

BE11-R4 : WIRELESS & MOBILE COMMUNICATION

NOTE :

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time : 3 Hours

Total Marks : 100

1. (a) What are the differences between LAN, MAN, WAN ?
(b) What is frequency reuse factor and how is it derived ?
(c) What are the advantages of asynchronous CDMA technology over other technology ?
(d) What are the factors, which influence Small Scale fading Technique for Radio propagation ?
(e) GSM permits the integration of different voice and data services and the interworking with existing networks. What are the supplementary services offered by GSM ?
(f) GPRS stands for General Packet Radio System. What are the key features, goals and benefits of GPRS ?
(g) What are the key characteristics of Palm OS ? (7x4)
2. (a) Global System for Mobile communication is spread world wide to provide voice communication, irrespective of location of user. Explain GSM Protocol Stack.
(b) What are the qualities of services provided by 3G networks ?
(c) WEP is the privacy protocol specified in IEEE 802.11 to provide wireless LAN users protection against casual eavesdropping. What are the weaknesses of WEP ? (6+6+6)
3. (a) GSM uses FDM for Channel allocation. How does it allocate channel to each mobile node ?
(b) Differentiate between packet switching and circuit switching.
(c) Hidden nodes in a wireless network refer to nodes that are out of range of other nodes and creates problem of collision. What are the solutions of it ? (6+6+6)
4. (a) Base Station Subsystem (BSS), Network & Switching Subsystem (NSS) and Operation & Maintenance Subsystem (OMS) are components of GSM. Explain functionalities of each.
(b) Draw and explain layers of Bluetooth protocol stack. (9+9)
5. (a) What are the advantages of Wireless LAN ?
(b) Draw the architecture of CDMA. Explain entities of CDMA.
(c) What are the security algorithms used in GSM for authentication and data encryption ? (6+6+6)

6. (a) What is Handover (or hand off) with respect to GSM ? What is Inter cell and Intra cell handover ?
- (b) Compare Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA).
- (c) For wireless and mobile system, Radio Waves are used to send information. What are the various mechanisms of propagation of Radio Waves ? **(6+6+6)**
7. (a) GPRS stands for General Packet Radio Service. Draw and explain architecture of GPRS.
- (b) What is the advancement of CSMA over ALOHA protocol ? List and define the types of CSMA protocol. **(9+9)**

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