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**Presidency University**

**Bengaluru**

**Ph.D. Course Work End Term Examinations – JAN-FEB 2025**

**Date**: 30-01-2025

**Time**: 09.30 AM TO 12.30 PM

**Max Marks**: 100

**Weightage**: 50%

**Semester**:

**Course Code**: ECE3029

**Course Name**: Image Processing

**Department:** SOCSE

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

**PART A**

**Answer all the Questions. Each question carries 10 marks. (6Qx 10M= 60M)**

|  |  |
| --- | --- |
| **1.** | Explain the adaptive thresholding method in image segmentation. |
| **2.** | What are the main techniques for edge detection in images? Provide examples. |
| **3.** | Discuss the importance of corner and interest point detection in image processing. |
| **4.** | Explain the role of morphological operations in noise removal? Provide an example. |
| **5.** | Explain Laws' texture energy approach for texture analysis. |
| **6.** | Describe the basic image compression techniques and their relevance. |

**PART B**

**Answer all the Questions. Each question carries 20 marks. (2Qx 20M= 40M)**

|  |  |
| --- | --- |
| **7.** | Discuss the process of color image processing. Include color models, color transformations, and noise reduction in your answer. |
| **8.** | Write an essay on image compression models, coding redundancy, and the role of watermarking in digital image protection. |