

(FOR THE CANDIDATES ADMITTED

23PCS314-

DURING THE ACADEMIC YEAR 2023

ONLY)

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : NOVEMBER 2024

MSC.COMPUTER SCIENCE

MAXIMUM MARKS: 75

SEMESTER-III

TIME : 3 HOURS

**23PCS314- DIGITAL IMAGE PROCESSING**

**SECTION – A**

**(10 X 1 = 10 MARKS)**

**ANSWER THE FOLLOWING QUESTIONS.**

**(K1)**

1. The smallest unit of a digital image or display is \_\_\_\_\_  
a) Line    b) Pixel    c) Perception    d) Radiant
2. A plot by the number of pixels for each tonal value is \_\_\_\_\_.  
a)Histogram    b)Shape    c) Graph    d)Tree
3. \_\_\_\_\_used for smoothing and sharpening of image by removal of high or low frequency components.  
a)Spatial Domain    b)Frequency Domain    c) Spatial Filtering    d)Periodic Noise
4. Images with more than two intensities can be coded using\_\_\_\_\_.  
a) Lossless Predicting Coding    b)Bit Plane Coding  
c) Spatial Filtering    d)Lossy Predictive coding
5. \_\_\_\_\_ Technique generates binary image with pixels values 0 and 1 only.  
a)Threshold    b) Region    c) Segmentation    d)Compression

**ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES**

**(K2)**

6. Define Digital Image Processing?
7. What is meant by Histogram?
8. What is spatial filtering?
9. What is Variable Length coding.
10. Define thresholding.

**SECTION – B**

**(5 X 5 = 25 MARKS)**

**ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

11. a) Explain the fundamental steps in Digital Image Processing?  
(OR)  
b) Explain the elements of Visual Perception?
12. a) Discuss the basics of Spatial Filtering?  
(OR)  
b) What is Smoothing Spatial Filters?Explain.

ethical paper

(CONT..2)

13. a) Examine Frequency Domain Filtering.  
(OR)  
b) Write about Direct Inverse Filtering.
14. a) Interpret the Error Free Compression?  
(OR)  
b) Explain Lossy Predictive Coding?
15. a) Write short note on Image Segmentation?  
(OR)  
b) Bring out on Region Based Segmentation?

**SECTION – C****(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4 (Or) K5)**

16. a) Describe the components of Image Processing System.  
(OR)  
b) Elaborate on Linear And Nonlinear Operations.
17. a) Explain Histogram Processing in detail.  
(OR)  
b) Summarize on combining Spatial Enhancement Method.
18. a) Enumerate the method of the Image Degradation.  
(OR)  
b) Describe the Richardson algorithm.
19. a) Discuss the elements of Information Theory.  
(OR)  
b) In detail, Explain Lossy Compression?
20. a) Discuss Line detection using the Hough Transform?  
(OR)  
b) Analyze Morphological Watershed Transform Segmentation.

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