

B.Tech. SEM -VII Bio Medical 2014 Course (CBCS) : WINTER - 2018
SUBJECT: IMAGE PROCESSING

Day : Monday
Date : 26/11/2018

W-2018-2586

Time : 02.30 PM TO 05.30 PM
Max Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data, if necessary.

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- Q.1** a) Explain the image formation model with diagram. (05)
b) Draw the block diagram of components of Image Processing system. Write significance of each block. (05)

OR

- Q.1** Discuss Mathematical operations used in Digital Image Processing. (10)

- Q.2** a) Describe the method of unsharp masking and high boost filtering. (05)
b) Elaborate Image smoothing using frequency domain filters. (05)

OR

- Q.2** Discuss the following terms (10)
i) Local histogram processing
ii) Fundamentals of spatial filtering

- Q.3** a) Discuss in brief Imaging techniques-Subband coding. (05)
b) Derive the equation for Fast Wavelet Transform. (05)

OR

- Q.3** What is Image compression? Describe the functional block diagram of general image compression system. (10)

- Q.4** a) Discuss the terms convex hull and thinning. (05)
b) Write a note on gray scale morphology. (05)

OR

- Q.4** Describe Hit or Miss transformation and hole filling. (10)

- Q.5** a) Discuss global processing using Hough transform. (05)
b) How markers are used to control oversegmentation? (05)

OR

- Q.5** Discuss region based segmentation for partition of an image into regions. (10)

- Q.6** a) What is concept of pattern and pattern classes? (05)
b) Compare 2D and 3D images. (05)

OR

- Q.6** a) Describe the various Biomedical applications of DIP. (10)

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