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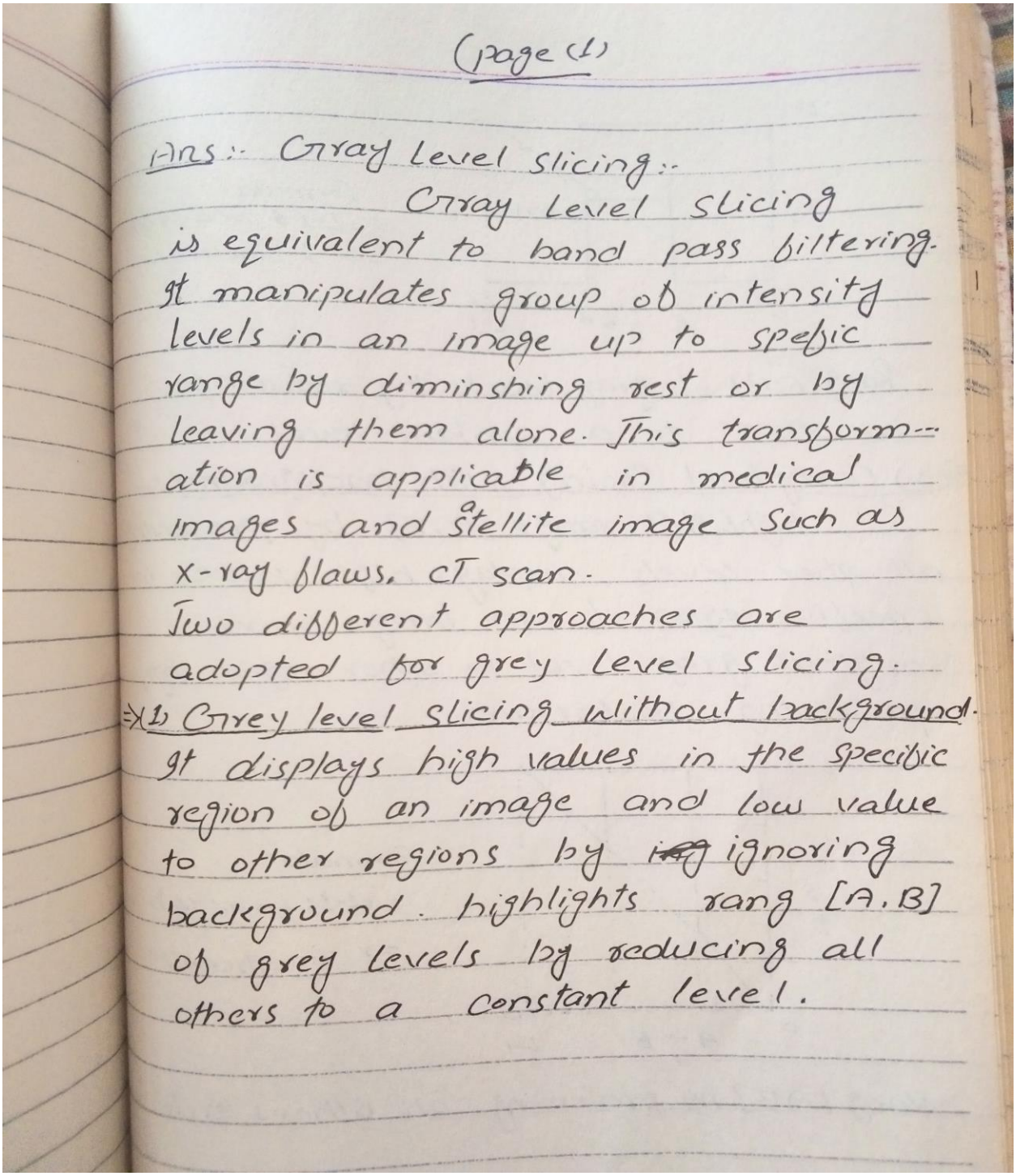
Q1:

a).What is Grey Level Slicing? Explain in your own words with suitable example.



