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1. **1 Answer:**

S1 S2

0 0 0 0 0 0 0 1 1 0

1 0 0 1 0 0 1 0 0 1

1 0 0 1 0 1 1 0 0 0



0 0 1 1 1 0 0 0 0 0



0 0 1 1 1 0 0 1 1 1

X

Y



a) Give sets S1, S2 are not 4 adjacent because the X does not have any 4 adjacent intensity values ‘1’s in S2 and as well Y does not have any 4 adjacent intensity values ‘1’s in S1. So, the sets are not 4 adjacent.

b) Give sets S1, S2 are 8 adjacent because the X does have any 8 adjacent intensity values ‘1’s in S2 and as well Y does have any 8 adjacent intensity values ‘1’s in S1. So, the sets are 8 adjacent.

c) Give sets S1, S2 are m adjacent because the X and Y are the diagonal neighbours and the 4 connect of X intersection 4 connect of Y gives us a Null set. So, the sets are m-adjacent.

**2 Answer:**

a)

3 1 2 1 (q)

2 2 0 2

1 2 1 1

(p) 1 0 1 2

* We cann’t find the distance between the P and q points because there is no path between p and q by travelling in 4 adjacent way in give set of V.

3 1 2 1 (q)

2 2 0 2

1 2 1 1

(p) 1 0 1 2

* The path length between the p, q is 4 by 8-adjacent

3 1 2 1 (q)

2 2 0 2

1 2 1 1

(p) 1 0 1 2

* The path length between the p, q is 5 by m-adjacent

b)

3 1 2 1 (q)

2 2 0 2

1 2 1 1

(p) 1 0 1 2

* The path length between the p, q is 6 by 4-adjacent

3 1 2 1 (q)

2 2 0 2

1 2 1 1

(p) 1 0 1 2

* The path length between the p, q is 4 by 8-adjacent

3 1 2 1 (q)

2 2 0 2

1 2 1 1

(p) 1 0 1 2

* The path length between the p, q is 6 by m-adjacent

**3 Answer:**

**a)**

IF f(I,j) = \* and g(I,j) = \*

IF f(I,j) ≠ \* and g(I,j) = \*

IF g(I,j) ≠ \* and f(I,j) = \*

IF f(I,j) ≠ \* and g(I,j) ≠ \*

b)

EXTADD(f, g) of the given values f =  ; g = 



Is “**9”**  because IF g(I,j) ≠ \* and f(I,j) = \* then the result is g(I,j)

**4 Answer:**

The transformation function is **Histogram(X) = T + Histogram(x)**

Histogram(X) is the new histogram values

Histogram(x) is the old histogram values

Transformation curve of the shifting the graph by T

Input

Output

T T+1 T+2 T+3 T+4

**5 Answer:**

The New histogram after the transformation is

0 249 250 252 254 255