

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- February -2019

B.Tech. VIII Semester

COURSE CODE: 18B1WEC834

MAX. MARKS: 15

COURSE NAME: Fundamentals of Next Generation Communication System

COURSE CREDITS: 03

MAX. TIME: 1 HRS

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

Q.1 Explain frequency division duplexing and time division duplexing. [2]

Q.2 Differentiate between various generations of mobile communication with their standards, data rate and application. [3]

Q.3 a) What is deep fade effect in Rayleigh fading channels?

b) When any signal is transmitted in Rayleigh fading channel, calculate the probability, for signal attenuation less than 15 dB. [2 + 1]

Q.4 Show that in multipath fading channels, attenuation and phase are independent random variable. Also find out the joint PDF. [3]

Q.5 a) Explain BER in communication system.

b) Derive the expression for BER in terms of SNR when bit 1 was transmitted in wired line communication system.

c) Compute the value of SNR (in dB) required for achieving probability of BER=.0001

[1 + 2 + 1]