



QP CODE: 26019657



Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, MARCH 2026

Fourth Semester

M Sc Artificial Intelligence

Core Courses - AI010401 - DIGITAL IMAGE PROCESSING

2020 Admission Onwards

EB3A6CF7

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Explain how digital image can be represented.
2. What do you mean by image interpolation?
3. What is adjacency of a pixel?
4. Explain hadamard transform.
5. Differentiate linear and non-linear spatial filtering
6. Write brief note on Mean filters for image restoration.
7. Give the properties of the second derivative around an edge.
8. Write short note on Variable Length Coding.
9. What is structuring elements in morphological processing?
10. What do you mean by opening in morphological operation?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Explain different categories of digital image.
12. Discuss Gamma ray imaging.
13. Explain different methods for zooming.
14. State and prove the property of DFT a) spatial shift property b) convolution property.





15. Explain Gamma correction and its application.
16. Compare RGB, HSV and YIQ color model.
17. Discuss about JPEG standard.
18. Explain boundary representation in digital image processing.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. a) Explain in detail biological aspects of digital image processing. b) Explain image sampling and quantization.
20. a) Explain arithmetic operation performed on digital images. b) Explain affine transformation matrix.
21. a) Explain how a monochrome image can be enhanced by histogram. b) Differentiate Log and Power-Law transformations.
22. Explain various boundary representation methods.

(2×5=10 weightage)

