

B. Sc DEGREE EXAMINATION

Sixth semester Choice Based Course–DIGITAL IMAGE PROCESSING (For B.Sc. Electronics)

Time: Three Hours

Maximum: 80 Marks

Part A

Answer **all** questions.

Each question carries 1 mark each.

1. Name an image compression standard.
2. What is image restoration?
3. The basic unit of an image is known as -----.
4. Give any two applications for image processing.
5. Which colour model is commonly used for printing?
6. What is union of N_4 and N_D pixels?
7. A high contrast image has ----- histogram.
8. A pixel p is said to be ----- to pixel q if they are connected.
9. Name one method for image segmentation?
10. In YIQ, I stand for -----.

Part B

Answer any EIGHT questions.

Each question carries 2 marks each.

11. Define digital image?
12. What is image compression?
13. What is image histogram?
14. What is meant by image digitalization?
15. Explain what are noises in a digital image?
16. Explain image restoration process?
17. What is meant by region growing?
18. Explain what are geometric transformations?
19. Define 2D-DFT. List any two properties of 2D-DFT.
20. Explain the terms path and path length?
21. What is meant by Contrast Stretching?
22. Explain how to detect a point in a digital image .

Part C (Short Essay Type)

Answer any SIX questions.

Each question carries 4 marks each.

23. Explain image histogram equalization.
24. Briefly explain the three types of pixel connectivity?
25. What are smoothing filters? Explain.
26. Explain image compression system with block diagram.
27. Explain what will happen if an image is subjected to following operations?
 - i. Addition of a constant value **K** to all pixels.
 - ii. Multiplying all pixels with a constant value **K**.
28. Explain a method for detecting edges in an image.
29. Discuss a method for image segmentation.
30. Explain the process of pseudo-color image processing.
31. Explain what is meant by data redundancy?

Part D (Long Essay)

Answer any TWO questions. 

Each question carries 15 marks each.

32. Explain different colour models.
33. Describe any two entropy coding methods.
34. Distinguish between spatial domain and frequency domain image processing with one example for each?
35. Write short on a) Pixel connectivity b) Weiner Filter c) Fractal image compression


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