Reg. No. | | | | | | | | | | | | |

Question Paper Code : 91419

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014

Seventh Semester

Electronics and Communication Engineering

EC 2401/EC 71/10144 EC 701 – WIRELESS COMMUNICATION

(Regulation 2008/2010)

(Common to PTEC 2401 – Wireless Communication for B.E. (Part-Time) Sixth Semester – ECE – Regulation 2009)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the different modules of a basic cellular system?
2. State advantages of CDMA over FDMA?
3. List the different types of propagation mechanisms.
4. What are the different fading effects due to Doppler Spread?
5. State advantages of Offset–QPSK.
6. List the advantages of GMSK.
7. List the different types of Channel coding techniques.
8. Differentiate between Macrodiversity and Microdiversity.
9. What are the effects of Multipath propagation on CDMA?
10. List some important features of 3G networks.

PART B — (5 × 16 = 80 marks)

11. (a) (i) With a block diagram of a basic cellular system, explain its various functional modules and the method by which a call is routed. (10)

(ii) Explain in detail a handoff scenario at cell boundary. (6)

Or

(b) (i) Explain the different types of Multipath propagation in wireless communication. (10)

(ii) With neat illustration, explain CDMA. (6)

12. (a) (i) Explain briefly on outdoor propagation models. (8)

(ii) Describe in detail Two Ray Rayleigh Fading Model. (8)

Or

(b) (i) Explain on path loss estimation techniques using path loss models. (8)

(ii) Describe on Ricean distribution. (8)

13. (a) (i) Explain with neat constellation diagram the modulation technique of QPSK. (8)

(ii) List the advantages and applications of BFSK. (8)

Or

(b) (i) Describe with a block diagram $\pi/4$ Quadrature Phase Shift Keying and its advantages. (8)

(ii) What is MSK? Explain its power spectral density. (8)

14. (a) (i) With a neat block diagram, explain the principle of Macrodiversity. (8)

(ii) Explain the operation an adaptive equalizer at the receiver side. (8)

Or

(b) (i) Explain with a block diagram Maximal ratio combiner. (8)

(ii) Describe on Polarization and Space Diversity. (8)

15. (a) Write short notes on the following :

(i) Frequency Hopping and its advantages. (8)

(ii) Orthogonal FDM (OFDM) (8)

Or

(b) Discuss in detail the 2G and 3G wireless network standards. Compare the relative merits and demerits of both the standards. (16)
