B.TECH SEM – VII (2007 COURSE) (COMPUTER ENGG.) : SUMMER - 2018

SUBJECT: ELECTIVE- I IMAGE PROCESSING

Time: 02.30 PM TO 05.30 PM Day: Friday S-2018-2774 Date: 25/05/2018 Max. Marks: 80 N.B.: 1) Q. No. 1 and Q. No. 5 are COMPULSORY. Out of remaining questions answer any TWO questions from each section. Figures to the right indicate full marks. 2) Both the sections should be written in **SEPARATE** answer book. 3) 4) Assume data if necessary. **SECTION-I** 0.1 List and explain different image file formats. [04] a) List different image enhancement techniques in image processing. [05] b) Explain edge linking and boundary detection technique. [05] c) Explain fundamental steps in image processing. [06] Q.2a) b) What do you understand by sampling and quantization with respect to image [07] processing? How you will convert an analog image into a digital image? Explain steps of Homomorphic filtering with help of neat block diagram. Q.3 a) [06] Explain need of local histogram processing. [07] b) 0.4 a) Explain Prewitts and Sobel operator to find the Gradient. [06] b) Explain region splitting and merging. [07] **SECTION-II** Explain following morphological operation with example Q.5 [04] a) i) Erosion ii) Dilation Explain Walsh transformation. [05] **b**) List error free compression techniques. Explain any one. c) [05] Explain MISS transformation. Q.6 a) [06] Explain following image operations: b) [07]ii) Region filling i) Boundary Extraction List any two properties of 2D-DFT and prove any one of them. Q.7 [07] a) Discuss applications of Hadamard Transform. [06] b) List different types of redundancies in image. Explain any one. Q.8 a) [06]Explain LZW compression in detail. b) [07]