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Roll No.

CS-8303

B. E. (Eighth Semester) EXAMINATION, June, 2012

(Computer Science & Engg. Branch)

WIRELESS NETWORKS

(Elective – III)

(CS-8303)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. All questions carry equal marks.

1. (a) Explain the radio propagation mechanism in mobile communication. 10
- (b) In a communication system of carrier frequency 2 GHz, calculate the received power at a distance of 1 km in dBm when the transmitted power is 0.5 W. Calculate also its path loss and delay. Assume antenna gain as 1.8. 10

Or

2. (a) Explain the different developments that took place in mobile communication from first to third generation. 10
- (b) Discuss briefly the properties of wireless medium. 10

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3. (a) Describe the frequency reuse in cellular communication system. How can it be implemented to increase the capacity of the cellular communication system ? 10
- (b) Give a brief note on network planning for CDMA system. 10

Or

4. (a) Explain cellular topology. Discuss the technical issues while planning for a cellular network. 10
- (b) What is signal-to-interference ratio ? How is it calculated and write its use in a cellular radio system ? 10
5. (a) What are the orthogonal Walsh codes ? Why is synchronization among the users required for CDMA ? 10
- (b) The message signal $x(t) = \sin(100t)$ modulates the carrier signal $c(t) = A \cos(2\pi f_c t)$. Using amplitude modulation, find the frequency content of the modulated signal. 10

Or

6. (a) What is the difference between the guard band and the guard time and why are they important in a cellular system ? Explain clearly. 10
- (b) Describe the important features of GSM standards. 10
7. (a) Compare HYPERLAN 2 and Bluetooth. 10
- (b) Explain the functions of various layers of WLAN and the protocol architecture. 10

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Or

8. (a) What are the MAC services of IEEE 802.11 that are not provided in the traditional LANs such as 802.3 ?
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- (b) What are the five major challenges for implementation of wireless LANs ?
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9. (a) Draw and explain the frame format structure of Bluetooth.
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- (b) Discuss the interference range in terms of interference between Bluetooth and 802.11.
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Or

10. Explain briefly the following :
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- (i) Adhoc Network
 - (ii) 3G Network
 - (iii) Home RF
 - (iv) IEEE 802.15 WPAN