



K26U 0240

Reg. No. :

Name :

Sixth Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Regular)
Examination, April 2026
(2023 Admission)

CORE COURSE IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
6B14AIML : Digital Image Processing

Time : 3 Hours

Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions. **Each** question carries 1 mark.

1. What do you mean by image acquisition ?
2. Define spatial filtering.
3. What are the advantages of Notch filters ?
4. What is image restoration ?
5. Expand TIFF.
6. Identify the benefits of digital watermarking.

(6×1=6)

PART – B
(Short Essay)

Answer **any six** questions. **Each** question carries 2 marks.

7. Differentiate between Simultaneous Contrast and Optical Illusion.
8. Define Euclidean distance between two pixels P and Q.
9. Identify the basic relationships between pixels.
10. Compare histogram equalization and histogram specification.
11. How to convert colors from RGB to HIS ?

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12. Give the Probability Density Function (PDF) of 'Rayleigh Noise'.
13. What do you mean by 'Noise' in image processing ? Identify any two sources of noise in an image.
14. What is Erosion and Dilation in morphological image processing ? (6×2=12)

PART – C
(Essay)

Answer **any four** questions. **Each** question carries **3** marks.

15. Explain Intensity-Level Slicing and Bit-Plane Slicing.
16. How to use the Histogram Statistics for Image Enhancement ?
17. Explain the steps for filtering in the Frequency Domain.
18. Discuss the RGB color model with a neat sketch of RGB color cube.
19. Describe the process of a general image compression system with a neat diagram.
20. Explain the fundamentals of image segmentation. (4×3=12)

PART – D
(Long Essay)

Answer **any two** questions. **Each** question carries **5** marks.

21. Discuss the steps in Digital Image Processing.
 22. Explain the types of image sharpening filters.
 23. What is spatial filtering ? Explain the different types of mean filters used in spatial filtering.
 24. Explain in detail about Huffman Coding and LZW coding. (2×5=10)
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