

As always, the Skidmore Honor Code is in effect, which you'll acknowledge when you turn in your exam. Each multiple-choice question is worth 1 point and the value of the other questions is indicated. The exam should take about 80 minutes (the usual class time) to complete. Good luck!

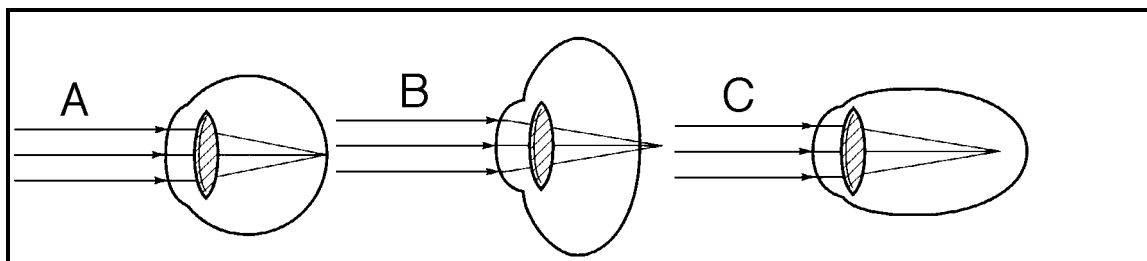
Essay 1 (20 pts): We have discussed a number of different examples that indicate that perception is influenced by what we know (conceptual-driven processing). Describe at least four examples that indicate to you most clearly that perception is not simply the passive reception of visual stimuli (as a camera does), and discuss what this might mean about the relationship between memory and perception.

Essay 2 (20 pts): Describe the wide range of evidence to support the idea that we effectively have two completely different visual systems in our retinas (duplex or duplicity theory).

1. Which of the following statements about size cues is correct?
 - a. Size is not a useful cue in distance perception.
 - b. Familiar size is helpful, but other cues are more helpful.
 - c. Relative size is helpful, but familiar size is not.
 - d. If familiar size is helpful, then we know that depth perception is inborn rather than learned.
2. The amount of convergence, or pooling of information from the photoreceptors, affects
 - a. adaptation.
 - b. hue.
 - c. purity.
 - d. acuity.
3. What influence does lighting have on acuity?
 - a. Lighting has relatively little influence on acuity.
 - b. Because more rods than cones are found in the retina, acuity does not require a lot of light.
 - c. At night we see better in the cone region; during the day we see better in the rod region.
 - d. Acuity is better with brighter lighting because acuity is better for cones than for rods.
4. You are watching a low-budget horror film. Suddenly you notice during a tracking shot that the house in the near background and the distant mountains all appear to move at the same rate as the camera moves; they have used a fake backdrop rather than real objects. What depth cue were you deprived of?
 - a. distance from the horizon
 - b. kinetic depth effect
 - c. motion parallax
 - d. binocular disparity
5. Stereopsis refers to
 - a. the sense of depth that emerges from binocular disparity cues.
 - b. the factors that require only one eye to provide us with distance information.
 - c. the ability to focus on an object.
 - d. the condition in which the lens of the eye becomes cloudy.
6. 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.

7. The tendency to recall more of a scene than was actually present in a picture is referred to as
- illusory contour.
 - illusory conjunction.
 - boundary extension.
 - lateral inhibition.
8. The difficulty of linking the input from the two retinas is referred to as
- the correspondence problem.
 - the constructivist problem.
 - the complementary problem.
 - the linkage problem.
9. Regarding depth perception, James J. Gibson (direct perception approach) argues that
- the pictorial cues are of utmost importance in depth perception.
 - texture gradients are an important source of information about distance.
 - size cues are more important than motion perspective.
 - cues related to motion are unimportant.
10. 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.
11. An object with a higher albedo will always
- reflect a larger amount of light than an object with a lower albedo, even if they are exposed to different lighting conditions.
 - appear to be lighter than an object with a lower albedo, even if they are exposed to different lighting conditions.
 - reflect a larger amount of light than an object with a lower albedo under identical lighting conditions.
 - appear to be lighter than an object of identical albedo that is under brighter lighting conditions.
12. According to Helmholtz's theory of lightness constancy,
- viewers gather all the necessary information from the world "out there."
 - we make an unconscious inference about illumination 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.
13. The moon illusion occurs when
- the horizon moon appears larger than the zenith moon.
 - the zenith moon appears larger than the horizon moon.
 - the proximal moon appears larger than the distal moon.
 - the moon appears to be the same size as the sun.
14. The apparent purity of a color is known as
- hue.
 - saturation.
 - wavelength.
 - brightness.

