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Roll No.			Total No. of Pages : 02

Total No. of Questions: 09

B.Tech.(CSE) (2011 Onwards Elective-III) (Sem.-7,8)
DIGITAL IMAGE PROCESSING

Subject Code : BTCS-915

Paper ID: [A2997]
Time: 3 Hrs. Max. Marks: 60

### **INSTRUCTION TO CANDIDATES:**

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

## **SECTION-A**

# 1. Write briefly:

- a. Regional Descriptors
- b. Lossless Compression
- c. Image Degradation
- d. HSI Color Model
- e. Wavelet
- f. Homomorphic Filtering
- g. Image Coding
- h. Hough Transform
- i. Morphological Operations
- j. Edge

1 | M C o d e 7 1 9 0 7 (S 2 ) - 1 9 2 8

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#### **SECTION-B**

- 2. What are the various steps in image processing? Explain briefly.
- 3. Explain RGB and CMYK color models and their color range values. Elaborate their memory requirements.
- 4. Compare 'Homomorphic' and 'Inverse' Filtering. How do noise affect color channels?
- 5. What is the application of image histogram in digital image processing? Explain with example of Histogram.
- 6. What is region representation? How are regions represented and described?

### **SECTION-C**

- 7. What are the different applications of image segmentation? Explain different image segmentation techniques.
- 8. How do spatial filters help in enhancement of digital images? List and explain various types of spatial filters with examples.
- 9. What is need of error free compression? List various coding techniques to achieve this. Discuss **any two** in detail with example.

**2** | M C o d e 7 1 9 0 7 (S 2) - 1 9 2 8