Question 9. What are the monocular cues of depth perception? Explain the role of binocular cues in the perception of depth.
Answer: Monocular cues are psychological cues.

- These cues are often used by artists to induce depth in two dimensial paintings.
- Hence they are also known as pictorial cues.
- They help us in judging the distance and depth in two dimensal surfaces.
- Some important monocular cues that in judging the distance and depth in two dimensional surfaces are as follows:

1. Relative Size: The size of retinal images allows to judge distance based on post and present experience with similar objects. As the objects gets away, the retinal image becomes smaller and smaller. One tends to perceive an object farther away when it appears small, and closer when it appear bigger.
2. Interposition or Overlapping: These cues occur when some portion of the object is covered by another object. The overlapped object is considered farther away, whereas the object that covers it appears nearer.
3. Linear Perspective: This reflects a phenomenon by which distant objects appear to be closer together than the nearer object. For example, Parallel lines, such as rail track appear to converge with increasing distance.
4. Aerial Perspective: The air contains particles of dust and moisture that make distant objects look hazy or blurry. This effect is called aerial perspective.
5. Light and Shade: In the light some parts of the object get highlighted, whereas some parts become darker. Highlights and shadow provide us with information about an object's distance.
6. Relative Height: Larger objects are perceived being closer to the viewer and smaller object a being farther away.
7. Texture Gradient: It represents a phenomenon by which the visual field haying more density of elements is seen farther away.
8. Motion Parallax: It is kinetic monocular cue, and hence not considered as a pictorial cue. It occurs when objects at different distances move at a different relative speed. The distant objects appear to move slowly than the objects that are close. The rate of an objects movement provides a cue to its distance. For example, when we travel in a bus, closer objects move "against" the direction of the bus, whereas the farther objects move "with" the direction of the bus.

Binocular cues are depth information based on the coordinated efforts of both eyes.Three of them are:

1. Retinal or Binocular Disparity:
    - Retinal disparity occurs because the two eyes are separated from each other horizontally by some distance.
    - Because of this distance, the image formed on the retina of each eye of the same object is slightly different.
    - This difference between the two image is called retinal

disparity.
    - The brain interprets large retinal disparity to mean a close object and a small retinal disparity to mean a distant object.
2. Convergence:
    - When we see a nearly object our eyes converge inward in order to bring the image on the fovea of each eye.
    - A group of muscles send message to the brain regarding the degree to which eyes are turning inward and these messages are interpreted as cues to depth perception.
    - The degree of convergence decreases as the object moves further away from the observer.
3. Accommodation: Accommodation refers to a process by which we focus the image on the retina with the help of ciliary muscles.
    - These muscles change the thickness of the lens of the eye. If the object gets away (more than 2m) the muscle is relaxed.
    - When it moves nearer the muscles get tensed and the thickness of the lens increases.
    - The signal about the degree of contraction of the muscle is sent to the brain which provides the cue for distance.

Question 10. Why do illusions occur?
Answer:

- Illusions occur because of a result of a mismatch between the physical stimuli and its perception by the individual.
- The mismatch is caused by incorrect interpretation of information received by sense organs.
- Illusions are called primitive organizations as they are generated by an external stimulus situation that generates the same kind of experience in all the individuals.
- Some illusions are universal in nature as they are found in all individuals.
- These are also called permanent illusions because they do not change with experience and practice.
- Illusions that vary from individual to individual are called personal illusions.

Question 11. How do socio-cultural factors influence our perceptions?
Answer:

- Several psychologists have studied the processes of perception in different socio-cultural setting. For example, they have used Muller-Lyer and vertical-Horizontal illusion figures with several groups of people living in Europe, Africa, and many others place, by comparing samples from remote. African villages and western settings.
- It was found that African subjects showed greater susceptibility to horizontal vertical illusions, whereas Western subjects showed greater suspectibility to Muller-Lyer illusion.
- Similar findings have been reported in other studies also. Living in dense forests the African subjects regularly experienced vertically (e.g., long trees) and developed a tendency to overestimate it.
- The Westerners, who lived in an environment characterised by right angels, developed a tendency to underestimate the length of line characterised enclosure (e.g., arrowhead).
- This research suggests that the habits of perception are learnt differently in different cultural settings.
- Hudson did a study in Africa, and found that people, who had never seen pictures, had great difficulty in recognizing objects depicted in them and in interpreting depth cues.

- Sinha and Mishra have carried out several studies on pictorial perception using a variety of pictures with people from diverse cultural settings, such as hunters and gatherers living in forests, agriculturists in cities.
- Their studies indicate that interpretation of pictures is strongly related to cultural experiences of people.

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