Reg. No. :

Question Paper Code:97B03

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Seventh Semester

Biomedical Engineering

19UBM703- Image processing techniques

(Regulations 2019)

Duration: Three hours   Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1.	How is image acquisition done in a digital image processing?	CO1- U
2.	Write the expression to find the number of bits to store a digital image	CO1- U
3.	Define contrast stretching	CO1- U
4.	Define intensity level slicing	CO1- U
5.	Classify the types of noise models?	CO2- App
6.	Demonstrate the formula for guassian noise	CO2- App
7.	Define compactness.	CO1- U
8.	Demonstrate the formula for diameter of boundary.	CO2- App
9.	Define bit plane coding.	CO1- U
10.	Define run length coding.	CO1- U

PART – B (5 x 16= 80Marks)

11. (a) Illustrate the basic relationships between pixels in detail with suitable examples.   CO3- Ana   (16)

Or

(b) Explain the color model which is suitable for hardware implementation with neat diagram.   CO3- Ana   (16)

12. (a) Write short notes on the following terms along with a neat diagram. CO1- U (16)
        (i) Image negatives
        (ii) Log transformations
        (iii) Power law transformations

Or

  (b) Explain image sharpening and smoothing filters in spatial domain. CO1- U (16)

13. (a) Illustrate how the estimation of degradation function is done in detail. CO3-Ana (16)

Or

  (b) Illustrate the minimum mean square error filtering in detail. CO3-Ana (16)

14. (a) Demonstrate how edge detection performed? Explain hough transform and discuss how the edge points are linked. CO2- App (16)

Or

  (b) Assess how an image is segmented using region splitting and merging algorithm in detail and how the segmented object is represented by chain codes. CO2- App (16)

15. (a) Explain any four image recognition methods in detail. CO1- U (16)

Or

  (b) Define image compression? Explain any four variable length coding Compression schemes. CO1- U (16)

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