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**Question Paper Code : 52460**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Seventh Semester

Electronics and Communication Engineering

EC 2401 – WIRELESS COMMUNICATION

(Regulations 2008)

(Common to PTEC 2401 – Wireless Communication for BE (Part-Time)

Sixth Semester – ECE – Regulations 2009)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What is multipath propagation ? Why does it occur ?
2. Is a wireless communication system secure ? Why ?
3. What is scattering ? Why does it occur ?
4. Distinguish fast fading channel from slow fading channel.
5. What is the merit of Gaussian Minimum Shift Keying (GMSK) ?
6. What is the relative merit of Offset-OPSK compared to QPSK ?
7. What is the advantage and disadvantage of equal gain combining ?
8. Why is Decision Feedback equalizer employed in a wireless communication system ?
9. What is the basic drawback of a OFDM system ?
10. What is meant by power control ? How does it improve a CDMA setup ?

PART – B

(5×16=80 Marks)

11. a) i) What are the underlying principles of Cellular networks ? Describe with relevant block diagrams and expressions. (10)  
ii) What are the different kinds of services supported wirelessly and what are the subsequent challenges that are faced in each of the service ? (6)

(OR)



- b) i) What are the spectrum limitations on a wireless system ? Discuss. (6)  
ii) Discuss the attributes of a wireless system as "Noise and Interference Limited Systems". (6)  
iii) What is the most common multiple access scheme employed in a wireless communication system ? Why ? (4)
12. a) i) What are the different types of channel in a wireless communication system ? Elaborate with relevant expressions and figures if any. (10)  
ii) Compare and contrast narrowband and wideband channel models. (6)
- (OR)
- b) i) Describe the various propagation mechanisms in a wireless channel. (10)  
ii) Discuss how link calculations are done in wireless environment. (6)
13. a) i) Describe the error performance of different modulation schemes in fading channels. (8)  
ii) Describe the QPSK scheme as it is used in a wireless communication system. What are its merits and demerits ? (8)
- (OR)
- b) i) Describe an MSK scheme and explain its role in an wireless communication system. (8)  
ii) Describe the power spectrum of signals undergoing various modulation in a wireless system. (8)
14. a) i) Describe the speech coding techniques employed in wireless systems. (6)  
ii) Compare and contrast macro and micro diversity. (4)  
iii) Describe the role played by equalizers in wireless systems. (6)
- (OR)
- b) i) Describe the different signal combining schemes. (10)  
ii) Discuss about Transmit diversity and explain why it has bettered the quality of reception in a wireless system. (6)
15. a) What is Orthogonal Frequency Division Multiplexing ? What is its important advantage ? Is the subbands overlapping or non-overlapping ? Why ? Describe with a relevant block diagram, an OFDM transceiver structure. (16)
- (OR)
- b) i) Discuss about the 3G standards and compare it with 2G standards. (10)  
ii) Discuss how cellular CDMA functions and is capable of accommodating a large number of users. Any way it cannot accommodate infinite users. Why ? (6)