C

Reg. No. :

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Fifth Semester

Information Technology

19UIT925 - IMAGE VISION

(Regulations 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 20 = 100 Marks)

1. (a) Do the following: CO2- App   (20)

(a) Give a continuous function for implementing the contrast stretching transformation the equation. In addition to m, your function must include a parameter, E, for controlling the slope of the function as it transitions from low to high intensity values. Your function should be normalized so that its minimum and maximum values are 0 and 1,respectively

Or

(b) The following 8 –bit images are (left to right) the H, S and I   CO2- App   (20)
Component images. The numbers indicate gray-level values. Answer the following questions, explaining the basis for your answer in each. If it is not possible to answer a question based on the given information, state why you cannot do so

(i) Give the gray-level values of all regions in the hue image

(ii) Give the gray level value of all regions in the saturation image

(iii) Give the gray level values of all regions in the intensity image
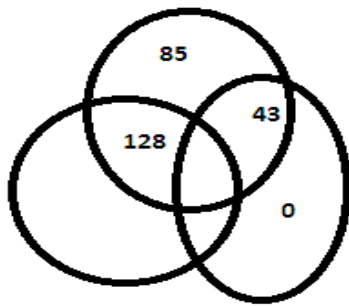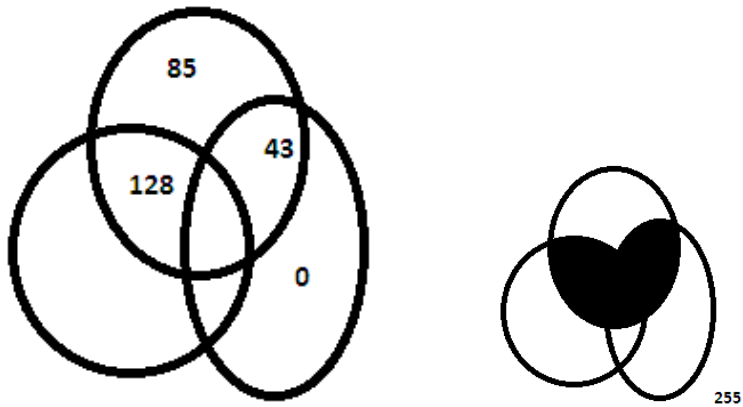
2. (a) Explain spatial filtering in image enhancement. CO1- U (20)

Or

(b) Describe in detail about the use of wiener filter or least mean square filter in image restoration? CO1- U (20)

3. (a) Perform histogram equalization on the following 8x8 image. The gray level distribution of the image is given below (10) CO3- Ana (20)

Gray Level	0	1	2	3	4	5	6	7
No of Pixels	8	10	10	2	12	16	4	2

Or

(b) Propose a technique for detecting gaps of length ranging between 1 and K pixels in line segments of a binary image. Assume that the lines are 1 Pixel thick. Relate your Techniques on 8 –Neighbor connectivity analysis, rather than attempting to construct masks for detecting the gaps. CO3- Ana (20)

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4. (a) Explain about the Global processing via the Hough Transform for edge linking   CO1- U   (20)

Or

(b) Explain the opening operation in image morphology with real time examples?   CO1- U   (20)

5. (a) Propose a technique for detecting gaps of length ranging between 1 and K pixels in line segments of a binary image. Assume that the lines are 1 Pixel thick. Base your Techniques on 8 –Neighbor connectivity analysis, rather than attempting to construct masks for detecting the gaps   CO3- Ana   (20)

Or

(b) Compare the performance of First and second order derivative in the detection of point, line and edge detection   CO3- Ana   (20)

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