Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 170702N Date: 05-12-2013

Subject Name: Wireless Communication and Mobile Programming

Time: 10.30 am - 01.00 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)** List and explain different types of wireless LAN. **07**

(b) 1. Write a note on PDP context activation procedure with respect to GPRS. **04**

2. Define SGSN and GGSN. **03**

Q.2 **(a)** 1. Explain Operator-centric Pull and Operator-independent Push. **04**

2. What is an ISM band? "It is a free band" Justify. **03**

(b) List and discuss at least seven functions where CDMA is different from GSM. **07**

OR

(b) Write short note on: 1G, 2G, 2.5G and 3G mobile communications. **07**

Q.3 **(a)** Explain the three tier architecture of mobile computing with their functions. **07**

(b) Explain Bluetooth Protocol Stack in detail. Define piconet and scatternet? **07**

OR

Q.3 **(a)** Explain the handover procedure in GSM system. **07**

(b) Define various mobile computing functions. **07**

Q.4 **(a)** 1. Define SIP. How does SIP handle call setup and teardown? **04**

2. Write a short note on limitations of GPRS. **03**

(b) Explain MMS architecture and transaction flow in MMS. **07**

OR

Q.4 **(a)** Discuss GPRS-Specific Applications. **07**

(b) Compare and contrast WiMAX and WiFi technologies. **07**

Q.5 **(a)** Define active RFID and passive RFID? Describe two applications of active RFID. **07**

(b) Explain in detail Direct Sequence Spread Spectrum Techniques (DSSS). **07**

OR

Q.5 **(a)** Define IMSI, TMSI, IMEI and MS-ISDN and write their use. **07**

(b) In a CDMA network, assume there are four stations A, B, C, and D with their chip sequences, shown in Fig. 1. Fig. 2 shows foyr cases of four stations transmitting at the same time. Show the transmitted sequences S1 to S4 and how DSSS does the recovery at receiver. **07**

A: 00011011
B: 00101110
C: 01011100
D: 01000010

Fig 1: bit sequence

A	B	C	D	
-	-	1	-	C sent 1
-	1	1	-	B & C sent 1
1	0	-	-	A sent 1 & B sent 0
1	1	0	1	A sent 1, B sent 1, C sent 0 & D sent 1

Fig. 2 transmition details

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