Thapar Institute of Engineering & Technology, Patiala

Department of Electronics and Communication Engineering

UEC639 – Digital Communication

B. E. (Third Year): Semester-V (ENC)

Tutorial-5

Q1	With the help of proper mathematical expressions, explain the concept of inter-symbol interference at the receiver of a digital communication system. Also explain the reason of ISI.
Q2	Explain the Nyquist criteria for distortion less baseband transmission in time-domain. Use this expression the derive Nyquist criteria for distortion less baseband transmission in frequency domain
Q3	A communication channel of bandwidth 75 kHz is required to transmit binary data at a rate of 0.1 Mb/s using raised cosine pulse shape. Determine the roll-off factor α.
Q4	What is the difficulties of ideal solution of pulse shaping for distortion less baseband transmission? How practical solution solve those difficulties. Explain with proper mathematical and graphical concept.
Q5	For an input bit sequence 1001101, determine the output "ck" of duobinary coder with and without precoding. Then apply the decision rule to obtain the output binary sequence for both cases.