CBCS SCHEME

15EC651

Sixth Semester B.E. Degree Examination, Aug./Sept.2020
Cellular Mobile Communication

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain various capacity expansion techniques with a neat diagram. **(12 Marks)**
   b. A total of 90 MHz of bandwidth is allocated to FDD cellular telephone system which uses two 30 kHz simplex channels to provide full duplex voice control channels. Compute the number of channels available per cell if a system uses 4 cell reuse. **(04 Marks)**

OR

2 a. Define trunking and grade of service and explain the call cleared and call delayed. **(12 Marks)**
   b. Write a short note on log distance path loss model. **(04 Marks)**

Module-2

3 a. Explain various factors influencing small scale fading. **(08 Marks)**
   b. Derive an expression for free space propagation model. **(04 Marks)**
   c. What are different channel assignment strategies and explain the same. **(04 Marks)**

OR

4 a. Compare Rayleigh and Ricean distribution. **(06 Marks)**
   b. Explain different types of Small Scale Fading. **(10 Marks)**

Module-3

5 a. With a neat diagram explain GSM protocol architecture for signaling. **(10 Marks)**
   b. Explain GSM hyperframe structure with a neat sketch. **(06 Marks)**

OR

6 a. Explain the GSM traffic and Control signal burst with a neat diagram. **(10 Marks)**
   b. Explain the GSM speech processing with a neat diagram. **(06 Marks)**

Module-4

7 a. Explain the location update procedure in GSM system. **(08 Marks)**
   b. Explain the flow diagram for the outgoing call setup in GSM system. **(08 Marks)**

OR

8 a. Explain GPRS system architecture and interfaces with a neat sketch. **(10 Marks)**
   b. List different types of handover techniques in GSM system. **(03 Marks)**
   c. List different services supported by GSM network. **(03 Marks)**

Module-5

9 a. Explain various steps involved in call establishment in CDMA system. **(08 Marks)**
   b. Explain generation of the CDMA paging channel signal with a neat sketch (Block diagram). **(08 Marks)**

OR

10 a. Explain the reverse access channel processing in a CDMA system with a neat block diagram. **(10 Marks)**
   b. Explain the Initialization / Registration procedure in CDMA system. **(06 Marks)**

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