

## BE11-R4: WIRELESS & 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.

Time: 3 Hours

Total Marks: 100

1.

- a) The DECT system is, like GSM, a result of the activity of the ETSI standardization committee. What are the applications of DECT?
- b) Radio Waves are used to send information in Wireless System. What are the various mechanisms of propagation of Radio Waves?
- c) What are the advantages of Wireless LAN?
- d) What are the factors which influence Small Scale fading Technique for Radio propagation?
- e) Differentiate: TDMA and CDMA.
- f) RTS/CTS (Request to Send / Clear to Send) is the mechanism used by the 802.11 wireless networking protocol. How does it solve hidden node problem in Wi-Fi.?
- g) What are the key characteristics of Palm OS?

(7x4)

2.

- a) Bluetooth is designed to create Personal Area Network. Draw Bluetooth protocol stack and write down functionality of each layer.
- b) What are the advancement of CSMA over ALOHA protocol. List and define the types of CSMA protocol.

(10+8)

3.

- a) Wireless LAN is an example of Infrastructure Network. What are the design goals of WLAN?
- b) What is Wireless in Local Loop (WLL)? How does it work to support mobile user?
- c) IEEE 802.11 stands for Wireless LAN. What are the types of 802.11 frames? Draw and explain 802.11 frame formats.

(6+6+6)

4.

- a) General Packet Radio Service is also known as Generation 2.5. Draw and explain Architecture of GPRS.
- b) How does GSM register location of any Mobile Station?

(10+8)

5.

- a) What are the features of J2ME?
- b) Explain Following Terms:
  - i) Mobile Switching Center
  - ii) Gateway of MSC
  - iii) SIM
  - iv) A5 and A8 Algorithm in GSM

(6+12)

**6.**

- a) What are the design issues of IEEE 802.16 protocol?
- b) Advanced Mobile Phone Service (AMPS) is first generation Mobile system. How does it allocate frequency bands to mobiles? What is the major weakness of AMPS? What is the frequency band allocated to AMPS?

**(8+10)**

**7.**

- a) Global System for Mobile communication is spread worldwide 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) GPRS stands for General Packet Radio System. What are the key features, goals and benefits of GPRS?

**(6+6+6)**