Pardeep Kumar

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY WAKNAGHAT

T-1 EXAMINATION (FEBRUARY 2019)

B.Tech 5th Sem. (ECE)

COURESE CODE: 10B11EC511

COURSE NAME: Digital Communications

MAX. MARKS: 15

COURSE CREDITS: 4

MAX. TIME: 1 Hr.

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. Draw and explain the basic building blocks of digital communication system. Discuss the advantages of digital communication systems over analog communication systems. **(2+1=3)**

Q2. Draw and discuss an ideal eye pattern in detail. **(3)**

Q3(a). The binary data 1011001110 has to be transmitted over the channel. Represent the encoding of the data using following line codes:

a) Unipolar NRZ   b) Bipolar RZ   c) Manchester   d) Differential Manchester **(0.5*4=2)**

Q3(b). How are bit rate and baud rate related to each other? **(1)**

Q4. What is matched filtering? Discuss the use of matched filter in digital communication. **(1+2=3)**

Q5. Define quantization. What is the drawback of uniform quantization? How can it be overcome? Derive an expression for quantization noise. **(0.5+0.5+0.5+1.5=3)**