4. a) How do you decide the range of a guard channel? It is a function of the carrier frequency? Explain clearly.
   b) What is the difference between the guard band and the guard time and why are they important in a cellular system?
   c) Find the Walsh functions for 16-bit code.

5. a) A TDMA system uses a 270.833kbps data rate to support eight users per frame
   (i) What is the raw data rate provided for each user?
   (ii) If guard time and synchronization occupy 10.1kbps, determine the traffic efficiency.
   b) Is it possible to jam CDMA. Explain clearly also explain concept of FSK and QPSK.
   c) Is it possible to use a composite TDMA/CDMA scheme. If your answer yes/no justify.

6. a) What is the fundamental principle and use of spread spectrum?
   b) In IMSI, why is a temporary ID used? Explain
   c) How do you differentiate between different types of handoff?

7. a) How do you ensure that two adjacent piconets do not use the same frequency happing sequence?
   b) Explain IEEE 802.11 with PHY and MAC layer.
   c) What do you understand by wireless ATM? Explain.

8. a) Compare hyper LAN 2 and Bluetooth.
   b) Can you apply different adhoc network routing protocols to a scatter net? Explain
   c) What are the difference between 2.5G and 3G network? Explain with specific conditions.

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CS - 8303(GS/NGS)

B.E. VIII Semester

Examination, June 2014

Wireless Network

(Elective-III)

Time : Three Hours

Maximum Marks : 70

Note: Do any five each carry equal marks.

1. a) How can you compensate for the impact of the Doppler effect in a cellular system?
   b) A receiver is tuned to 1GHz transmission and receives signals with Doppler frequencies ranging from 10Hz to 50Hz when moving at a speed of 80km/hr. What is the fading rate?

2. a) What is diversity reception? How can it be used to combat multipath?
   b) What should be a relationship between call arrival rate and service rate when a cellular system is in a steady state? Explain clearly.

3. a) Prove that $\Delta = R\sqrt{3N}$ also explain cell sectoring?
   b) What are the difference between adjacent channel interference and co-channel interference? Explain with suitable diagrams.