17/4/17 — FN

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 71748

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Eighth Semester

Electronics and Communication Engineering

EC 6802 — WIRELESS NETWORKS

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the significance of Radio transmission over infrared.

2. OFDM uses a set of orthogonal sub-carriers for transmission of data. OFDM is used in WLANs. Consider an OFDM system that uses 52 sub-carriers out of which 48 are pilot sub-carriers. System bandwidth is 20 MHz and OFDM symbol duration including cyclic prefix is 4 μs. if code rate is $\frac{3}{4}$ and 64 QAM is used. Find the data rate.

3. What is care of address in mobile IP?

4. What is Encapsulation in mobile IP?

5. List out the disadvantages of indirect TCP.

6. Mention the advantages of Mobile TCP.

7. What is the purpose of firewall used in UMTS network?

8. Name the 3G radio access schemes identified to support different spectrum scenario.

9. Mention the features and challenges of 4G.

10. Define Multi carrier modulation.

PART B — (5 × 16 = 80 marks)

11. (a) Explain and compare the medium access mechanism of DCF methods adopted in IEEE 802.11 WLAN. (16)

Or

(b) Describe the user scenario architecture and protocol stack of Bluetooth technology. (16)

12. (a) State the entities and terminologies used in Mobile IP along with tunneling and also explain the three types of encapsulation mechanisms used in mobile IP. (16)

Or

(b) Explain and compare the working mechanism of both destination sequence distance vector and dynamic source routing protocol when applied on a mobile adhoc network scenario. (16)

13. (a) Describe the working mechanism of traditional TCP. (16)

Or

(b) Write your understanding on indirect TCP, Snooping TCP, Mobile TCP and transaction-oriented TCP. (16)

14. (a) Explain the UMTS network architecture with GSM, 3G and also explain the reference architecture. (16)

Or

(b) Explain UMTS Core network architecture. (16)

15. (a) Write your understanding on behavior of smart antenna techniques. (16)

Or

(b) Explain adaptive modulation and coding with time-slot scheduler along with cognitive radio concept. (16)

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Reg. No. :

04/05/18

Question Paper Code : 40975

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Eighth Semester
Electronics and Communication Engineering
EC 6802 – WIRELESS NETWORKS
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. Give any three differences between HIPERLAN 1 and HIPERLAN 2.
2. What is IEEE 802.11 ? What are the functions of MAC layer in IEEE 802.11 ?
3. What is a Mobile IP ? What are the entities of Mobile IP ?
4. Differentiate an ad hoc network and a cellular network with respect to
   a) Bandwidth usage b) Cost effectiveness.
5. Define the term slow start mechanism and Fast Retransmit algorithm in TCP.
6. How the destination correspondent host works ?
7. What is UMTS ? What are the layers of UMTS ?
8. Give the significance about link adaption scheme.
9. List the characteristics of 4G Network.
10. Give the advantages of Multicarrier Medulation over single carrier schemes.

PART – B (5×16=80 Marks)

11. a) With neat sketch describe the architecture of IEEE 802.11 and explain the MAC Management Techniques. (16)

(OR)

b) i) Elucidate the advantages of WLAN Techniques. (5)

ii) Explain the architecture of Hyperlan II protocal. (11)

12. a) Explain the Mobile IP session intiation protocol for IP pocket delivery in Mobile IP Networks. **(16)**

(OR)

b) Explain with neat diagram and example the destination sequence distance vector routing algorithm of Adhoc Networks. **(16)**

13. a) i) Draw the overview of classical enhancements to TCP for mobility. **(6)**

ii) Explain in detail about Traditional TCP and its significance. **(10)**

(OR)

b) How the Mobile TCP is playing the important role in Mobile Transport layer ? Explain with overview of the classical enhancements to TCP for mobility and compare with 2.5/3G wireless networks. **(5+5+6)**

14. a) Explain in detail about LTE Wireless Systems. **(16)**

(OR)

b) i) Explain the techniques about UMTS Network Reference Architecture. **(8)**

ii) Describe Channel Structure in UMTS Terrestrial Radio. **(8)**

15. a) i) Define 4G and compare the key parameters of 4G with 3G. **(11)**

ii) Write a note on Cognitive Radio. **(5)**

(OR)

b) What is a multi-input multi-output (MIMO) system ? Explain and compare. **(16)**

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 52930

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Eighth Semester

Electronics and Communication Engineering

EC 6802 — WIRELESS NETWORKS

(Regulation 2013)

(Common to : PTEC 6802 – Wireless Networks for B.E. (Part – Time) – Seventh Semester – Electronics and Communication Engineering (Regulations – 2014))

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Identify the need of WATM systems.

