

ONE TIME EXIT SCHEME

USN

--	--	--	--	--	--	--	--	--	--

CMRIT LIBRARY
BANGALORE - 560 037

10TE73

Seventh Semester B.E. Degree Examination, April 2018
Wireless Communication

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting
atleast TWO questions from each part.

PART - A

- 1 a. With a neat block diagram, explain the components of SS7 system and their function. (08 Marks)
- b. Explain the AMPS terminated call operation with time line diagram. (08 Marks)
- c. Determine the downlink and uplink frequencies for AMPS channel 445 on B-side channels. Given channel spacing is 30 KHz, BS transmitter frequency is 870.030 MHz and MS transmitter frequency is 825.030 MHz. The uplink and downlink are separated by 45 MHz. (04 Marks)
- 2 a. Explain the typical wireless cellular system components with a neat diagram. (08 Marks)
- b. Explain the following terms and their formation : (08 Marks)
 - i) MSISDN ii) IMSI iii) IMEI iv) CGI.
- c. With a diagram, explain the hardware view of a cellular network. (04 Marks)
- 3 a. Explain cell splitting and cell sectoring capacity expansion techniques. (08 Marks)
- b. Explain power control and power saving schemes in cellular systems. (08 Marks)
- c. Determine the frequency reuse distances for cell radius = 20 km, cluster size = 7 and cell radius = 2 km, cluster size = 4. Which of these schemes provide better ability to handle more subscribers? Justify. (04 Marks)
- 4 a. With a neat sketch, explain GSM network architecture. (08 Marks)
- b. Explain the following signaling and controlling channels : (08 Marks)
 - i) Broadcast channels
 - ii) Common control channels.
- c. Describe the GSM TDM-A time slot. (04 Marks)

PART - B

- 5 a. Briefly explain the ten important operations needed to be performed for call-setup in a GSM system. (10 Marks)
- b. Explain the inter-BSC handover with a diagram. (10 Marks)
- 6 a. Explain the basic spectrum spreading operation and procedure on CDMA forward channels. (10 Marks)
- b. Explain the following soft CDMA handoffs. (06 Marks)
 - i) Softer handoff
 - ii) Soft handoff
 - iii) Soft softer handoff.
- c. Explain any 4 forms of registrations in CDMA system. (04 Marks)

1 of 2

CMRIT LIBRARY
BANGALORE - 560 037

10TE73

- 7 a. Explain the convolutional and turbo encoders used to enhance the transmission of packet data over wireless systems. (06 Marks)
- b. Describe the operation of RAKE receiver with a neat diagram. (08 Marks)
- c. Explain the digital phases modulation technique and its variants. Write the constellation diagram for $\pi/4$ - QPSK. (06 Marks)
- 8 a. Explain the Bluetooth protocol stack with a neat diagram. (08 Marks)
- b. Differentiate between WLAN and WPAN in terms of :
- i) Power level and coverage area (06 Marks)
- ii) Network life span or duration. (06 Marks)
- c. Write a brief note on evolution of wireless LAN and IEEE 802.11 standards. (06 Marks)

CMRIT LIBRARY
BANGALORE - 560 037