AJEENKYA
D Y PATIL UNIVERSITY

**End Term Examinations (April 2019)**

**School:** School of Engineering **Program:** B.Tech (Biomedical engg.)

**Course:** Biomedical Image Processing **Course Code**: BME306

**Semester:** VI **Max Marks:** 40 **Duration (mins):** 120

**Note: 1. Figures to the right indicates full marks.**

**Answer any FOUR questions.**

**Q 1.** (a) Explain Power Low transformation with example. [3]

(b) Explain different types of Pixel Connectivity. [3]

(c) Explain Intensity slicing and Contrast stretching with example. [4]

**Q 2.** (a) Following image has Salt and Pepper noise. Apply suitable filter to remove noise from the image.

[7]

f(x, y) =

| | | | |
|---|---|---|---|
| 0 | 1 | 3 | 2 |
| 4 | 5 | 2 | 7 |
| 6 | 2 | 4 | 2 |
| 7 | 5 | 8 | 1 |

(b) Explain smoothing in frequency domain filters. [3]

**Q 3.** (a) What is thresholding of image? Explain global thresholding techniques for image segmentation. [7]

(b) Explain the fundamentals of image compression model. [3]

**Q 4.** Apply region splitting in the following image. Assume threshold value <=3. [10]

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5 | 6 | 4 | 7 | 4 | 5 | 5 | 3 |
| 6 | 7 | 7 | 6 | 3 | 3 | 2 | 1 |
| 6 | 6 | 4 | 4 | 3 | 2 | 5 | 6 |
| 4 | 5 | 4 | 5 | 4 | 6 | 2 | 3 |
| 3 | 2 | 3 | 0 | 7 | 5 | 3 | 2 |
| 1 | 0 | 1 | 0 | 2 | 2 | 6 | 5 |
| 1 | 0 | 1 | 1 | 3 | 0 | 4 | 4 |
| 0 | 2 | 1 | 0 | 2 | 3 | 5 | 4 |

**Q 5.** (a) Explain the fundamentals of colour image processing. [7]

(b) Explain is wavelet? [3]