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

Question Paper Code: 46402

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Sixth Semester

Electronics and Communication Engineering

14UEC602 - WIRELESS COMMUNICATION SYSTEMS

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The first cellular systems were

   (a) analog (b) digital (c) semi analog (d) None of these

2. Wireless communication is started in

   (a) 1869 (b) 1895. (c) 1879 (d) 1885.

3. Fading of the received radio signals in a mobile communication environment occurs because of

   (a) Direct propagation (b) Multipath Propagation
   (c) Bi-path Propagation (d) None of these

4. Link budget consists of calculation of

   (a) Useful signal power (b) Interfering noise power
   (c) Both (a) and (b) (d) None of these

5. QPSK is a composite of

(a) Two BPSK (b) Three BPSK
(c) Two FSK (d) Two M-ary PSK

6. If Gray encoded input debit is 11 then the phase 9 QPSK signal is?

(a) $\pi/4$ (b) $3\pi/4$ (c) $5\pi/4$ (d) $7\pi/4$

7. Diversity technique

(a) Provides significant link improvement
(b) Needs training overhead
(c) Both (a) and (b)
(d) None of these

8. The technique for combining diversity signals are

(a) Feedback (b) Maximal ratio
(c) Equal gain (d) All the above

9. _____ are typically characterized by very small cells, especially in densely populated areas.

(a) 2G system (b) 3G system
(c) 2.5G System (d) 3.5G system

10. GSM is the accepted cellular standard in

(a) Europe (b) South America
(c) Southeast Asia (d) All the above

PART - B (5 x 2 = 10 Marks)

11. Define frequency reuse.

12. Differentiate the slow fading and fast fading.

13. List out the factors that influence the choice of digital modulation.

14. Why diversity and equalization techniques are used?

15. What are the basic channels available in GSM?

PART - C (5 x 16 = 80 Marks)

16. (a) Discuss briefly about the requirements of services for a wireless system. (16)

Or

(b) With a block diagram of a basic cellular system, explain the various functional modules and the method by which a call is routed. (16)

17. (a) Explain the three basic propagation mechanisms in a mobile communication system. (16)

Or

(b) (i) Discuss about wide band model. (8)

(ii) What is the need for link calculation? Explain with suitable example. (8)

18. (a) (i) How MSK signals are generated. Explain in detail. (8)

(ii) Discuss in detail the demodulation techniques for Minimum Shift Keying. (8)

Or

(b) Give a detailed description of OFDM transceiver. (16)

19. (a) Explain in detail about:

(i) Linear equalizers. (8)

(ii) Decision feedback equalizers. (8)

Or

(b) Explain the principles of diversity. (16)

20. (a) Explain the Code Division Multiple Access and compare its performance with TDMA. (16)

Or

(b) (i) Illustrate the block diagram of IS-95transmitter. (8)

(ii) Write short notes on 2G and 3G Wireless networks and standard. (8)

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