

7E7083

Total No. of Pages : 2

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B.Tech. VII- Semester (Main&Back) Examination, Nov. - 2019
Electronics and Communication Engg.
7EC4A Wireless Communication

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 26

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Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly). Units of quantities used/calculated must be stated clearly.

UNIT- I

1. a) What is PN sequence? Discuss about the property of PN sequence and also draw a Block diagram to generate 15 length M sequence using flip flop. (8)
- b) Explain Transmitter and Receiver of DSSS with suitable diagram. (8)

OR

1. a) Explain Fast FHSS and Slow FHSS with an suitable example. (8)
- b) The data rate of a DS - CDMA product is $f_b = 10\text{Kbps}$. The spreading rate or chip rate is $F_c = 10\text{mbps}$. How much is jamming margin (M_j) of an output (S/N) of 12 dB is required for a bit error rate (BER) of 10^{-6} performance and given $L_{sgs} = 2\text{ dB}$ is system implementation loss. (8)

UNIT- II

2. a) Discuss Free space loss shortly. Derive expression for free space loss in dB. (8)
- b) Explain Fresnel zone clearance. Find out radius of first Fresnel Zone clearance. (8)

OR

2. a) Derive Expression for effective earth radius. (8)
- b) Explain all multipath fading channels with their profile in details. (8)

UNIT - III

- a) What are the principle of simplex, Half duplex and full duplex channels explain with Suitable example and diagram. (8)

b) Differentiate TDMA, FDMA and CDMA with example. (8)

OR

3. a) What do you mean by PRMA? Discuss Aloha protocol with diagram. (8)
b) Explain Rake receiver principle and working of the receiver. (8)

UNIT - IV

4. a) Explain GSM Network Architecture with working principle. (8)
b) Explain need of Mobile IP? How packet delivery perform in mobile IP routing networks explain with diagram. (8)

OR

4. a) Explain Bluetooth protocol structure with application. (8)
b) Write short note on WLAN and WLL. (8)

UNIT - V

5. Explain All parts of Satellite earth station with block diagram and example. (16)

OR

5. Write short note on the followings :

- i. Keplers law of orbital motion.
- ii. LEO, MEO, GEO
- iii. Reliability of satellite
- iv. Telemetry Tracking and control.

(4×4=16)
