Started on	Friday, 30 June 2023, 9:06 AM
State	Finished
Completed on	Friday, 30 June 2023, 9:21 AM
Time taken	15 mins 39 secs

Question 1

Complete

Marked out of 1.00

Which of the following can be done by point processing?

Select one:

- a. Darken image
- b. Negative image
- c. All of other options
- d. Brighten image

Question 2

Complete

Marked out of 1.00

Histogram equalization is mainly used for…

Select one:

- a. Making an existing image brighter
- b. Improving contrast of an existing image
- c. Making an existing image darker
- d. Reducing contrast of an existing image

Question 3

Complete

Marked out of 1.00

Given that “img” is an 2D array of float grayscale values from 0.0 to 1.0. Insert a line into the blank in Python to reduce the global brightness of the image? (We will perform clipping after the loops.)

```
for x in range(width):
    for y in range(height):
        …
```

Select one or more:

- a. img[y][x] -= 0.5
- b. img[y][x] *= 0.5
- c. img[y][x] /= 0.5
- d. img[y][x] += 0.5

Question 4

Complete

Marked out of 1.00

What is the order of main steps when performing frequency filtering?

Select one:

- a. Preprocessing, Filter, Inverse Fourier transform, Post processing, Fourier transform
- b. Preprocessing, Filter, Fourier transform, Post processing, Inverse Fourier transform
- c. Preprocessing, Fourier transform, Filter, Inverse Fourier transform, Post processing
- d. Preprocessing, Inverse Fourier transform, Filter, Fourier transform, Post processing

Question 5

Complete

Marked out of 1.00

The dilation operation can be used to…

Select one:

- a. All of other choices
- b. Fill small holes inside objects
- c. Join very near objects
- d. Make objects bigger

Question 6

Complete

Marked out of 1.00

High pass filter is to…

Select one:

- a. Eliminate both low frequency components and high frequency components
- b. Eliminate low frequency components and keep high frequency components
- c. Eliminate high frequency components and keep low frequency components
- d. Keep both low frequency components and high frequency components

Question 7

Complete

Marked out of 1.00

For each pixel in the input image, what is point processing?

Select one:

- a. An operation that takes that pixel and produces one output pixel
- b. An operation that takes that pixel with some neighbor pixels and produces some output pixels
- c. An operation that takes that input pixel and produces some output pixels
- d. An operation that takes that pixel with some neighbor pixels and produces one output pixel

Question 8

Complete

Marked out of 1.00

Why do we have optical illusions?

Select one:

- a. Because our brain interprets images based on adaptive visual cues
- b. Because our eyes cannot see diagonals, vertical and horizontal lines at the same time
- c. None of the other answers
- d. Because our eyes cannot distinguish between different shadow levels

Question 9

Complete

Marked out of 1.00

A grayscale digital image is

Select one:

- a. A 3D matrix of discrete picture elements
- b. A 2D matrix of discrete picture elements
- c. A 2D matrix of continuous picture elements
- d. A 1D vector of continuous picture elements

Question 10

Complete

Marked out of 1.00

High frequency components mainly contain information about …

Select one:

- a. The detail of objects
- b. The color of objects
- c. The shape of objects
- d. The brightness of objects

Question 11

Complete

Marked out of 1.00

The erosion operation can be used to…

Select one:

- a. Make objects rounder
- b. Separate objects
- c. All of other choices
- d. Make holes inside objects bigger

Question 12

Complete

Marked out of 1.00

Morphological operations can …

Select one:

- a. Improve the brightness of the image
- b. Improve the shape of the objects
- c. Improve the resolution of the image
- d. Improve the contrast of the image

Question 13

Complete

Marked out of 1.00

Why do we get more blurry results when we decrease the diameter of a low pass filter?

Select one:

- a. All of other options
- b. Because the low frequency components contain the basic shape
- c. Because the high frequency components contain the detail of the object
- d. Because more components in the high frequency is eliminated, thus less detail is preserved

Question 14

Complete

Marked out of 1.00

For each pixel in the input image, what is spatial filtering?

Select one:

- a. An operation that takes that input pixel and produces some output pixels
- b. An operation that takes that pixel with some neighbor pixels and produces some output pixels
- c. An operation that takes that pixel with some neighbor pixels and produces one output pixel
- d. An operation that takes that pixel and produces one output pixel

Question 15

Complete

Marked out of 1.00

Consider an input image (having little gaussian noise) for the segmentation problem. What should be a proper pipeline to preprocess it ?

Select one:

- a. None of the other options
- b. Thresholding, histogram equalization, noise reduction using average filter
- c. Thresholding, noise reduction using average filter, histogram equalization
- d. Noise reduction using average filter, histogram equalization, thresholding

Question 16

Complete

Marked out of 1.00

What morphological operations can be used for removing small pepper(black) noise?

Select one or more:

- [ ] a. Dilation
- [x] b. Erosion
- [x] c. Opening
- [ ] d. Closing

Question 17

Complete

Marked out of 1.00

Low pass filter is mainly used for…

Select one:

- (•) a. Blurring the image
- ( ) b. Enhancing edges of the objects in the image
- ( ) c. Brightening the image while preserving detail
- ( ) d. Enhancing the contrast of the image while preserving detail

Question 18

Complete

Marked out of 1.00

What morphological operations can be used for removing small salt (white) noise?

Select one or more:

- [ ] a. Erosion
- [ ] b. Opening
- [x] c. Dilation
- [x] d. Closing

Question 19

Complete

Marked out of 1.00

What type would best describe the following filter?

```
-1 -4 -1
 0  0  0
 1  4  1
```

Select one:

- ( ) a. Median filter
- (•) b. Edge detection filter
- ( ) c. Blurring filter
- ( ) d. Averaging filter

Question 20

Complete

Marked out of 1.00

What statement is correct about the closing morphological operation?

Select one or more:

- [ ] a. Suitable for removing small points and thin lines
- [ ] b. Suitable for separating connected objects
- [x] c. Suitable for filling holes
- [x] d. Suitable for connecting separated objects

◄ Announcements

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