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**Question Paper Code : 66081**

**M.E. DEGREE EXAMINATION, DECEMBER 2015/JANUARY 2016**

**Elective**

**Computer Science and Engineering**

**CP 7004 : IMAGE PROCESSING AND ANALYSIS**

**[Common to M.E. Computer Science and Engineering**

**(With specialization in networks)]**

**(Regulations – 2013)**

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL questions.**

**PART – A (10 × 2 = 20 Marks)**

1. Define the term : Image Processing.
2. What is a Digital Image ? List its properties.
3. What is meant by Quantization ?
4. What is Thresholding ?
5. What is meant by Morphing ?
6. How will you embed a given Text to an Image ?
7. What are Co-occurrence Matrices ? Where it is used ?
8. How are Ade's eigen filter approach used in Morphology ?
9. What are pseudo colors ?
10. What is the procedure in sharpening of color images ?

**PART – B (5 × 13 = 65 Marks)**

11. (a) Explain briefly the different Image file formats and its properties. (13)

**OR**

- (b) Discuss the fuzzy techniques for spatial filtering. (13)

12. (a) How will you apply Discrete Fourier Transform for Image Smoothing and Sharpening ? (13)

**OR**

- (b) What is Frequency Domain Noise Filters ? Where is it used ? (13)

13. (a) Explain the steps in Canny Edge Detection Algorithm. Illustrate with an example. (13)

**OR**

- (b) Explain briefly Adaptive Thresholding and Hysteresis Thresholding. (13)

14. (a) Explain briefly the Laws' Texture Energy Approach. (13)

**OR**

- (b) What is Median Filter based detection ? How it is carried out ? (13)

15. (a) Describe the steps involved in Image Segmentation based on color. (13)

**OR**

- (b) What is Digital Image Water-marking ? How are water-marking based images created ? Explain. (13)

**PART – C (1 × 15 = 15 Marks)**

16. (a) Explain the basic compression methods. How will you use these methods to compress a given Image without any compromise on its quality and security ? (15)

**OR**

- (b) What is Region Splitting and Merging ? How it is applied during Image Processing ? (15)