Sub Code: REC072

Paper Id: | 130733 | **Roll No:** | | | | | | | | | | | | |

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 nodes 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?

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.