

D. Alon

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS-2022

B.Tech- VI Semester (ECE/CSE/IT)

COURSE CODE: 18B11EC611

MAX. MARKS: 25

COURSE NAME: Wireless and Data Communication

COURSE CREDITS: 03

MAX. TIME: 1 Hour 30 Min

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. Explain the multipath fading scenario that occurs in a wireless communication system. Differentiate among diffraction, reflection, and scattering in multipath fading scenario.

[CO1] [5 Marks]

Q.2 What is the significance to compute RMS delay spread and maximum delay spread in the wireless channel? Calculate the RMS and maximum delay spread of the wireless channel (multipath fading) having three multiple paths with delay and power profiles of 1 μ sec and 0dB, 3 μ sec and 10dB, and 7 μ sec and -20dB respectively.

[CO3] [5 Marks]

Q.3 Which fading occurs in GSM and WCDMA systems? Explain the answer with a suitable explanation.

[CO3] [5 Marks]

Q.4 How cyclic redundancy check (CRC) is used for error detection? Show the CRC generation at transmitter and checking process at receiver for data bit stream of 100100 and divisor polynomial is $1 + X^2 + X^3$.

[CO2] [4 Marks]

Q.5 Differentiate between

- (a) Flat v/s Frequency selective fading
- (b) OSI v/s TCP/IP model
- (c) Circuit v/s Packet switching

[CO1, CO2] [6 Marks]