

ID No 13943

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Subject DIP

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Question 1: (a)

Answer:

Gray Level Slicing:

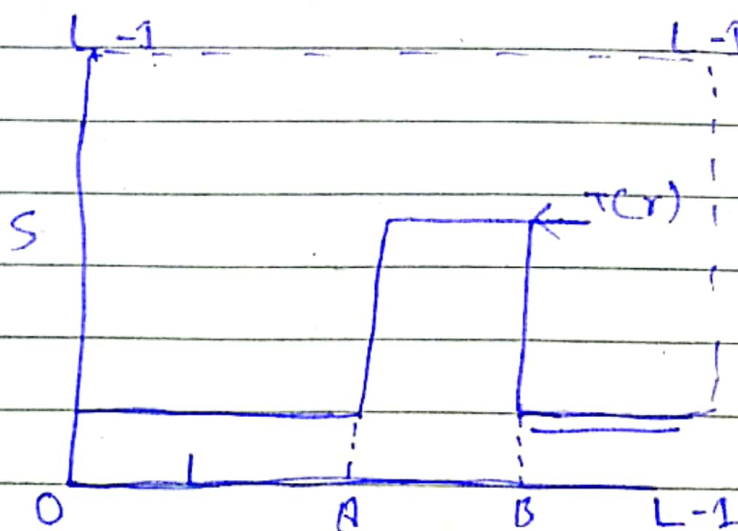
Is equivalent to band pass filtering. It manipulates group of intensity level in an image up to specific range by diminishing rest or by leaving them alone. This transformation is applicable in medical images and satellite images such as x-ray films, CT scan

Explanation:

There are two different approaches are adopted for gray level slicing

① Gray Level Slicing without background:

It display high values in the specific region of an image and low value to other regions by ignoring background.

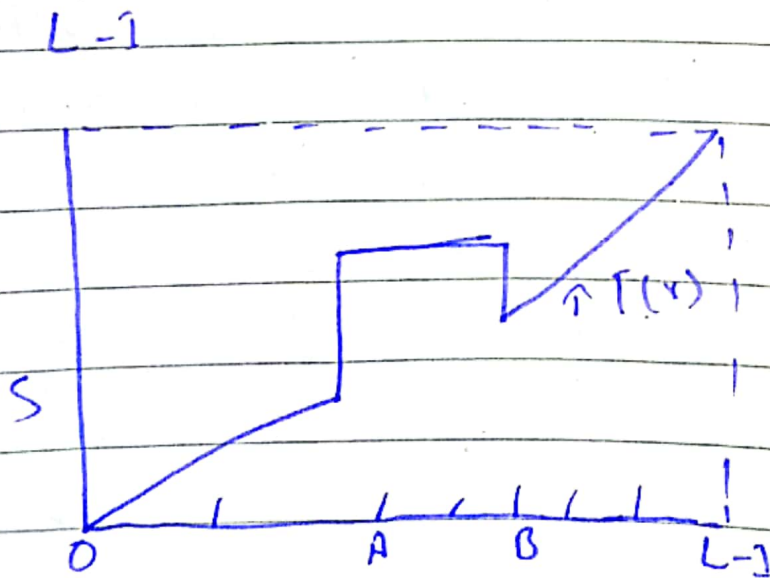


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Range $[A, B]$ of gray level by ~~reducing~~
reducing all other to a constant level.

Gray Level slicing with Background:

range $[A, B]$ by preserving all other
level. It display high value in specific
region of an image and original gray
level to other region by preserving
background. Highlight



Range $[A, B]$ by preserving all
other levels

Question 1: (b)

Answer:

Yes there is some other cases in which the details will be more visible in negative pictures. On the negative image the lightest darkest area appear lightest.

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Qes

Question 2:

Answer:

~~The~~ ~~is~~
In the give picture it's enhanced by the histogram equalizer technique.

Image Appearance:

In histogram equalizer technique the adjustment of constant of the image take place. This techniques improves the ~~the~~ ~~mean~~ image appearance by scaling out the intensity range of the image. ~~Then~~ Through the ~~reassignment~~ reassignment of pixel value, the distribution on the histogram is ~~is~~ stretched out the produce a more uniformly distribution.

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Question 3:

Solution

$$P(x, y) = (6, 1)$$

$$Q(s, t) = (3, 7)$$

$$\Rightarrow D_4(P, Q) = |x-s| + |y-t|$$

$$= |6-3| + |1-7|$$

$$= 3 + 6$$

$$= 9$$

$$\Rightarrow D_8(P, Q) = \max(|x-s|, |y-t|)$$

$$= \max(|6-3|, |1-7|)$$

$$= \max(3, 6)$$

$$= \max(6)$$

$$= 6$$

$$\Rightarrow D_e(P, Q) = \sqrt{(x-s)^2 + (y-t)^2}$$

$$= \sqrt{(6-3)^2 + (1-7)^2}$$

$$= \sqrt{9 + 36}$$

$$= \sqrt{45}$$

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Question 4: (a)

Answer:

Histogram acts as a graphical representation of the tonal distribution in image. If we look at an image a viewer will be able to judge the entire tonal distribution at glance well. In digital image processing the histogram is used for graphical representation of a digital image. Now a days image histogram is present in digital cameras photographs ~~we~~ use these to see the distribution of tones captured.

Question 4: (b)

Answer:

Pic a: Hgm 2

Pic b: Hgm 1

Pic c: Hgm 4

Pic d: Hgm 3