

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2170710****Date: 04/05/2017****Subject Name: Mobile Computing and Wireless Communication****Time: 02.30 PM to 05.00 PM****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) Explain Nyquist theorem? Find the relationship among the following terms Channel Capacity (C), Bandwidth (B) and Signal-to-Noise Ratio (SNR). **07**  
(b) What is multiplexing? Explain FDM and TDM in details with one example each. **07**
- Q.2** (a) What is the circuit switching? Explain the communication phases of circuit switching. Differentiate between Datagram and Virtual circuit operation? **07**  
(b) Explain OSI model with function of each layer. List the name of layer which implemented the following Bridge, Gateway, and Repeater. **07**
- OR**
- (b) What is the principle of frequency reuse in context of cellular networks? List the ways of increasing the capacity of a cellular system? **07**
- Q.3** (a) Explain Delta Modulation with their Transmission and Reception block diagram? **07**  
(b) What is Direct Sequence Spread Spectrum technology? How does it work in CDMA technology? **07**
- OR**
- Q.3** (a) What are propagation modes? Explain free Space loss propagation modes in details? **07**  
(b) What is the need of ARQ? Explain Automatic Repeat Request (ARQ) in details? **07**
- Q.4** (a) Compare the Following : (i) GSM and GPRS (ii) Wimax and WiFi **07**  
(b) Explain functional Architecture of GSM system. And also give different Tele-services provided by GSM. **07**
- OR**
- Q.4** (a) What is handoff and Roaming? Explain the types of handoff in details? **07**  
(b) What kind of changes need in GSM to Convert it into GPRS explain that? Explain application of GPRS? **07**
- Q.5** (a) Draw and Explain the IEEE 802.11 Architecture in Details? **07**  
(b) What are the needs of Mobile IP? Explain handoff operation in Mobile IP. **07**
- OR**
- Q.5** (a) Explain Android application framework with their components. **07**  
(b) Draw and explain Bluetooth Protocol Architecture? **07**

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