

Section 1 of 2

DIP Quiz -2022 Batch Nov 2024

B *I* U [Link](#) [Image](#)

Form description

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Section 2 of 2

All Questions are compulsory

Description (optional)

Choose the correct statement:



☒ Multiple choice

B *I* U [Link](#) [Image](#)

- ☐ Statement 1: Erosion shrinks the connected sets of 1s of a binary image ✗
- ☐ Statement 2: Dilation shrinks the connected sets of 1s of a binary image ✗
- ☐ Statement 3: Dilation expands the connected sets of 1s of a binary image. ✗
- ☐ Statement 4: Erosion expands the connected sets of 1s of a binary image. ✗
- ☐ Statement 1 and 2 ✗
- ☐ Statement 1 and 3 ✓ ✗
- ☐ Statement 2 and 4 ✗
- ☐ Add option or [add "Other"](#)

☒ Answer key (2 points)



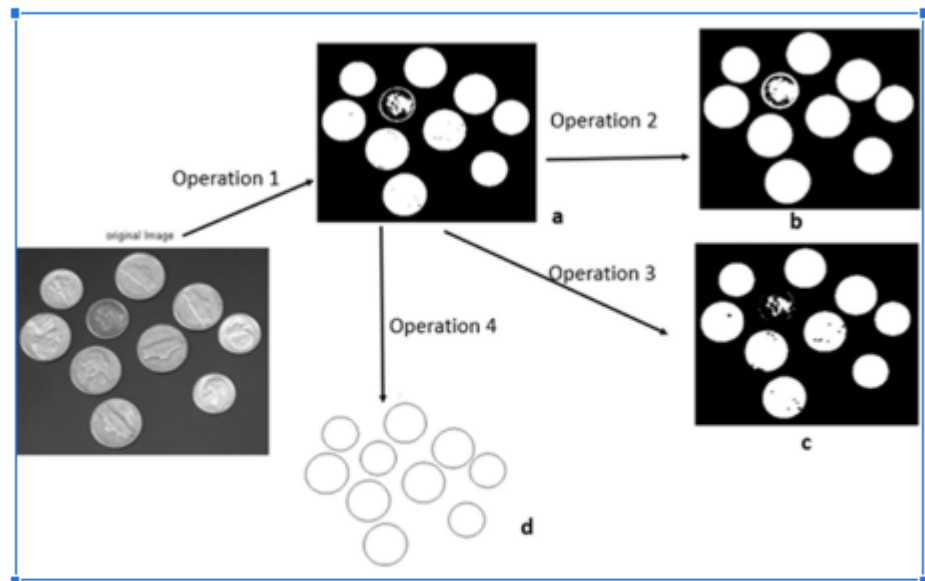
Required



In the following picture which one is the correct match between the figure and operation



Multiple choice



- ☒ Operation 1: Segmentation, Operation2: Dilation, Operation 3: Erosion, Operation 4: ... ✓ ✕
- ☐ Operation 1: Segmentation, Operation2: Erosion, Operation 3: Dilation, Operation 4: Region... ✕
- ☐ Operation 1: Region/Hole Filling, Operation2: Dilation, Operation 3: Erosion, Operation 4: S... ✕
- ☐ Operation 1: Region/Hole Filling, Operation2: Erosion, Operation 3: Dilation, Operation 4: S... ✕

The original image is shown in extreme left of the Figure. Match the correct Operation with that of the correct Output Image obtained after applying an operation. That is, what output will be produced when operation given in column 2 will be performed on Original image. Match the correct option.



☒ Multiple choice ▼

Original Image

Operation	
A.	Closing
B.	Erosion
C.	Opening
D.	Dilation

1
2
3
4

Output Image

- ☐ A- 3, B-1, C-4, D-2
☐ A- 2, B-1, C-4, D-3
☐ A- 1, B-2, C-3, D-4
☐ A- 3, B-4, C-1, D-2

✓

×

×

×

×

Question



☒ Multiple choice ▼

Principle sources of noise arise during image

- a. destruction
- b. degradation
- c. restoration
- d. acquisition

- ☐ a
☐ b
☐ c
☐ d

×

×

×

✓

×

×

×

×

In the following figure, original image (top left) was operated using filter. Choose the correct statement



Multiple choice



- ☐ A: Low pass filter of radius =30, B= Low pass filter of radius =15 and C=Low pass filter of r... ✗
- ☐ A: High pass filter of radius =5, B=High pass filter of radius =15 and C=High pass filter of r... ✗
- ☐ A: Low pass filter of radius =5, B= Low pass filter of radius =15 and C=Low pass filt... ✓ ✗
- ☐ A: High pass filter of radius =30, B=High pass filter of radius =15 and C=High pass filter of ... ✗

