THAPAR INSTITUTE OF ENGINEERING TECHNOLOGY

(Deemed to be University)

Department of Electronics and Communication Engineering

Tutorial Sheet -10

Signals & Systems–UEC404

---

1. Find the z-transform of the signal $g[n] = |n|a^{|n|}$
2. Find the circular convolution of the two sequences $x_1[n] = \{1,2,2,1\}$ and $x_2[n] = \{1,2,3,1\}$.
3. Find the 4-point DFT of the sequence
   $x[n] = 6 + \sin(\frac{2\pi n}{N})$ where n= 0, 1, 2, … N-1.
4. Find the 8-point DFT of {2, 1, 2, 1} using DIF-FFT algorithm.
5. Find the 8-point DFT of $x(n) = 2^n$ using DIT-FFT algorithm.