both the Gilchrist study (dimly lit and brightly lit rooms) and Mach's Book (index card) illustrate an important principle in lightness perception. What is that principle and how do these examples illustrate the principle? [5 pts]

17. Which of the following requires only two primary colors in order to match his or her perception of all other colors?
- normal trichromat
  - abnormal trichromat
  - dichromat
  - anomalous monochromat
18. Color constancy
- arises when we call colors the same name, in spite of differences in the wavelengths striking our retinas.
  - is only roughly accurate — color perceptions are influenced by illumination differences.
  - was thought by Helmholtz to be due to unconscious inferences.
  - All of the above.
19. Which of the following statements about the visual system is correct?
- Everything that is registered on the left side of each retina ends up on the right side of the brain.
  - Everything that is registered on the left side of each retina ends up on the left side of the brain.
  - Everything that is registered on either side of each retina ends up on the right side of the brain.
  - Everything that is registered on either side of each retina ends up on the left side of the brain.
20. According to Helmholtz's theory of lightness constancy,
- viewers gather all the necessary information from the world "out there."
  - we take illumination into account when we judge lightness.
  - lightness constancy occurs because the intensity of an object, relative to its background, remains constant.
  - we have greater lightness constancy as children than as adults.
21. Briefly describe lateral inhibition, then tell me why it is an important contributor to visual perception. [5 pts]

22. Accommodation is
- used only by nearsighted people.
  - used during all pursuit movements.
  - used to focus the light rays on a point about a centimeter in front of the retina.
  - used to change the shape of the lens.
23. Data-driven (bottom-up) approaches to shape perception
- would emphasize the importance of the information in the stimulus.
  - would emphasize the importance of cognitive operations.
  - are no longer thought to be important.
  - are thought to be more important than conceptually driven processes.
24. Briefly describe the functioning of at least five monocular cues to depth. [5 pts]

Cue	Description