Following are the factors that affects the suitability of the histogram for guiding the choice of the threshold. Choose the incorrect option



Multiple choice

B *I* U

- ☐ the separation between peaks; ✗
- ☐ the noise content in the image; ✗
- ☐ the relative size of objects and background; ✗
- ☐ the uniformity of the illumination and reflectance ✗
- ☐ All of them are correct ✗
- ☐ All of them are incorrect ✓ ✗
- ☐ Add option or [add "Other"](#)

Which of the following shows three basic types of functions used frequently for image enhancement?



Multiple choice

B *I* U [G](#) [X](#)

- ☐ Linear, logarithmic and inverse law X
- ☐ Power law, logarithmic and inverse law ✓ X
- ☐ Linear, logarithmic and power law X
- ☐ Linear, exponential and inverse law X
- ☐ Add option or [add "Other"](#)

Structuring elements runs over image's



Multiple choice

B *I* U [G](#) [X](#)

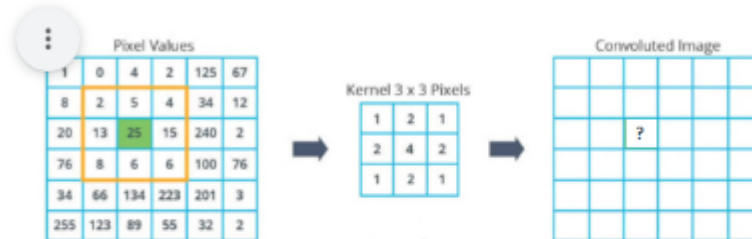
- ☐ rows X
- ☐ columns X
- ☐ Every element ✓ X
- ☐ Edges X
- ☐ Add option or [add "Other"](#)

Image patch (under orange square) was convolved with the 3 X 3 kernel shown below in the figure. What will be the resultant output (marked "?" in the image shown) in the convolved image?



☒ Multiple choice

B *I* U



☐ 190

×

☐ 198



×

☐ 185

×

☐ 180

×

☐ Add option or [add "Other"](#)

For the morphological operations, which of the following statement is true?



☒ Multiple choice

B *I* U

☐ Opening of image A by element B includes the dilation of A by B followed by the erosion o...

×

☐ Closing of image A by element B includes the erosion of A by B followed by the dilation of ...

×

☐ Opening eliminate the small holes and fill the gaps.

×

☐ Closing breaks the narrow isthmuses and eliminates the thin protrusions.

×

☐ All statements are false



×

☐ All statements are true

×

☐ Add option or [add "Other"](#)

Using the morphological operations, the boundary extraction can be performed by:



Multiple choice

- ☐ Dilation of image by structuring element followed by subtraction of the result from the ori... X
- ☐ Erosion of image by structuring element followed by addition of the result with the original... X
- ☐ Erosion of image by structuring element followed by dilation of the result with the original ... X
- ☐ Dilation of image by structuring element followed by erosion of the result with the original ... X
- ☐ None of the options ✓ X

The difference between Sampling and Quantization:
Chose the correct option



Multiple choice

- ☐ sampling rate determines the spatial resolution of the digitized image, while the qu... ✓ X
- ☐ sampling rate determines the number of grey levels in the digitized image, while the quan... X
- ☐ Both determines the special resolution of the image X
- ☐ No statement is correct X

The non linear spatial filters whose response is based on ordering of the pixels contained is called _____



Multiple choice

B *I* U

- ☐ Box filter X
- ☐ Gaussian Filter X
- ☐ Order-statistic filter ✓ X
- ☐ Laplacian Filter X

Lets you have a $M \times N$ pixels image, where $M=N=128$. This image contains $L=8$ gray level with the following distribution (see fig 1).

From Fig 2: Find the gray scale transformation $S=T(R)$ that yields a uniform Histogram.



Multiple choice



Fig 1

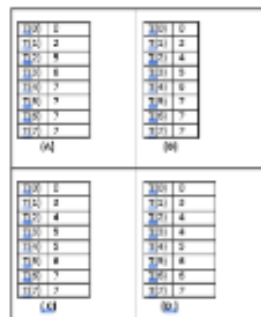


Fig 2

☐ A

×

☐ B

✓

×

☐ C

×

☐ D

×

()