

**Code No: 156ET****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, July - 2023****COMPUTER VISION AND ROBOTICS****(Computer Science and Engineering - IOT)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- 1.a) What is foreshortening? [2]
- b) Illustrate the functions of radiometry. [3]
- c) Explain derivative of Gaussian Filters. [2]
- d) Outline different types of texture analysis. [3]
- e) Define Image Rectification. [2]
- f) What is clustering based segmentation? [3]
- g) List out the limitation of EM algorithm. [2]
- h) How Hough Transform can be used to detect lines? [3]
- i) What is affine cameras? [2]
- j) Demonstrate direct camera calibration in computer vision? [3]

**PART – B****(50 Marks)**

- 2.a) Discuss the application of photometric stereo.
  - b) Compare Linear Colour space and Non-Linear Colour space. [5+5]
- OR**
3. Illustrate global shading models in detail. [10]
  4. Inspect pyramid texture matching in detail. [10]
- OR**
5. Examine feature extraction method in texture analysis in detail. [10]
  6. Analyze agglomerative clustering in image segmentation in detail. [10]
- OR**
7. Examine graph based image segmentation in detail. [10]
  8. Inspect the procedure for tracking people with particle filters. [10]
- OR**
9. Examine dynamic linear models in detail. [10]
  10. Discuss geometric hashing techniques in medical imaging. [10]
- OR**
11. Elaborate about elements of analytical euclidean geometry. [10]