FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2020 ONLY)   **REG.NO**

20UIT5E3

NGM COLLEGE (AUTONOMOUS) POLLACHI

END-OF-SEMESTER EXAMINATIONS: DECEMBER-2022

B. Sc-Information Technology   **MAXIMUM MARKS: 70**

V SEMESTER   **TIME: 3 HOURS**

PART III

DIGITAL IMAGE PROCESSING

SECTION – A   **(10 X1 = 10 MARKS)**

ANSWER THE FOLLOWING QUESTIONS
MULTIPLE CHOICE QUESTIONS   **(K1)**

1. What is Digital Image Processing?
    a) It's an application that alters digital videos
    b) It's a software that allows altering digital pictures
    c) It's a system that manipulates digital medias
    d) It's a machine that allows altering digital images

2. How is negative of an image obtained with intensity levels [0,L-1] with "r" and "s" being pixel values?
    a) $s = L - 1 + r$ b) $s = L - 1 - r$
    c) $s = L + 1 + r$ d) $s = L + 1 + r$

3. What are the basic quantities that are used to describe the quality of a chromatic light source _____
    a) Radiance, brightness and wavelength   b) Brightness and luminence
    c) Radiance, brightness and luminence   d) Luminence and radiance

4. Compressed image can be revoked back by _____.
    a) image enhancement   b) image decompression
    c) image contrast   d) image equalization

5. Digital function derivatives are defined as _____.

    a) difference   b) multiplication   c) addition   d) division

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES   **(K2)**

6. Write the Purpose of Image Processing Toolbox.

7. Define Contrast sketching.

8. What are the characteristics that are used to distinguish one color from the other?

9. What is JPEG file?

10. Define Morphological Image Processing.

SECTION – B **(5 X 4 = 20 MARKS)**
ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Explain how to convert classes in digital image processing with an example.
    (OR)
    b) Explain about reading images, displaying images and writing images in Digital image processing.

12. a) Compare Histogram Processing and Function Plotting in Image Restoration with an examples.
    (OR)
    b) Examine restoration in noise with Spatial Filtering having the inputs as Direct Inverse Filtering.

13. a) Examine color Image representation in MATLAB in Image processing with an example.
    (OR)
    b) Describe color transformations in image processing with an example.

14. a) Sketch JPEG compression in Image compression with an example.
    (OR)
    b) How video compression plays an important role in DIP.

15. a) Compare Dilation and Erosion in Image morphological Image processing.
    (OR)
    b) Explain how segmentation in Watershed Transform used in image morphological Image processing.

SECTION – C **(4 X 10 = 40 MARKS)**
ANSWER ANY FOUR OUT OF SIX QUESTIONS.
(16TH QUESTION IS COMPULSORY AND ANSWER ANY THREE
QUESTIONS FROM Q.NO: 17 TO 21) **(K4) OR (K5)**

16. Justify array indexing concept in Digital image processing with an example.

17. Summarize M-Function Programming in Digital image processing.

18. Classify noise models in Image Restoration and Reconstruction.

19. Formulate how converting is done between color spaces in image processing

20. Explain with an example how code redundancy is done in image compression ? Explain

21. Categorize thresholding in image segmentation.

A-11 ***********************