(page (1)

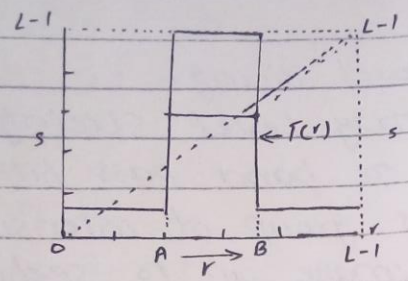
Ans:- Gray level slicing:-

Gray level slicing is equivalent to band pass filtering. It manipulates group of intensity levels in an image up to spefic range by diminshing rest or by leaving them alone. This transform-- ation is applicable in medical images and stellite image such as x-ray flaws, CT scan.

Two different approaches are adopted for grey level slicing.

=> 1) Grey level slicing without background.

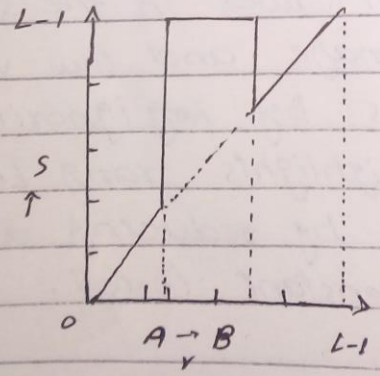
It displays high values in the specific region of an image and low value to other regions by ~~ig~~ ignoring background. highlights rang [A, B] of grey levels by reducing all others to a constant level.



formula
$S = L-1$; for $a \le r \le b$
$= 0$; otherwise

Rang [A,B] of gray levels by reducing all others to a contant level.

⇒(2) Grey level Slicing with background :-
highlights range of [A, B] by preserving all other levels displays high values in specfic region of an image and original grey level to other region by preserving background.

