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**Reg. No. :**

**Question Paper Code: 46042**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

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. Wireless communication is started in

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

2. For the case of hexagonal cell we can divide it into six equilateral triangles.

Area of each equilateral is,

 (a) 3/$\sqrt{4}$R2  (b) 3/4 R2 (c) $\sqrt{3}$/4 R2 (d) 3/$\sqrt{4}$ R

3. Link budget consists of calculation of

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

4. Shadowing produces

 (a) Rayleigh fading (b)Rician fading (c) Doppler shift (d) All of the above

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) $π$/4 (b) 3π/4 (c) 5π/4  (d) 7π/4

7. The technique for combining diversity signals are

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

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

9. The major problem of OFDM is

 (a) PAR (b) ICI (c) ISI(d) All of the above

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. List the advantages and disadvantages of Hata model.

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

14. What is angular diversity?

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) (i)With neat diagram describe about CDMA & TDMA (8)

 (ii) Explain about multipath propagation in detail. (8)

17. (a) Explain about narrowband wideband models . (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) (i) Write the characteristics features of OQPSK. (8)

 (ii) With neat diagrams explain the structure of a wireless communication link. (8)

19. (a) Explain in detail about:

 (i) Linear equalizers. (8)

 (ii) Decision feedback equalizers. (8)

Or

(b) Explain about linear and decision feedback equalizer techniques. (16)

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

Or

 (b) Explain the principles of CDMA and also describe about effects of multipath

 propagation on CDMA. (16)