

**42123**

May, 2019

**M.Tech. (ECE) - II SEMESTER (Reappear)  
Wireless Mobile Communication (E16-C 606)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) What are the reasons for developing a cellular telephone system? (1.5)
- (b) Why do paging system need to provide low data rate? (1.5)
- (c) Why concept of frequency reuse is required? (1.5)
- (d) Compare frequency diversity with time diversity. (1.5)
- (e) What are limitations of wireless data networking ? (1.5)
- (f) What are the applications of mobile IP ? (1.5)
- (g) List all the features of FDMA. (1.5)

- (h) What are Time dispersion parameters? (1.5)
- (i) Define Carrier Sense Multiple Access (CSMA). (1.5)
- (j) Distinguish between fast fading and slow fading. (1.5)

**PART-B**

- 2. (a) Discuss the various mechanisms used to increase system capacity. (10)
- (b) What are the practical problems that will arise in improving the handoff situation? (5)
- 3. (a) What are the mechanisms responsible for electromagnetic wave propagation? Describe Okumura model for mobile radio propagation. (10)
- (b) Determine coherence time and Doppler spread required to make small scale propagation measurements if  $f_c = 1900$  MHz and  $v = 50$  m/s. (5)
- 4. (a) Explain channel assignment strategies. How it will affect the performance of cellular system? (8)
- (b) What is capture effect in packet radio? Describe packet radio protocols. (7)
- 5. (a) What is spread spectrum multiple access? Explain CDMA with its features, advantages and disadvantages. (8)
- (b) Compare all multiple access techniques used in mobile wireless communication. (7)

- 6. (a) Explain GSM technologies with its feature architecture. (8)
- (b) Describe different types of wireless data services (7)
- 7. Write short notes on the following :
  - (i) GPRS. (8)
  - (ii) Indoor propagation models. (7)