Hall Ticket Number:

Code No. : 41515 WMC

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

B.E. (I.T.) IV Year I-Semester Main Examinations, December-2017

Wireless & Mobile Communications

Time: **3** hours Max. Marks: **70**

*Note: Answer **ALL** questions in **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

1. Give the salient features of Second generation wireless networks.
2. Briefly describe Wireless Local Loop.
3. Describe signal penetration in buildings.
4. Distinguish between long term fading and short term fading.
5. Write the advantages of constant envelope modulation.
6. Justify the need for spread spectrum communication.
7. Define frame efficiency of a TDMA system.
8. Contrast DS-SS and FH-SS system.
9. Define Tunneling and encapsulation.
10. Find the difficulty faced in TCP when applied to mobile networks.

Part-B (5 × 10 = 50 Marks)

11. a) Describe various channel assignment strategies. [5]
    b) What are the advantages of 'Frequency reuse' concept? Illustrate it in terms of number of duplex channels, frequency reuse factor, cluster size etc. [5]
12. a) Derive the expression for received power and path loss at a distance 'd' using two ray ground reflection model. [5]
    b) List different outdoor propagation models. Explain in detail any one propagation model. [5]
13. a) Explain the factors that influence the selection of digital modulation techniques for mobile radio communication. [4]
    b) Draw the block diagram and explain the working of DS-SS system with BPSK modulation. [6]
14. a) Compare TDMA, FDMA & CDMA techniques. [5]
    b) Describe the capacity of cellular systems. Define the basic parameters that affect the capacity. [5]
15. a) Identify the goals and requirements of Mobile IP. [5]
    b) Describe fast and selective retransmission techniques. [5]
16. a) Explain co-channel interference and co-channel interference reduction factor. [4]
    b) Discuss how reflection, diffraction and scattering mechanisms affect the signal propagation in cellular and mobile communications. [6]
17. Write short notes on any ***two*** of the following:
    a) Digital Modulation Techniques. [5]
    b) Wireless Vs Fixed Telephone networks. [5]
    c) Snooping TCP. [5]

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