

Code No: C9304**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.Tech I - Semester Examinations, March/April-2011****WIRELESS COMMUNICATIONS AND NETWORKS****(SYSTEMS AND SIGNAL PROCESSING)****Time: 3hours****Max. Marks: 60**

Answer any five questions
All questions carry equal marks

- - -

- 1.a) Describe the evolution of wireless radio communication systems.
- b) If 20 MHz of total spectrum is allocated for a duplex wireless FDD cellular telephone system and each simplex channel has 25 KHz RF bandwidth, find:
 - i) The number of duplex channels.
 - ii) The total number of channels per cell site, if $N = 4$ cell reuse factor is used. [12]

- 2.a) Explain the following types of spread spectrum multiple access techniques.
 - i) FHMA
 - ii) CDMA.
- b) Determine the maximum throughput that can be achieved using ALOHA and slotted ALOHA protocols. [12]

- 3.a) Differentiate between wireless and fixed telephone networks.
- b) List out the main features of various generations of wireless networks. [12]

- 4.a) Explain the common channel signaling network architecture.
- b) Describe an integrated services digital network with the help of block diagram. [12]

- 5.a) Explain how a mobile IP node uses discovery procedure to identify prospective home agents and foreign agents.
- b) Describe transaction classes of wireless transaction protocol. [12]

- 6.a) Explain the applications of wireless LANs.
- b) Describe IEEE 802.11 architecture. [12]

- 7.a) Give brief notes on data oriented CDPD Network.
- b) Explain briefly the operation of mobile application protocol. [12]

8. Write short notes on the following
 - a) Ad-hoc wireless networks
 - b) MAC protocol in Ad-hoc wireless networks. [12]

* * * * *