

Paper Id: **130733**Roll No:

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B.TECH.
(SEM VII) THEORY EXAMINATION 2019-20
DIGITAL IMAGE PROCESSING

Time : 3 Hours

Total Marks : 70

Note: Attempt all sections. If require any missing data; then choose suitably.

Section A**1. Attempt all parts of this question****(2*7=14 Marks)**

- a) What are different approaches of segmentation?
- b) What is image? Write the type of images.
- c) Give the operating modes for JPEG Format.
- d) List the drawback of Wiener Filter.
- e) Compare noisy image with blurred image.
- f) What do you understand by Weber Ratio? What does low weber ratio indicate?
- g) What are the issues involved for stereo imaging problem?

Section B**2. Attempt any three question from this section****(7*3=21 Marks)**

- a) What is image restoration? Draw and explain the basic image restoration. Give two area where image restoration can be applied
- b) What are linear and non-linear smoothing filters in spatial domains?
- c) What do you understand by Hit-Miss Transform and why they are used? Explain in brief.
- d) Describe fundamental operations of morphological image processing.
- e) Explain Laplacian filters.

Section C**3. Attempt any one question from this Section****(7*1=7 Marks)**

- a) Explain Physical Aspect of Image Acquisition with diagram in support of your answer.
- b) What do you mean by digital image representation? <https://www.aktuonline.com>

4. Attempt any one question from this Section**(7*1=7 Marks)**

- a) What is Image Transformation? Explain slant transform.
- b) Explain Image smoothing in frequency domain filtering.

5. Attempt any one question from this Section**(7*1=7 Marks)**

- a) Explain periodic noise reduction using band reject filter.
- b) Explain difference between restoration and enhancement. Does degradation of images result due to both?

6. Attempt any one question from this Section**(7*1=7 Marks)**

- a) What are different model of image compression? Explain with block diagram/
- b) Fidelity criteria is used evaluate the information loss during data compression? Explain

7. Attempt any one question from this Section**(7*1=7 Marks)**

- a) Explain Edge Detection Segmentation technique.
- b) Explain the rescaling and resampling. Differentiate between thinning and thickening.