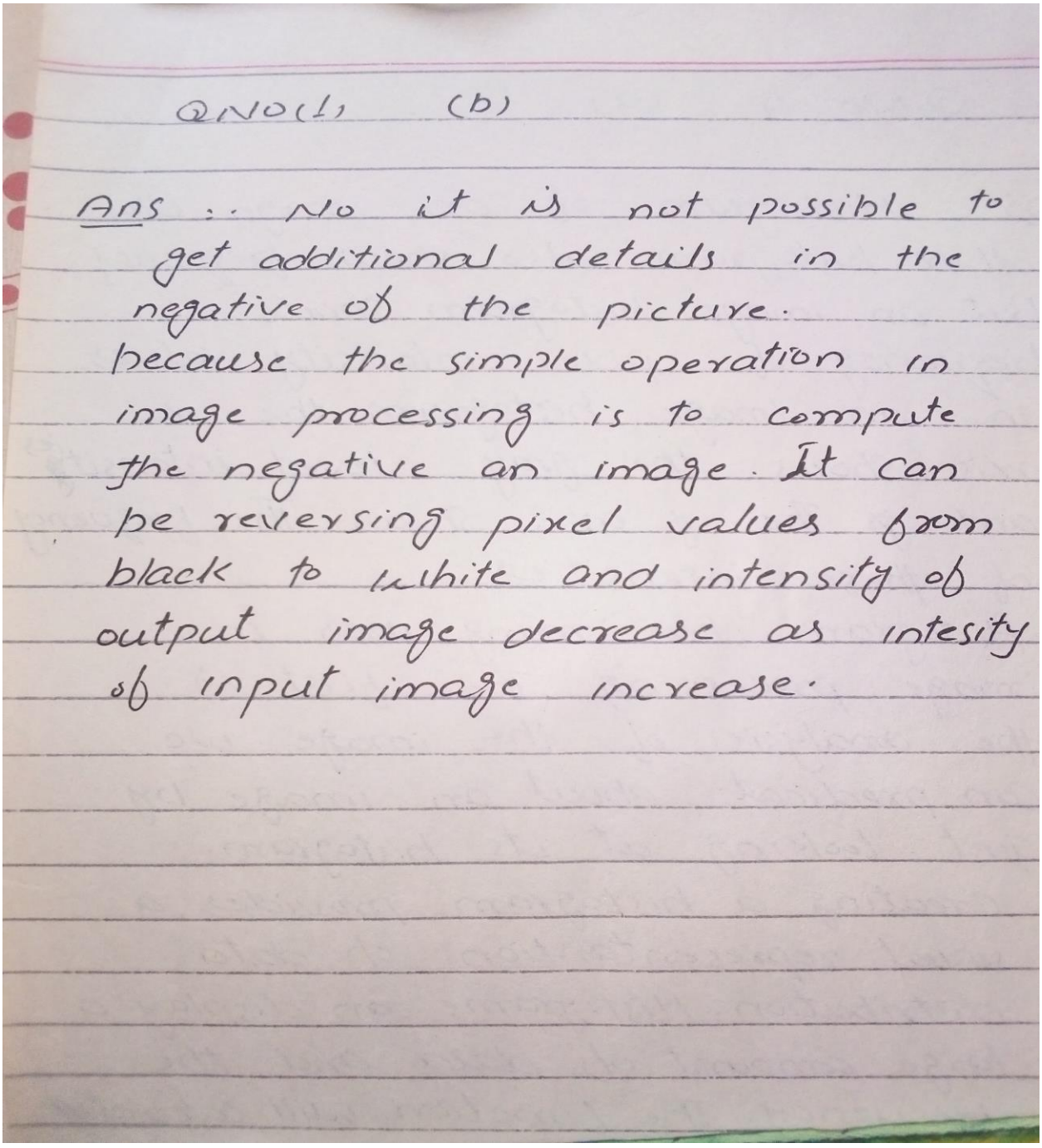


formula
$S = L-1$; for $a \le r \le b$
$= r$; otherwise.

Rang [AB] by preserving all others levels.

Q1

b.Is it possible to get additional details in the Negative of a picture? Justify your answer with suitable example.

