

Time: 3 HRS

8

Marks: 80

Note: 1. Q. No1 is compulsory

2. Solve any three questions out of the remaining five

3. Figures to right indicate full marks

4. Assume suitable data where necessary

Q.No1 Solve any four

(20)

- Explain any four features of MANET and compare MANET and WSN
- Write note on LTE frame structure in detail
- Describe evolution of 1G to 5 G mobile systems.
- Outline the method that supports mobility in CISCO Unified Wireless Network
- Write note on CDMA2000

2

- Draw and explain UMTS network architecture and compare GSM and UMTS (10)
- Draw neat diagram of GPRS system architecture and explain the function of each block in it. (10)

- Give the significance of WEP protocols. What are the features of WPA2 (10)
- Draw and explain the architecture of Cisco UWN with its features. (10)

- Explain the layered architecture of WSN protocol and discuss issues and challenges in WSN. (10)

- Draw and explain LoRaWAN network architecture and technology stack in detail. (10)

- What is Zigbee. Explain ZigBee protocol stack in detail? (10)

- Explain 4G network architecture with its specifications. (10)

- Describe Bluetooth architecture and protocol Stack. Also discuss its limitations. (10)

- Draw and explain protocol architecture of IEEE802.11. Also discuss on power management in IEEE802.11 infrastructure network. (10)



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Q.No1 Solve any four

(20)

a) Explain the difference between an Infrastructures based Network and an Adhoc Network of WLAN

b) Explain Direct Sequence Spread Spectrum

c) Compare FDMA, TDMA and CDMA

d) Outline the method that supports mobility in CISCO Unified Wireless Network

e) State the features of Wi-MAX

2

a. Draw and explain 4G architecture with its specifications.

(10)

b. Explain in detail GSM Architecture with neat diagram

(10)

3. a. Give the significance of WEP protocols. What are the features of WPA2

(10)

b. Draw and explain Cisco UWN lightweight AP and WLC Operation.

(10)

4. a. What are the various challenges in WSN and explain the architecture of WSN

(10)

b. What do you mean by massive MIMO; Compare 1G- 5G mobile standards.

(10)

5

a. Explain Zigbee protocol stack

(10)

b. Give the Features of VANET, E-VANET and MANET

(10)

6

a. Explain UMTS and GSM security

(10)

b. Draw and explain IEEE 802.11 Architecture

(10)

TE | SEM VI | IT | R-19-20 | e-scheme | WT

Time: 3 Hours

5

Marks:80

Note: 1. Q. No1 is compulsory

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3. Figures to right indicate full marks

4. Assume suitable data where necessary



Q.No1 Solve any four

- Explain the different features of VANET and E-VANET
- Write note on UMTS security.
- Compare FDMA, TDMA and CDMA
- Outline the method that supports mobility in CISCO Unified Wireless Network
- Differentiate between FHSS and DSSS.

Q.2

- Draw and explain UMTS network architecture and compare GSM and UMTS (10)
- Draw and explain the GSM time slot hierarchy. (10)

Q.3.

- Give the significance of WEP protocols. What are the features of WPA2 (10)
- Draw and explain the architecture of Cisco UWN with its features. (10)

Q.4

- Explain the architecture of WSN protocol and discuss applications of WSN. (10)
- Draw and explain LTE network architecture in detail. (10)

Q.5

- State different features of Zigbee and explain its protocol stack. (10)
- Explain 4G network architecture with its specifications. (10)

Q.6

- Draw and explain OFDMA technique for multiplexing. (10)
- Draw and explain system architecture of IEEE802.11. Differentiate between IEEE802.11 and IEEE802.16 (10)

University of Mumbai
Paper Code- 89383/Wireless Technology

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Examination Summer 2022

Examination Commencement from 17th May to 31st May 2022

Program: T.E. (Information Technology)
(Choice Based) SEM VI- (REV-2020-21) (C Scheme)
TE Semester VI

Course Code ITC603

Time: 2 hours and 30 minutes

Max. Marks: 80

Q1.	Choose the correct option for the following questions. All the questions are compulsory and carry equal marks
1.	Which is better for avoiding jamming
Option A:	Direct sequence spread spectrum
Option B:	Frequency hopping spread spectrum
Option C:	Time hopping spread spectrum
Option D:	Code division hopping spread spectrum
2.	CDMA uses handoff
Option A:	Hard handoff
Option B:	Hard & Soft hand off
Option C:	Soft Handoff
Option D:	Orthogonal Handoff
3.	UMTS use which multiple access technique?
Option A:	FDMA
Option B:	TDMA
Option C:	CDMA
Option D:	WCDMA
4.	2.5G allows standard web pages to be viewed in compressed format on mobile
Option A:	SAP
Option B:	WEP
Option C:	RAP
Option D:	WAP
5.	Carrier spacing used in GSM
Option A:	290KHz
Option B:	200KHz
Option C:	490KHz
Option D:	450KHz
6.	Wi-Max uses
Option A:	Channel division multiplexing
Option B:	Space division multiplexing
Option C:	Time division multiplexing
Option D:	Orthogonal frequency division multiplexing
7.	L2CAP layer in Bluetooth
Option A:	Handles data encryption
Option B:	Administration and control of all link actions
Option C:	Provides connection-oriented and connectionless data services to upper-layer protocols
Option D:	To join piconet

8.	What is the frequency range of IEEE 802.11a standard?
Option A:	2.4 Gbps
Option B:	5 Gbps
Option C:	2.4 GHz
Option D:	5 GHz
9.	In Bluetooth the operating frequency band is
Option A:	2.4GHz
Option B:	9.4GHz
Option C:	8.4GHz
Option D:	2.4GHz 11-4 GHz
10.	WPA uses _____ Algorithm to check integrity of the packets.
Option A:	TKIP
Option B:	SAP
Option C:	DOA
Option D:	RAP

Q2 (20 Marks Each)	Solve any Two Questions out of Three	10 marks each
A	Explain the LTE network architecture.	
B	i. Compare FDMA, TDMA and CDMA ii. Explain the protocol architecture of IEEE 802.11	
C	Draw and explain the GSM Time slot hierarchy	

Q3 (20 Marks Each)	Solve any Two Questions out of Three	10 marks each
A	Explain spread spectrum and briefly outline DSSS and FHSS	
B	Draw and explain WSN protocol layer architecture. Give the applications of WSN	
C	State the features of WiMAX. Draw and explain the architecture of WiMAX	

Q4 (20 Marks Each)	Solve any Two Questions out of Three	10 marks each
A	i. State the characteristics of MANET. ii. Give the Features of VANET and E-VANET	
B	i. Write a Short Note on UMTS security ii. Compare WEP and WPA2 protocol	
C	State the features of Cisco Unified Wireless Network. Draw and explain Cisco Unified Wireless Network Architecture	