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Question Paper Code: 56401

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Electronics and Communication Engineering

15UEC601-WIRELESS COMMUNICATION SYSTEMS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. What is the advantage of frequency reuse? CO1- R
(a) increased capacity (b) limited spectrum is required
(c) same spectrum may be allotted to another network (d) all of the above
2. Doppler spread refers to CO2- R
(a) signal fading due to Doppler shift in the channel (b) failure of message transfer
(c) large coherence time (d) all of the above
3. Why the cyclic prefix is required in OFDMA? CO3- R
(a) to ensure the symbol time is an integer number (b) to help overcome multipath ISI
(c) to maintain orthogonality (d) to make OFDMA scalable

4. Equalization process includes CO4 -R
- (a) maximum likelihood sequence estimation (b) equalization with filters
- (c) pseudorandom sequence estimation (d) both (a) and (b)
5. Second generation of wireless standard is mentioned as _____ CO5- R
- (a) OFDM (b) GSM (c) Amps (d) CDMA

PART – B (5 x 3= 15Marks)

6. What is handoff? What are the types of handoff? CO1- R
7. What are the various propagation mechanisms in wireless channel. CO2- R
8. Find the 3dB bandwidth of a Gaussian LPF used to produce 0.25 GMSK with a CO3- R
channel data rate of $R_b = 300\text{kbps}$
9. List some of the diversity schemes CO4- R
10. Why do we go for 3G from 2G? CO5- R

PART – C (5 x 16= 80Marks)

11. (a) Compare all the multiple access techniques CO1- App (16)
- Or
- (b) Discuss in detail the cellular concepts CO1- App (16)
12. (a) Explain the different parameters of mobile multipath channels CO2- U (16)
- Or
- (b) Explain in detail about the two ray ground reflection model for CO2- U (16)
path logs analysis.
13. (a) Draw and discuss the structure of wireless communication CO3- Ana (16)
channel link

Or

- (b) Elaborate the OFDM principle in detail CO3- Ana (16)
14. (a) Explain non linear equalizer with neat diagram. CO4-U (16)
- Or
- (b) (i) Discuss the concept of diversity. CO4- U (8)
- (ii) Write notes on spatial diversity and polarization diversity. CO4- U (8)
15. (a) What are the various technologies and standards used in wireless networks? Explain in detail about the security issues faced in the wireless systems. CO5- U (16)
- Or
- (b) Give the basics and architectures of 2G. CO5- U (16)

