Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination December 2022 (2019 scheme)

Course Code: CST415

Course Name: INTRODUCTION TO MOBILE COMPUTING

Max. Marks: 100 **Duration: 3 Hours**

PART A

Answer all questions, each carries 3 marks. Marks

1		Describe the characteristics of mobile computing.	(3)
2		Distinguish between Mobile Computing and Wireless Networking.	(3)
3		Classify the different types of satellite orbits.	(3)
4		Compare FDMA and TDMA.	(3)
5		List out the different strengths of SMS.	(3)
6		Identify the different modes in GPRS.	(3)
7		Classify the different types of Wireless LAN.	(3)
8		Compare WiFi and 3G.	(3)
9		Distinguish between symmetric and asymmetric cryptography.	(3)
10		Illustrate the significance of orthogonality in OFDM.	(3)

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Describe the design considerations of mobile computing.	(7)
	b)	Describe the various aspects of mobility with respect to mobile computing.	(7)

OR

12	a)	Explain the architecture of mobile computing.	(10)
	b)	List out the different applications of mobile computing.	(4)

Module II

13	a)	Explain GSM architecture with diagram.	(10)
	b)	Describe the functions of HLR and VLR in call routing and roaming.	(4)

OR

14	a)	Identify the reason behind multiple access is most important? With the help of suitable example explain the various access techniques.	(10)
	b)	Develop a call flow diagram for bank enquiry system.	(4)

Module III

15 a) With the help of neat sketches explain the difference between Short Message Mobile Terminated(SM MT) and Short Message Mobile Originated(SM MO) Messages. (8)

b) Illustrate the working of SMS as information bearer. (6)

OR

16 a) Explain the architecture of GPRS with diagram. (10)

b) Illustrate the billing and charging services in GPRS. (4)

Module IV

17 a) Describe HiperLAN communication model and its relationship with OSI model. (8)

b) Explain how wireless LAN is configured and managed. (6)

OR

18 a) Explain 802.11 architecture. (9)

b) List out the different applications of Wireless LAN. (5)

Module V

19 a) Explain public key cryptography with diagram. (8)

b) In a public-key system using RSA, you intercept the message C = 10 sent to a user whose public key is e = 5, n = 35. What is the plaintext M? (6)

OR

20 a) Describe the different types of multimedia broadcast services. (7)

b) Explain the role of MPLS in service provisioning. (7)

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree (S, FE) Examination May 2023 (2019 Scheme)

Course Code: CST415

Course Name: INTRODUCTION TO MOBILE COMPUTING

Max. Marks: 100 **Duration: 3 Hours**

PART A

Answer all questions, each carries 3 marks. Marks

1		Explain the four types of middleware used in the mobile computing?	(3)
2		Explain any six limitations of mobile computing?	(3)
3		Compare and contrast the satellite systems – GEO, LEO and MEO	(3)
4		Explain the cell cluster concept in GSM?	(3)
5		What are the various strength of SMS?	(3)
6		Explain about the quality of service requirements for a GPRS transmission?	(3)
7		What are the advantages of a wireless LAN?	(3)
8		What is HYPERLAN?	(3)
9		Explain the key features of TLS protocol?	(3)
10		Compare Symmetric & Asymmetric cryptography?	(3)

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Describe mobile computing functions in detail?	(7)
	b)	Explain the three tier architecture of mobile computing?	(7)

OR

12	a)	Explain the terms (i) Client Context Manager (ii) Policy Manager (iii) Security Manager (iv) Adaptability Manager	(8)
	b)	Describe the significance and functions of core, edge and access network?	(6)

Module II

13	a)	Compare Frequency division multiplexing with Time division multiplexing?	(7)
	b)	Explain in detail the architecture of GSM?	(7)

OR

14	a)	How the Authentication and security done in GSM?	(8)
	b)	Explain the Interactive voice response architecture?	(6)

Module III

15	a)	With the help of neat sketches, explain the difference between Short Message Mobile Terminated (SM MT) and Short Message Mobile Originated (SM MO) messages?	(8)
	b)	Describe the data services and applications of GPRS?	(6)

OR

16	a)	Explain in detail the architecture of GPRS?	(8)
	b)	How does operator-centric pull differ from operator-independent push and pull?	(6)

Module IV

17	a)	Explain the 802.11 architecture?	(7)
	b)	Compare Adhoc with infrastructure networks?	(7)

OR

18	a)	Explain in detail the architecture of HYPERLAN?	(8)
	b)	Compare WiFi with 3G?	(6)

Module V

19	a)	Explain the operation of MPLS in detail?	(7)
	b)	With the help of a suitable example, show the working of Diffie-Hellman key exchange algorithm?	(7)

OR

20	a)	Explain in detail multimedia broadcast service?	(7)
	b)	Explain OFDM in detail?	(7)

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