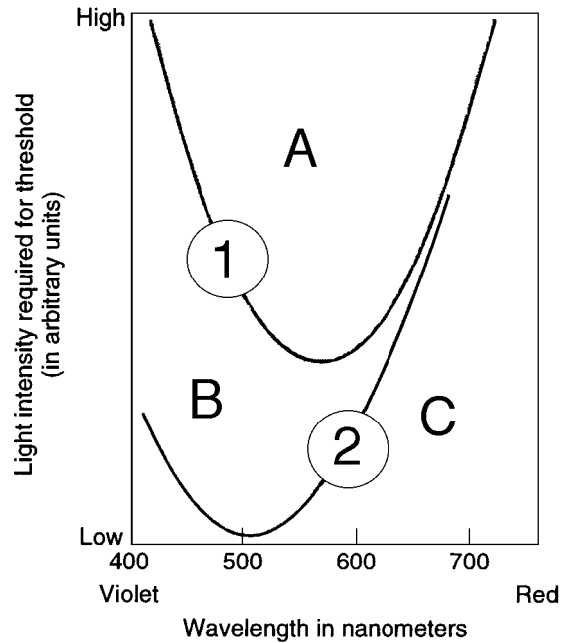
15. Mach's book is important because
- it contains his derivations of a number of important perceptual principles.
 - it illustrates a variety of Mach bands.
 - it illustrates the operation of higher-order processes in perception.
 - it shows that albedo is the sole determinant of lightness.
16. Pairs of lights that look exactly the same but are composed of physically different stimuli are known as
- complementary colors.
 - metamers.
 - tritanopes.
 - dichromats.
17. A person who has a red-green color deficiency
- has some problem with his or her S-cone system.
 - has some problem with his or her M-cone system.
 - has some problem with his or her L-cone system.
 - has some problem with his or her M- or L-cone system.
18. 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.



19. Which of the eyeballs above represents
- _____ a nearsighted eye
- _____ a normal eye
- _____ a farsighted eye
20. Suppose you know a person who is a true monochromat. When this person looks at a brightly colored painting, the painting would look
- blurry, because acuity is strongly affected.
 - as if it were painted in shades of gray.
 - exclusively red, exclusively blue, or exclusively green, depending upon the kind of monochromat this person is.
 - normal in color, because this person only has trouble in matching colors the way a normal trichromat would.
21. 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.

22. The color phenomenon called memory color can be traced to
- expectations about characteristic colors.
 - successive color contrast.
 - the Purkinje shift.
 - storage of information in the cones.
23. Human beings are capable of discriminating approximately _____ colors.
- 11
 - 1,000
 - 1,000,000
 - 5,000,000
24. Fourier analysis
- is identical to Fourier synthesis.
 - allows us to determine the sine waves that make up a complex wave.
 - allows us to combine sine waves to produce a complex wave.
 - allows us to analyze a sine wave into even simpler waves.
25. The size of a visual angle depends on
- the size of the target.
 - the distance of the target from the eye.
 - the clarity of the target.
 - a & b
 - all of the above.
26. If a moving object passes in front of a stationary background, observers
- can better detect the motion if they are moving in the same direction.
 - will only be able to detect the motion if they are standing still.
 - can detect the motion better than when no stationary background is present.
 - can better detect the motion when they are uncertain which direction the object will be moving next.
27. We tend to perceive figures as good, regular, and simple. What does this illustrate?
- masking
 - the law of Prägnanz
 - the figure-ground relationship
 - our tendency to perceive all figures as three-dimensional
28. Which kind of apparent movement is responsible for the perception of movement in a movie?
- autokinesis
 - stroboscopic movement
 - induced movement
 - movement aftereffects
29. In the computational approach, the point at which a function changes from positive to negative, as would happen at an edge, is referred to as a
- primal sketch
 - Mexican-hat filter
 - Laplacian transformation
 - zero-crossing

30. Suppose you watch a car drive by from left to right in front of your house. According to the corollary discharge theory,
- the car appears to move because you expect it to.
 - 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.
 - the car appears to move quickest when it is farthest away.
 - the movements of your eyes often confuse you as to what is truly moving, you or the car.
31. Psychologists who favor the direct perception approach explain motion perception in terms of
- relative stimulation of motion-sensitive neurons.
 - the corollary discharge theory.
 - the self-motion illusion.
 - information from the stimuli.
32. An additive mixture of two colors produces a different result than a subtractive mixture of the same two colors. What accounts for this difference?
- The mixing occurs at different locations.
 - The stimuli reach the eye at different angles.
 - Additive mixtures can only be performed with highly saturated colors.
 - Subtractive mixtures can only be performed with black, white, and grays.
33. Shape constancy means that
- in spite of changes in the proximal shape, the distal shape will appear to remain roughly constant.
 - in spite of changes in the distal shape, the proximal shape will appear to remain roughly constant.
 - when presented with an ambiguous figure, a person will see it in only one way.
 - changes in lighting have little effect on the perceived shape of an object.
34. The parasol ganglion cells
- are found at the beginning of the parvo pathway.
 - are found at the beginning of the magno pathway.
 - are predominantly connected to cones.
 - provide us with information about the details of a stimulus.
35. 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.
36. What does *cortical magnification* mean?
- Neurons that are near each other on the retina send information to areas near each other in the visual cortex.
 - A weak stimulus will be intensified and magnified by the time it reaches the cortex.
 - Information from the fovea is over-represented with respect to the cortex.
 - The cortex is much larger than the retina.
37. If a friend of yours is able to see but unable to identify your face, she is most likely suffering from
- prosopagnosia.
 - visual agnosia.
 - presbyopia.
 - glaucoma.



38. Refer to the above figure to answer the following questions:

Which curve is produced by rod vision?	
Which curve indicates lesser sensitivity?	
In which area would a stimulus not be detected by an observer?	
In which area would a stimulus be detected only by rods?	

39. Your text described in detail a classic study by Holway and Boring in which people viewed a test stimulus in different viewing conditions and adjusted a comparison circle until it seemed to match the size of the test stimulus. What did this study demonstrate?

- a. In the normal viewing condition, people showed very little constancy.
- b. In the monocular condition, people showed overconstancy.
- c. Without distance cues, people showed size constancy.
- d. Without distance cues, people showed very little constancy.