

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

THIRD SEMESTER M.C.A DEGREE EXAMINATION (S), MAY 2022**(2020 SCHEME)****Course Code: 20MCAT233****Course Name: Digital Image Processing****Max. Marks: 60****Duration: 3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. Explain the difference between image processing and computer vision.
2. List and explain the components of a general-purpose image processing system.
3. Explain the basic grey level transformation functions.
4. What are the various types of images?
5. Explain the difference between DFT and FFT.
6. How can we represent an image in frequency domain?
7. Write down the concepts of image restoration.
8. What is the use of Wiener filter in image restoration?
9. Define image thresholding.
10. What is the difference between region based and edge based image segmentation?

PART B*(Answer one full question from each module, each question carries 6 marks)***MODULE I**

11. Discuss the concepts of image sampling and quantization. (6)

OR

12. Explain hardware-oriented color models. (6)

MODULE II

13. Discuss the role of histogram processing in image. (6)

OR

14. Explain the different frequency domain sharpening filters with the help of neat diagrams. (6)

MODULE III

15. Elaborate FFT based smoothing and sharpening filters. (6)

OR

16. How do you find the 1D-DFT and 2D-DFT of an image? Explain. (6)

MODULE IV

17. Illustrate the various image compression techniques. (6)

OR

18. Describe the various types of noise probability density functions. (6)

MODULE V

19. With the help of examples describe the different morphological operations. (6)

OR

20. a) Which filter is used for line detection? Explain in detail. (3)
b) Explain (3)
 i) Marr - Hildreth edge detector (3)
 ii) Canny edge detector
