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**Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020**  
**Wireless Communication**

Max. Marks:100

Time: 3 hrs.

**Note: Answer FIVE full questions, selecting at least TWO questions from each part.**

**PART – A**

- 1 a. List out the differences between 1G & 2G cellular systems. (05 Marks)
- b. Explain the need of supervisory audio tones and signaling tones for the AMPS system. (05 Marks)
- c. List out the characteristics of 3G cellular system. (08 Marks)
- d. What is station class mark? (02 Marks)
- 2 a. Explain the functions and types of RBS system. (06 Marks)
- b. What is the function of the transcoder controller? (04 Marks)
- c. Explain the purpose of,
 

(i) Location area identity	(ii) Cell global identity	(iii) Global title
(iv) MSISDN	(v) IMEI	

 (10 Marks)
- 3 a. Explain the following cellular system capacity expansion techniques:
 

(i) Cell splitting	(ii) Cell sectoring	(iii) Lee's microcell technology.
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 (12 Marks)
- b. Explain the location management. (08 Marks)
- 4 a. Explain with neat diagram the GSM protocols and signaling model. (08 Marks)
- b. Explain the various logical channels used in GSM. (06 Marks)
- c. Explain the various GSM traffic and control signal bursts used in GSM. (06 Marks)

**PART – B**

- 5 a. Explain the GSM traffic channel assignment. (08 Marks)
- b. Explain the Inter-MSC handover in GSM. (12 Marks)
- 6 a. With a neat block diagram, explain the network nodes found in a CDMA 2000 wireless system. (10 Marks)
- b. Explain with a neat block diagram, the generation of the CDMA forward traffic / power control channel for 9.6 kbps traffic. (10 Marks)
- 7 a. What is the received power in dBm for a signal in free space with a transmitting power of 1 W, frequency of 1900 MHz and distance from the receiver of 1000 meters if the transmitting antenna and receiving antennas both use dipole antennas with gains of approximately 1.6? What is the path loss in dB? (04 Marks)
- b. Explain with neat figure the various steps of GSM channel encoding for voice traffic. (08 Marks)
- c. Explain with neat block diagram the function of a Rake receiver. (08 Marks)
- 8 a. Describe the differences between wireless LAN and wireless PAN technologies. (12 Marks)
- b. Describe Blue tooth wireless PAN Adhoc network topologies. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

