

BE11-R4 : WIRELESS AND MOBILE COMMUNICATION**NOTE :**

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

Total Time : 3 Hours**Total Marks : 100**

1. (a) What do you mean by Network and Switching Subsystem ?
 (b) What is the difference between 3G and 4G ?
 (c) How the capacity can be increased in CDMA ?
 (d) List the advantages and disadvantages of FH-SS.
 (e) What is meant by frequency reuse ?
 (f) Explain why CSMA/CD cannot be used in wireless networks. Consider both when a station is equipped with a single transceiver and two transceivers.
 (g) Briefly discuss the advantages of Spread Spectrum. (7x4=28)
2. (a) Differentiate between soft and hard hand offs.
 (b) Difference between Circuit Switching and Packet Switching.
 (c) Discuss the important advantages and disadvantages of Personal Area Networks (PAN). (6+6+6)
3. (a) Briefly discuss Bluetooth network technology. What are the two types of Bluetooth networks ? Discuss these types with neat and clean diagram.
 (b) Explain all the power saving features of IEEE 802.15.4. Also, explain the situations in which features could be useful. (9+9)
4. (a) What is Wireless Local Loop ? Discuss its architecture and components in detail.
 (b) Explain WiMax (Worldwide Inter-operability for Microwave Access), its architecture and applications in detail. (9+9)
5. (a) Compare 802.16 and 802.11 standards and give examples.
 (b) Compare and Contrast Radio wave, Microwave, and Infrared waves with examples. (9+9)
6. (a) How FHSS is different from DSSS/CDMA. Explain with their features and applications.
 (b) What is GSM ? Discuss the importance and components of International Mobile Station Equipment Identity (IMEI). Also discuss the following entities associated with IMEI :
 - Mobile Subscriber ISDN Number (MSISDN)
 - Mobile Station Roaming Number (MSRN)
 - Location Area Identity (LAI)
 - Temporary Mobile Subscriber Identity (TMSI)
 - Local Mobile Subscriber Identity (LMSI)
 - Cell Identifier (CI)(6+12)

7. (a) Compare circuit-switching and packet-switching networks based on the following criteria :
- (i) Reserving network resources ahead of data being sent.
 - (ii) Utilizing network resources efficiently.
 - (iii) Guaranteeing uniform network quality of service during the connection.
- (b) Explain the use of J2ME for mobile devices.

(9+9)

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