

Roll No.

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. ECE (Wireless Communication) (2018 Batch) (Sem.-2)**ADVANCED WIRELESS COMMUNICATION**

Subject Code : MTWC-103-18

M.Code : 76067

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.

2. Each question carries TWELVE marks.

- Q1. a) What is fading? List and explain various types of small scale fading. 6
b) Differentiate between frequency flat and frequency selective fading. 6
- Q2. a) Derive the expression of complex fading coefficient for narrowband signal. 6
b) Explain the Rician and Rayleigh fading channel models. 6
- Q3. a) Explain the modulator and demodulator block diagrams of QPSK system. 8
b) Explain all the characteristics of AWGN channel. 4
- Q4. a) Derive the expression of probability of error for BPSK system. 8
b) Arrange the digital modulation schemes BPSK, 16-PAM, 8-MPSK, 16-QAM in the increasing order of their respective error probabilities. 4
- Q5. a) Explain the process of multicarrier modulation with overlapping sub-channels. 6
b) What are the different challenges in multicarrier systems? Explain in detail. 6
- Q6. Explain in detail :
a) Use of cyclic prefix in OFDM system 4
b) Frequency offset synchronization accuracy in OFDMA system. 4
c) Random frequency hopping in OFDMA system. 4
- Q7. a) Prove that the OFDM system converts the delay spread channel into a set of parallel fading channels, using the concept of cyclic prefix. 9
b) Explain the need of IFFT block in OFDM transmitter block diagram. 3
- Q8. Determine the error probability for different fading channels with diversity reception. 12

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.