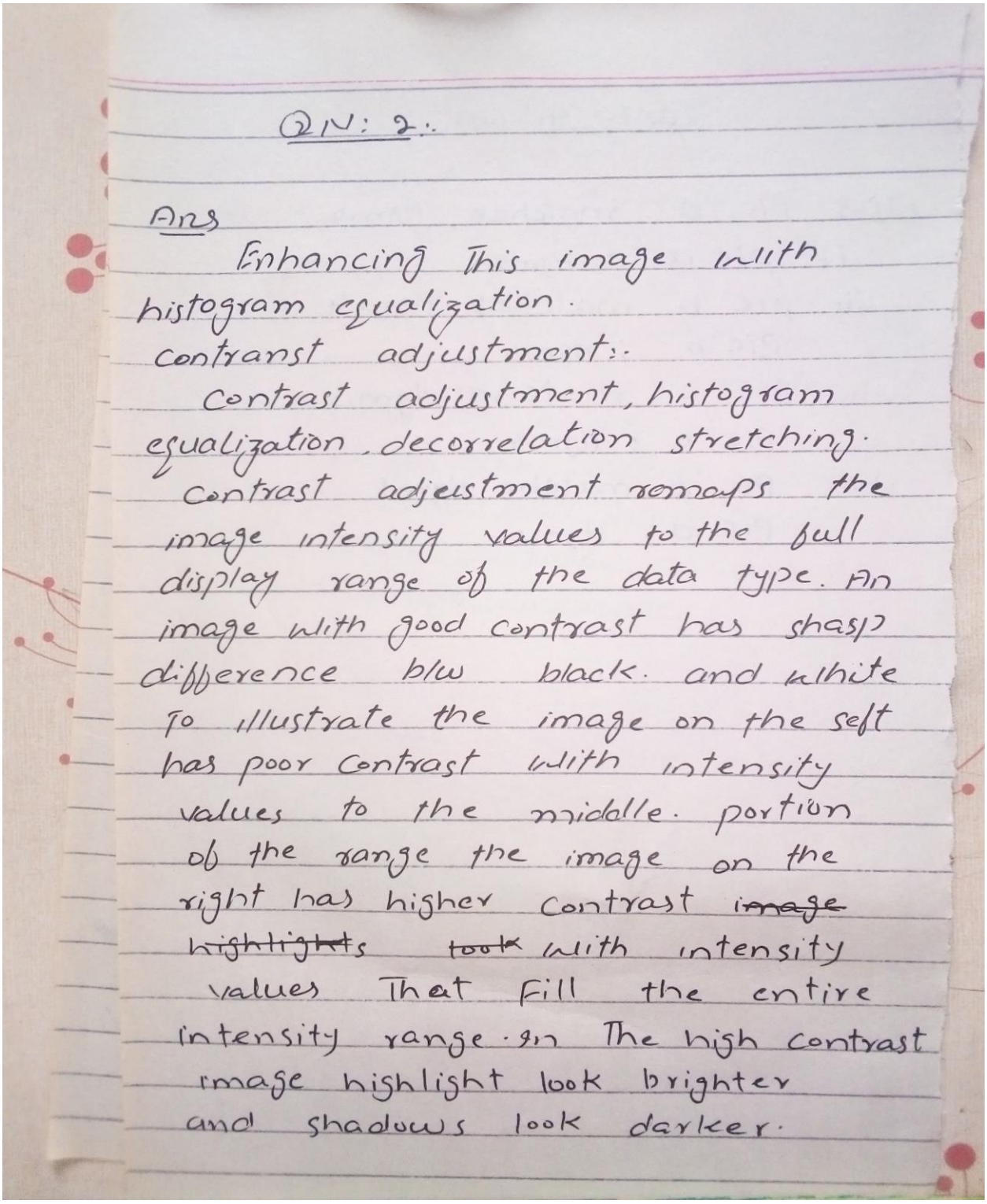


Q.NO(1) (b)

Ans :. No it is not possible to get additional details in the negative of the picture. because the simple operation in image processing is to compute the negative an image. It can be reversing pixel values from black to white and intensity of output image decrease as intesity of input image increase.

Question #2

Consider the picture given below:



Q.N: 2:.

Ans

Enhancing This image with histogram equalization.

contranst adjustment:.

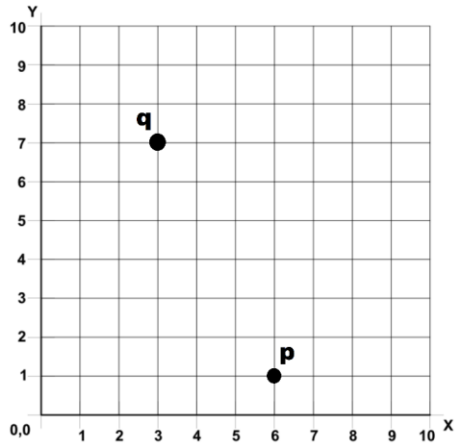
Contrast adjustment, histogram equalization, decorrelation stretching.

Contrast adjustment remaps the image intensity values to the full display range of the data type. An image with good contrast has shasp difference blw black. and white To illustrate the image on the seft has poor contrast with intensity values to the middlle. portion of the range the image on the right has higher contrast ~~image highlights look~~ with intensity values That Fill the entire intensity range. in The high contrast image highlight look brighter and shadows look darker.

Question #3

Find the following for the points ‘p’ & ‘q’ given on grid:

1)Euclidean Distance 2)City Block Distance 3)Chessboard Distance



Q3

Ans:-

=> Euclidean distance b/w P and Q:

$De(P,Q) = \sqrt{[(x-s)^2 + (y-t)^2]}$

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

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

$= \sqrt{36+9}$

$De(P,Q) = \sqrt{45}$

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

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

=> D_4 distance (city-block distance

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

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

$= 6 + 3$

$D_4(P,Q) = 9$

=> Chessboard distance (D_8 distance)

