LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – **COMPUTER SCIENCE**

SECOND SEMESTER – NOVEMBER 2016

CS 2955 - DIGITAL IMAGE PROCESSING

Date: 14-11-2016 Dept. No. Max. : 100 Marks

Time: 01:00-04:00

Part A

Answer ALL questions **10 x 2 = 20**

1 Define Digital Image Processing.

2 What is Mac effect?

3 How cones and rods are distributed in retina?

4 Write 4 neighbors of a pixels with equations.

5 What is Salt pepper noise?

6. How a degradation process is modeled?

7. What is Data Compression ratio?

8. Write the core concept used in predictive coding.

9. What are Chain codes?

10. Name any three Boundary Descriptors.

Part B

Answer ALL questions **5 x 8 = 40**

11 a) Describe the various sets and logical operations involved in Digital Image Processing.

(OR)

b) Write short notes on Sampling and Quantization.

12 a) Illustrate the basic Gray level Transformations.

(OR)

b) Write about sharpening and smoothing on spatial filters.

13 a) Explain the Image Degradation and Restoration process.

(OR)

b) Give brief notes on singular value decomposition with suitable diagram.

14 a) What is Lossless compression? Differentiate it from Lossy compression.

(OR)

b) Explain Jpeg compression standards?

15 a) Explain any 2 Edge detection techniques.

(OR)

b) What are Fourier Descriptors? Explain it with relevant equations.

Part C

Answer any TWO questions **2 x 20 = 40**

16 a) Describe the Elements involved in Digital Image Processing with neat diagram.

b) Explain Noise models with its equations.

17 a) What are Homomorphic filters? Explain it with its applications.

b) Describe the Blind Image Restoration Technique.

18 a) Briefly explain the following Image representation techniques.

(i) Polygon approximation

(ii) Merging

(iii) Splitting.

****