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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Eighth Semester

Branch : Electronics and Communication Engineering

EC 010 801—WIRELESS COMMUNICATION (EC)

(New Scheme—2010 Admission onwards)

[Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What is the need for hand-off in Cellular System ?
2. What is Multipath Propagation ?
3. State the advantages of TDMA compared to FDMA.
4. How security is implemented in GSM ?
5. List the characteristics of CDMA system.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Clearly explain the frequency reuse concept in Cellular Communication ?
7. Explain different types of Small Scale Fading.
8. Explain the importance of guard time in TDMA.
9. Compare Intracell and Intercell handover scenarios in GSM.
10. Explain CDMA decoder model with suitable block diagram.

(5 × 5 = 25 marks)

Turn over

Part C*Answer all questions.**Each question carries 12 marks.*

11. Explain how capacity and coverage can be increased in cellular system ? Explain all the available methods.

Or

12. A signal to interference ratio of 15 dB is required for satisfactory forward channel performance of a cellular system. What is the following reverse factor and cluster size that should be used of maximum capacity if the path loss exponent is :

(a) $n = 4$.

(b) $n = 3$.

Assume that there are six co-channel cells in the first tier, and all of them are at the same distance from the mobile.

13. What is Space Diversity ? Explain with neat diagram, the different Space Diversity reception methods.

Or

14. Explain the different propagation models for Wireless Communication Networks.
15. Explain Direct Sequence Spread Spectrum Systems, Frequency Hopped Spread Spectrum Systems and Time Hopping Systems.

Or

16. (a) Explain how :
- Power Control is done in CDMA system.
 - Multipath fading is avoided in CDMA .
- (b) In the mechanism of forwarding packets between the Home Agent and Care-of-Address, explain "Tunnelling" and "encapsulation".
17. Define and explain the functions necessary for network operation and maintenance contained in Operation Sub-System of GSM.

Or

18. Explain how is localisation, location up-dating, roaming etc. done in GSM, reflected in the data bases ?

19. (a) Discuss the reverse link power control in cellular CDMA networks.
(b) Describe how CDMA call processing is done ?

Or

20. With neat diagrams, explain the Architectural view of a CDMA wireless system.

(5 × 12 = 60 marks)