

**Assignment-5**

**Unit-5: Image Segmentation**

1. Explain graph theoretical technique with respect to the following image. (CO5-Apply)

$$\begin{bmatrix} 7 & 2 & 2 \\ 5 & 7 & 2 \\ 5 & 1 & 0 \end{bmatrix}$$

2. Explain the process of image segmentation using region growing on the given image segment. (CO5-Apply)

$$\begin{bmatrix} 1 & 0 & 7 & 8 & 7 \\ 0 & 1 & 8 & 9 & 8 \\ 0 & 0 & 7 & 9 & 8 \\ 0 & 1 & 8 & 8 & 9 \\ 1 & 2 & 8 & 8 & 9 \end{bmatrix}$$

3. Explain the process of image segmentation using region splitting and merging on the given image segment. (CO5-Apply)

$$\begin{bmatrix} 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 \\ 2 & 2 & 2 & 2 & 2 & 2 & 2 & 2 \\ 2 & 8 & 8 & 8 & 8 & 8 & 2 & 1 \\ 2 & 8 & 8 & 8 & 8 & 8 & 2 & 1 \\ 2 & 8 & 8 & 8 & 8 & 8 & 2 & 1 \\ 2 & 1 & 1 & 1 & 1 & 1 & 2 & 1 \\ 2 & 1 & 1 & 1 & 1 & 1 & 2 & 1 \\ 2 & 1 & 1 & 1 & 1 & 1 & 2 & 1 \end{bmatrix}$$

4. How to detect an isolated point in an image; explain with the help of illustration. (CO5-Apply)
5. How to detect lines in an image; explain with the help of illustration. (CO5-Apply)