

Exam.Code:0931  
Sub. Code: 6918

1078  
B.E. (Electronics and Communication Engineering)  
Seventh Semester  
EC-710: Wireless and Mobile Communication

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Attempt the following:-
  - a) Why hexagonal size is used in cellular communication?
  - b) What is soft handoff?
  - c) What is SS7 signaling?
  - d) What is the significance of coherence bandwidth?
  - e) What is cell splitting?
  - f) What is logic channel?
  - g) Define Spread-spectrum technique.
  - h) What is hopping sequence?
  - i) Define Space-Division Multiple Access (SDMA).
  - j) What is PBX? (10x1)

UNIT - I

- II. a) Explain the Cellular concept in Mobile Communication and illustrate with necessary expressions how the frequency reuse helps in increasing its capacity.
  - b) What is EDGE technology? (6,4)
- III. a) What are adjacent and Co-Channel Interferes? Show that Co-Channel Interference of 18dB can be achieved with 7 cell cluster.
  - b) What is wireless local loop? (6,4)
- IV. a) What is small scale fading? Explain the effects of small scale fading.
  - b) Discuss channel allocation schemes in GSM. (6,4)
- V. a) What are Linear modulation techniques? Explain with the help of block diagram modulation process and demodulation process of any linear modulation technique.
  - b) What is equalization? Explain its role in communication. (6,4)

P.T.O.

(2)

- VI. a) If GSM uses a frame structure where each frame consists of eight time slots and each time slot contains 156.25 bits and data is transmitted at 270.833kbps in the channel.  
Find: (i). Time duration of a bit. (ii). Time duration of slot. (iii). Time duration of a frame., and (iv). How long must a user occupying a single time slot wait between two successive transmission frames? (1,1,1,2)
- b) Explain differences between wireless and fixed telephone networks with suitable examples. (5)
- VII. a) Explain IS-95 system.
- b) What are different GSM services and features? (5,5)

x-x-x