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**B.E/ B.Tech End Semester Examination Oct/Nov/Dec 2013**  
**Electronics and Communication Engineering**  
**Semester -7**  
**EC 9024 Wireless Networks**  
**Regulation 2008**

**Duration: 3 hrs**

**Max marks: 100**

**Answer All Questions**

**Part -A**

**10 \* 2 =20 Marks**

1. Tabulate the frequency of operation and data rate for the 802.11a, 802.11b, 802.11e and 802.16 protocols
2. Highlight the role of MAC Management in WLAN technology.
3. List out the service classes offered by UMTS
4. Enumerate the main design goals of 3G networks.
5. Differentiate the characteristics of ad hoc network with that of sensor network.
6. A given ad hoc network consists of 100 nodes and the mobility of the nodes is such that every 1sec, two existing radio connections are broken, while two new radio links are established. Assuming each node is connected to exactly 4 adjacent nodes; find the total number of communication links in the network.
7. State the difference between tight coupling and loose coupling.
8. Narrate the key role played by GPRS interworking function element in integrating WLAN with 3GPP network.
9. What is the term "Killer Application" in IMS Platform refers to?
10. Sequence out the main features and challenges of 4G network.

**Part - B**

**16 \* 5 = 80 Marks**

11. i) With required diagram explain the DCF and PCF operation of Wi-Fi MAC. (8)  
ii) Compare the channel access mechanism of HIPERLAN-1 with HIPERLAN – 2 with relevant diagrams. (8)
- 12.a.i) Explain the network architecture of GPRS with relevant sketch and list out its salient features. (8)  
ii) Describe the system architecture and channel structure of TD-SCDMA technology. (8)

(OR)

- 12.b.i) Explain with required diagram architecture for WCDMA. List its main features. (10)  
ii) Differentiate CDMA 2000 and WCDMA systems. (6)

13.a.i) Is proactive routing suitable for ad hoc network?. State the reasons to support your answer also explain how sequence number can solve infinity problem in DSDV routing. (10)

ii) With scenario, explain the working mechanism of Ad hoc on demand distance vector routing. (6)

(OR)

13.b.) Describe any two hierarchical routing protocols in wireless sensor network with necessary scenario. (16)

14.a.i) Explain the system description of integrating WLAN with 3GPP using loose coupling approach. (8)

ii) Discuss briefly about LMDS and compare it with MMDS. (8)

(OR)

14.b.) Discuss on the objectives of internetworking. Draw the protocol stack of interworking of GPRS with WLAN. Explain the functions of WAF and search procedure for GIF. (16)

15.a.i) Discuss about various advanced broadband wireless access technologies. (8)

ii) Write a short note on various broadband techniques used to provide multimedia services. (8)

(OR)

15.b.) Explain with diagrams 4G enabling technologies and convergent devices. (16)

\*\*\*\*\*ALL THE BEST \*\*\*\*\*