

Code No: 127DU

**R15**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year I Semester Examinations, May/June - 2019**

**IMAGE PROCESSING AND PATTERN RECOGNITION**

**(Common to CSE, IT)**

**Time: 3 Hours**

**Max. Marks: 75**

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART- A**

**(25 Marks)**

- 1.a) What is Quantization? [2]
- b) Write a short note on Interpolation. [3]
- c) What is Erosion? [2]
- d) Explain briefly about Edge Detection. [3]
- e) Explain about Requirements of Image Compression. [2]
- f) What is Statistical Compression? [3]
- g) What are Polygonal Approximations? [2]
- h) Write a short note on Signatures. [3]
- i) Enumerate the Fundamental problems in Pattern Recognitions. [2]
- j) Write a short note on Methodologies of Pattern Recognitions. [3]

**PART-B**

**(50 Marks)**

2. Write detailed note on Sharpening Spatial Filters. [10]
- OR**
3. Explain in detail about Histogram Processing. [10]
4. Explain in detail about the following Morphological Algorithms:  
a) Skeletons                      b) Pruning [10]
- OR**
5. Write a detailed note on Segmentation by Morphological Watersheds. [10]
- 6.a) Explain in detail about Spatial Compression Techniques.  
b) Explain in detail about Pixel Coding. [5+5]
- OR**
7. Write a detailed note on Lossy Prediction Type Coding. [10]
8. Explain in detail about Regional Descriptors. [10]
- OR**
9. Write a detailed note on Principal Components for Description, Relational Descriptors. [10]
10. Explain in detail a simple Automatic Pattern Recognition Model. [10]
- OR**
11. Write a detailed note on Bayes Classifier for Normal Classifiers. [10]