

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER-VIII - EXAMINATION – SUMMER 2018

Subject Code: X81102

Date: 30/04/2018

Subject Name: Wireless Communication

Time: 10:30AM TO 1:00PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Write a short note on Wireless Local Loop and Wireless Local Area Network. **07**
- (b) Define the following terms: **07**
- 1) Cluster
 - 2) GOS
 - 3) Channel capacity
 - 4) RSSI
 - 5) MAHO
 - 6) Holding time
 - 7) Coherence bandwidth
- Q.2** (a) What is a cell? Why the cell shape is assumed to be hexagonal? **07**
- (b) Explain in brief channel assignment strategies. **07**
- OR**
- (b) Describe in details GSM architecture with necessary block diagram and its various blocks. **07**
- Q.3** (a) Prove that for hexagonal symmetry, the co-channel reuse ratio is given by $Q = (3N)^{1/2}$. **07**
- (b) Compare the following: **07**
- 1) Hard Handoff and Soft Handoff
 - 2) Microcell Zoning and Cell Splitting
- OR**
- Q.3** (a) Explain the process of Handoff in cellular system. **07**
- (b) Write a brief note on mobile portability. **07**
- Q.4** (a) Justify the followings: **03**
- 1) "GMSK is preferred as modulation techniques in GSM"
 - 2) "Directional antennas produce more gain than Omni-directional antennas."
- (b) Compare TDMA, FDMA, and CDMA technologies for cellular systems **07**
- OR**
- Q.4** (a) Derive the basic LOS transmission loss equations from the free space propagation equations for radio environment. **07**
- (b) Enumerate various radio propagation models and explain any two of them. **07**
- Q.5** (a) Write a brief note on GPRS architecture system. **07**
- (b) Describe RAKE receiver in CDMA. **07**
- OR**
- Q.5** (a) Write a brief note on Zigbee networks. **07**
- (b) Write a brief note on UWB Radio. **07**