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

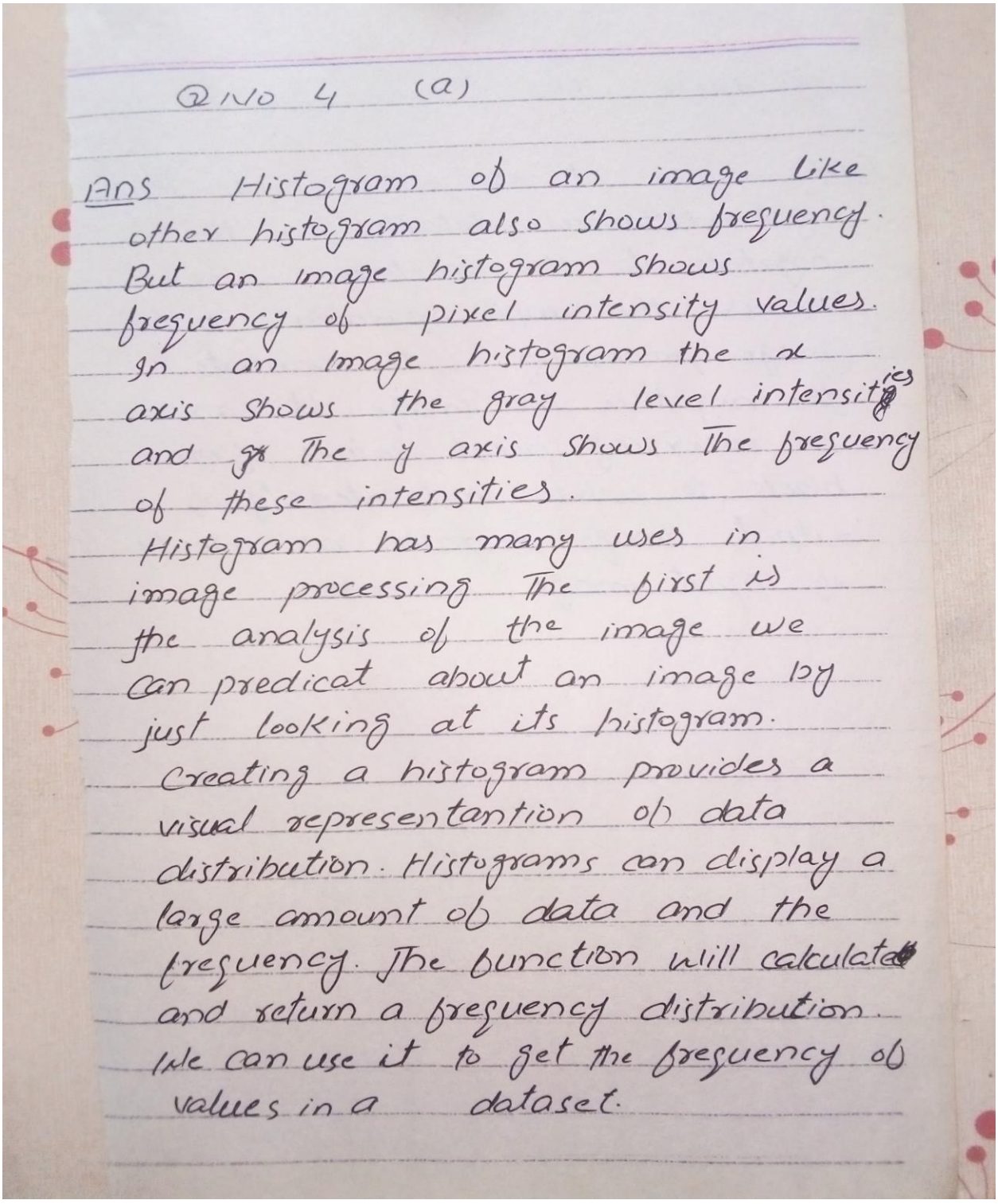
$= \max(|1-7|, |6-3|)$

$= \max(6, 3)$

$D_8(P,Q) = \max(6)$

Question #4

a).What does a Histogram of an image shows? How is it useful for processing an image?



