314
AN

Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 73464

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Seventh Semester

Electronics and Communication Engineering

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

(Regulations 2008/2010)

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

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Define mean excess delay and rms delay spread.

2.   What are multiple access schemes used for wireless communication?

3.   Distinguish between Narrowband and Wideband systems.

4.   What is Link Budget calculation?

5.   Comment on the necessity of a Gaussian filter in GMSK.

6.   List the advantages of digital modulation techniques .

7.   What is Diversity?

8.   What is Equalization?

9.   Define : Direct Sequence-Speed Spectrum.

10. State the goals of a standard IMT-2000

PART B — (5 × 16 = 80 marks)

11. (a) (i)   With diagram explain Personal Access Communication system.   (8)

         (ii) Briefly explain ETACS System.   (8)

Or

(b) (i) Explain some techniques intended to improve the coverage area and capacity of cellular system. (8)

(ii) Analyze co-channel interference and adjacent channel interference and suggest some measures to reduce them. (8)

12. (a) (i) How the received signal strength is predicted using the free space propagation model? Explain. (10)

(ii) Find the far-field distance for an antenna with maximum dimension of 1 m and operating frequency of 900 MHz. (6)

Or

(b) (i) With system theoretic description explain the characteristics of Time-Dispersive channels. (8)

(ii) Explain the three basic propagation mechanisms in a mobile communication system. (8)

13. (a) (i) Explain the Nyquist criterion for ISI cancellation. (8)

(ii) With transfer function, explain the raised cosine roll off filter. (8)

Or

(b) (i) Explain the QPSK transmission and detection techniques. (8)

(ii) Explain the performance of Digital modulation in slow flat-fading channels. (8)

14. (a) Write short notes for the following

(i) Spatial diversity (4)

(ii) Temporal diversity (4)

(iii) Polarization diversity (4)

(iv) Macrodiversity. (4)

Or

(b) (i) Explain in detail about linear equalizers. (8)

(ii) With suitable diagrams, explain channel coding and speech coding techniques. (8)

15. (a) (i) Explain the principle of cellular code division multiple access systems. (8)

(ii) Brief about the properties of spreading codes used in CDMA systems. (8)

Or

(b) (i) Describe in detail about the operation of OFDM transceiver structures. (8)

(ii) Explain the physical layer features of WCDMA systems. (8)

———————