Noakhali Science and Technology University
Department of Computer Science and Telecommunication Engineering
Course Code: CSTE 4105; Course Title: Wireless and Mobile Communication; Exam: CT1
Time: 1 hour Session: 2020-21 Total Marks: 25

1	a)	Distinguish among 2.5G, 3.5G, 3.9G and 4G of cellular mobile systems.	4
	b)	Show the comparisons among simplex, half-duplex and full duplex with examples.	3
	c)	Distinguish among FDMA, TDMA and CDMA. How is CDMA superior to FDMA and TDMA? Justify. Describe in details the FDMA in GSM and the TDMA in GSM with calculations.	6
2	a)	What is GSM? Mention the GSM services. Design the architecture of GSM system.	6
	b)	Why uplink frequency is lower than downlink frequency in cellular mobile systems?	2
	c)	Show how the following four stations share the link during 1-bit interval: Station1-0, Station2-1, and Station3-0. The chip sequences are A={+1,+1,+1,+1}, B={+1,+1,-1,-1}, C={+1,-1,+1,-1}.	4

Course Code: CSTE 4105; Course Title: Wireless and Mobile Communication; Exam: CT2

Time: 1 hour **Session: 2020-21** **Total Marks: 25**

1)	Mention the advantages of WLAN. Classify infrastructure and ad-hoc networks with figures.	4
2)	Explain layered protocol architecture of IEEE 802.11 WLAN.	4
3)	Show the comparison between hidden and exposed terminals. How can these problems be removed by MACA technique? Illustrate with appropriate figure.	5
4)	Draw the connections between WLAN to LAN and WATM to ATM with APs.	4
5)	What is Bluetooth network? Classify Bluetooth network with figures.	4
6)	Distinguish between MANET and VANET.	4

Cryptography and Network Security, Session 2020-21, CT-2, Two Marks for Each Question
Time: 20 Min

1. Why AES is efficient in software and hardware.
2. What are the functionalities of Mix Column Sublayer?
3. How does XOR-based key whitening improve resistance to brute-force or cryptanalysis attacks?
4. Explain Output Feedback mode (OFB)? What are the advantages and disadvantages of OFB.
5. Explain Euler's Phi function.
6. What is Euclidean algorithm? Explain the Euclidean algorithm.
7. Explain Substitution Attack on CBC?
8. Explain Security Mechanisms of Public-Key Cryptography.
9. Discuss about the security vulnerabilities of AES.
10. Explain Galois Counter Mode.