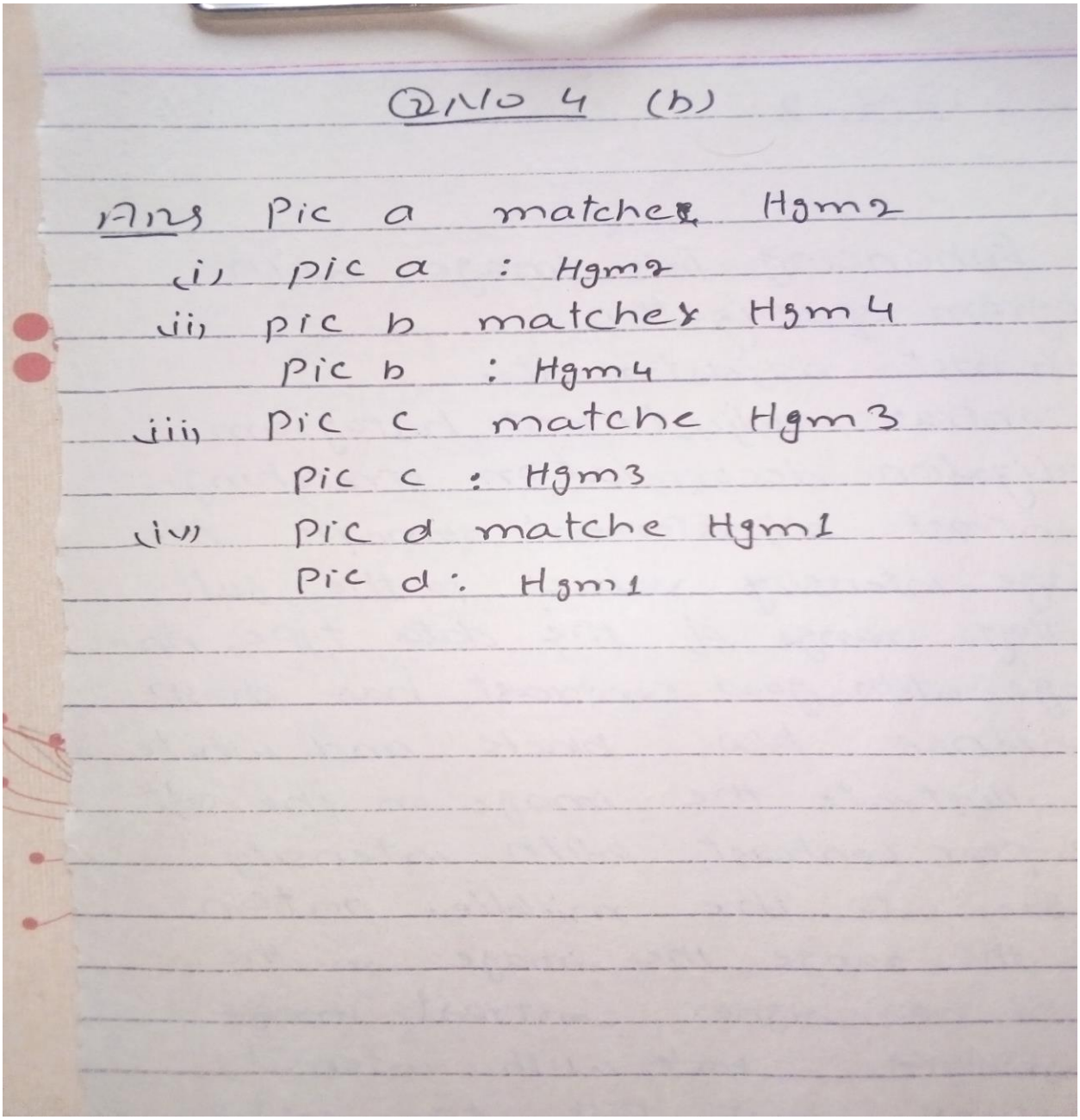
Q NO 4 (a)

ANS Histogram of an image like other histogram also shows frequency. But an image histogram shows frequency of pixel intensity values. In an image histogram the x axis shows the gray level intensities and the y axis shows the frequency of these intensities.

Histogram has many uses in image processing The first is the analysis of the image we can predicat about an image by just looking at its histogram.

Creating a histogram provides a visual representantion of data distribution. Histograms can display a large amount of data and the frequency. The function will calculate and return a frequency distribution. We can use it to get the frequency of values in a dataset.

Question #4 part (b)



Q.No 4 (b)

Ans Pic a matches Hgm2

(i) pic a : Hgm2

(ii) pic b matches Hgm4

pic b : Hgm4

(iii) Pic c matche Hgm3

Pic c : Hgm3

(iv) Pic d matche Hgm1

Pic d : Hgm1