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**Question Paper Code: 35806**

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

Fifth Semester

Information Technology

01UIT506 – WIRELESS COMMUNICATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define hand off.
2. What is meant by footprint?
3. What are Large-scale propagation models?
4. State the use of outage probability.
5. Define digital modulation.
6. What are narrowband channels?
7. State the function of adaptive equalizers?
8. Define transmit diversity.
9. Define multiplexing.
10. What is OFDM?

PART - B (5 x 16 = 80 Marks)

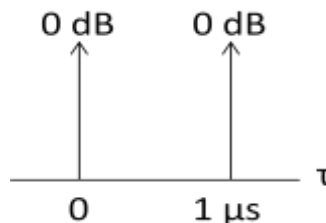
11. (a) (i) Explain in detail about the various Hand Off strategies. (8)
- (ii) If a signal-to-interference ratio of  $15\text{dB}$  is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is (i)  $n=4$  (ii)  $n=3$ . Assume that there are six co-channel cells in the first tier, and all of them are at the same distance from the mobile. Use suitable approximations. (8)

Or

- (b) Discuss briefly about the various methods for improving average and capacity in cellular systems. (16)
12. (a) Discuss about combine path loss and shadowing model techniques. (16)

Or

- (b) Explain in detail about empirical path loss models (16)
13. (a) (i) Explain briefly with neat diagram about spread spectrum sliding correlator measurement of small scale fading. (8)
- (ii) Compute the RMS delay spread for the following power delay profile.  
(a)  $P(\tau)$



- (b) If BPSK modulation is used, what is the maximum bit rate that can be sent through the channel without needing an equalizer? (8)

Or

- (b) Write about impulse response model of a multipath channel in detail. (16)
14. (a) Explain various diversity techniques used in wireless communication. (16)

Or

- (b) (i) Explain maximum likelihood sequence estimation equalizer in detail. (10)
- (ii) Compare all adaptive equalization algorithms. (6)
15. (a) (i) Illustrate the block diagram of IS-95 transmitter. (8)
- (ii) Give a detailed description of OFDM transceiver. (8)

Or

- (b) Write a case study for representation of IEEE 802.11a wireless LAN elaborately on par with recent trends and standards. (16)

