10EC763 – Image Processing

Assignment-III

Note:  
i) Write the assignment in a A4 size paper  
ii) Mention your USN, name and section on the top right corner of first page  
iii) Answer any Eight Questions. Question no. 12 is mandatory.  
iv) Submit the assignment on or before 11.00 AM, Tuesday, 14/11/2017

1) Explain the concept of Inverse filter and its drawback.

2) Write a short note on Weiner Filter (Minimum Mean Square Error Filter)

3) Explain Homomorphic Filtering.

4) With a neat block diagram explain the steps involved in Frequency domain filtering.

5) Explain basic frequency domain filters and their properties. (also include ringing effect)

6) With the help of a neat block diagram, explain image restoration and degradation model.

7) Write a short note on estimation of degradation model.

8) Explain Walsh-Hadamard and KL Transform.

9) List out and explain any three properties of unitary transform.

10) What is an unitary transform? Prove that a 8 point DFT is an unitary transform.

11) List out and explain any three properties of Fourier Transform.

12) Briefly explain the following:
   
   i. need for adaptive filters
   ii. adaptive noise reduction filter
   iii. adaptive median filter
   iv. alpha trimmed mean filter
   v. noise models
   vi. periodic noise and its estimation
   vii. DCT and its properties