

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  $\mu$ s. 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)