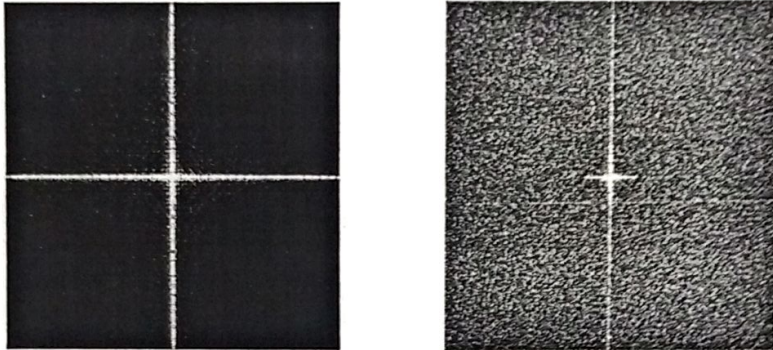


Minor 2
ELL715
(2018-19)

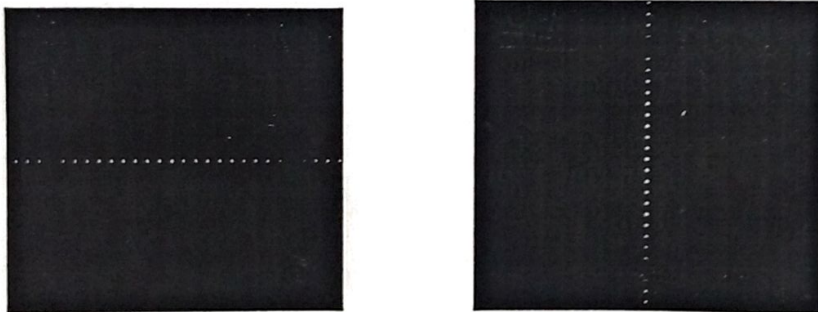
It is closed book exam, All question carry Equal marks

1. Compute the DCT directly from DFT for 1-D signal. Now, generalize the result for image i.e. 2D signal.
2. Observe the pair of images given below. This pair shows the Fourier transform (magnitude spectrum) of an input image (left) and transformed image (right). Find the transformations done on the input image?

(a)



(b)



3. An old movie is to be restored. Frames of the movie contain black spots which we wish to remove by median filtering. Given figure shows a representative example of a small region of a frame of the movie.

0	20	0	17
25	20	20	17
13	15	0	20
0	17	25	20

- (a) Apply median filtering using a 3×3 window to the image of the figure below. Assume that pixel values are zero outside the image.