2. What are Piconet and Scatternet?

3. Define the term Care-of address in mobile IP.

4. Outline the characteristics of MANET.

5. Give any four schemes to improve the TCPs performance in wireless networks.

6. Identify the characteristics to be considered while deploying applications over 3G wireless links.

7. What is UMTS?

8. Define the Long-Term Evolution (LTE).

9. List the features of 4G.

10. Identify the focuses of Cognitive Radio.

PART B — (5 × 13 = 65 marks)

11. (a) Describe the IEEE 802.11 MAC data frame format with relevant diagram.

Or

(b) Give the strategy of logical link control and adaptation protocol (L2CAP).

12. (a) How the Tunneling and IP-in-IP encapsulation occur in the mobile IP?

Or

(b) Describe the Dynamic source routing with example.

13. (a) Explain the Congestion control, Slow start and Fast retransmit/fast recovery in traditional TCP.

Or

(b) Describe the Snooping TCP and points out the advantages and disadvantages.

14. (a) Outline the overview of UMTS Terrestrial Radio Access Network.

Or

(b) Illustrate the theory of High-Speed Downlink Packet Access (HSDPA)

15. (a) Categorize the four types of Smart antenna technique and explain in detail.

Or

(b) Summarize the 4G key challenges and mention the proposed solutions.

PART C — (1 × 15 = 15 marks)

16. (a) Analyse all possible solutions to be adopted for giving mobility support in the network layer such that both delay constraints along with throughput levels are achieved. (15)

Or

(b) How does the 3G GGSN/MSC differ from the GPRS architecture elements (2G GGSN/MSC)? What sort of enhancements are carried out in UMTS to meet out its specifications. (15)

04/11/17 - AN

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50457

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017
Eighth Semester
Electronics and Communication Engineering
EC6802 – WIRELESS NETWORKS
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. State the MAC management functions.
2. What is the functionality L2CAP ? List the different types of logical channels.
3. When the agent solicitation message has to be sent by mobile node ?
4. Why is routing in multi-hop ad -hoc networks complicated ?
5. What is the need for I-TCP ?
6. Define fast recovery.
7. How is isolation between users in the downlink accomplished in a WCDMA system ?
8. What is meant by firewall ?
9. List some of the applications of 4G system.
10. What is cognitive radio ?

PART – B (5×16=80 Marks)

11. a) Explain in detail about the IEEE 802.11 protocol architecture and bridging with other networks.

(OR)

b) Define HiperLan-2. Discuss about the various operation modes and protocol stack in HiperLan-2.

12. a) Explain how tunneling works in general and especially for mobile IP using IP in IP, minimal and generic routing encapsulation respectively. Discuss the advantages and disadvantages of these three methods.

(OR)

b) How does dynamic source routing handle routing ? What is the motivation behind dynamic source routing compared to other routing algorithms for fixed networks ?

13. a) Describe the basic concepts of congestion control. What are the implications on mobility in traditional TCP ?

(OR)

b) What is meant by snooping TCP ? Explain in detail about the basic concepts of TCP over 2.5/3.G wireless networks.

14. a) Discuss the role of the Access Link Control Application Part (ALCAP) in the UMTS.

(OR)

b) Discuss two evolution paths for the GSM to offer 3G services.

15. a) What is a Multi-Input-Multi-Output (MIMO) system ? Explain in detail.

(OR)

b) Describe the basic concepts of Adaptive Modulation and Coding Time-Slot Scheduler.

