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# PRESIDENCY UNIVERSITY BENGALURU

## Department of Research & Development

### Mid - Term Examinations - AUGUST 2024

**Odd Semester:** Ph.D. Course Work

**Course Code:** ECE3029

**Course Name:** Image Processing

**Department:** SOCSE

**Date:** 13-08-2024

**Time:** 09.30am to 11.00am

**Max Marks:** 50

**Weightage:** 25%

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#### Instructions:

- (i) Read the all questions carefully and answer accordingly.
  - (ii) Do not write any matter on the question paper other than roll number.
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#### PART A (THOUGHT PROVOKING)

**Answer all the Questions. Each question carries 5 marks.**

**(4Qx 5M= 20M)**

1. Define image resolution. How is it related to image quality (CO:01 BL:01)
2. What is the role of a histogram in image processing? (CO:01 BL:01)
3. What is image sampling? How does it affect the quality of the image? (CO:02 BL:02)
4. Explain the term image enhancement with proper example. (CO:02 BL:02)

#### PART B (PROBLEM SOLVING)

**Answer all the Questions. Each question carries 10 marks.**

**(3Qx 10M= 30M)**

5. Discuss the ethical implications of using image processing techniques for surveillance and privacy invasion (CO:01 BL:03)
6. Explain how human visual perception influences the design of image enhancement algorithms. (CO:02 BL:03)
7. Analyze how bias can be introduced in image recognition systems. What are the consequences of biased image processing algorithms in real-world applications, such as facial recognition? (CO:03 BL:04)