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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 20431

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Eighth Semester

Electronics and Communication Engineering

EC 6802 — WIRELESS NETWORKS

(Regulations 2013)

(Also common to PTEC 6802 – Wireless Networks for B.E. Part-Time Seventh Semester – Electronics and Communication Engineering Regulations 2014)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the principle behind infrared technology? What are the advantages and disadvantages of infrared technology?

2. What is WIMAX? Mention its features.

3. Define SIP. Write the functions of SIP.

4. Differentiate proactive and reactive routing protocols. Write examples for each.

5. What is I-TCP? List its merits and demerits.

6. What is Congestion Avoidance algorithm?

7. Name the functions of Radio Network Control (RNC).

8. List the functions provided by 3G-GGSN.

9. What is meant by Multi Carrier Modulation (MCM)? Mention its merits and demerits.

10. What are the techniques to improve network survivability in different layers? Name the challenges faced by 4G.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Compare Infra Red vs Radio Transmission techniques. (8)

(ii) Elucidate the advantages of WLAN techniques. (8)

Or

(b) Draw the protocol architecture of WLAN (802.11). Explain the physical layer and MAC management layer of 802.11. (16)

12. (a) (i) Imagine the following scenario. A Japanese and a German meet at a conference on Hawaii. Both want to use their laptops for exchanging data, both run mobile IP for mobility support. Explain the optimizations used in this mobile IP Networks. (8)

(ii) Discuss on the Entities and terminology of mobile IP networks. (8)

Or

(b) Explain the Destination Sequence Distance Vector routing protocol. Mention its features. (16)

13. (a) (i) How does mobile TCP play an important role in Mobile transport layer? Discuss in detail. (8)

(ii) Explain any two classical TCP improvements for mobility . (8)

Or

(b) Explain in detail about the TCP over 3G wireless networks. (16)

14. (a) With neat diagram, explain the Reference Architecture of UMTS. (16)

Or

(b) Describe Channel Structure in UMTS Terrestrial Radio. (16)

15. (a) (i) What is 4G? Compare the key parameters of 4G with 3G. (10)

(ii) Write a note on Cognitive Radio. (6)

Or

(b) (i) What is a Multi-Input Multi-Output (MIMO) system? Explain. (6)

(ii) With neat block diagram explain the OFDM Transmitter and Receiver. (10)

18/11/19/FN

Reg. No. :

Question Paper Code : 91465

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Eighth Semester

Electronics and Communication Engineering

EC 6802 – WIRELESS NETWORKS

(Regulations 2013)

(Common to PTEC 6802 – Wireless Networks for B.E. (Part-Time) – Seventh Semester – Electronics and Communication Engineering – Regulations 2014)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. Draw the frequency spectrum for wireless operation.
2. List out the main features of Blue tooth.
3. Compare tunneling and encapsulation.
4. What is meant by Dynamic source routing ?
5. Mention the various implications of mobility.
6. State the need for 3G wireless networks.
7. What are the features of firewall ?
8. Define DHCP.
9. State the challenges of 4G.
10. Give the various smart antenna techniques in wireless networks.

PART – B **(5×13=65 Marks)**

11. a) Explain various WLAN technologies and describe them, with their applications.

(OR)

b) Describe the need for Link manager protocol and illustrate with architecture.

12. a) What is Mobile IP ? State the properties and explain in detail.

(OR)

b) Explain the features of IPV6. Illustrate the features, for a Mobile IP session initiation protocol.

13. a) Describe the basic concepts of Classical TCP and indirect TCP.

(OR)

b) Illustrate the basic principles of selective retransmission. When such situations are warranted ? Discuss.

14. a) Draw the architecture for UMTS core network and explain its working.

(OR)

b) Describe the basic concepts of SMS-GMSC and SMS-IWMSC.

15. a) Define OFDM. Describe the basic concepts of OFDM – MIMO systems.

(OR)

b) Write detailed notes on :

i) Cognitive Radio **(7)**

ii) Multi Carrier Modulation. **(6)**

PART – C **(1×15=15 Marks)**

16. a) Examine the effectiveness of Adaptive Modulation and coding with time schedules. **(15)**

(OR)

b) Depict a treatise on spectrum allocation of WiMax in detail. **(15)**

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