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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER M.TECH DEGREE EXAMINATION, APRIL/MAY 2018

Branch: Electronics and Communication Engineering

Stream: Telecommunication Engineering

Course Code & Name: 01EC6506 Wireless Communication and Networks

Answer any two full questions from each part

Limit answers to the required points.

Max. Marks: 60

Duration: 3 hours

PART A

1. a. Derive the probability of error of a QPSK modulation scheme. (5)
b. Explain the free space propagation model. (4)
2. a. Derive the capacity of frequency flat deterministic MIMO channel. (9)
3. a. Explain in detail Okumura/Hata model for propagation path loss. (7)
b. Distinguish between slow fading and fast fading. (2)

PART B

4. a. Explain in detail cell splitting and cell sectoring techniques. (6)
b. Distinguish between hard handoff and soft handoff. (3)
5. a. With neat diagram explain the GSM architecture. (7)
b. State the advantage of umbrella cell approach in mobile communication systems. (2)
6. a. Explain the power control techniques used in cellular systems. (5)
b. In a 2 channel cell with 100 mobile stations, if 30 requests arise per hour and if the average holding time is 360s, find the offered load, blocking probability and efficiency. (4)

PART C

7. a. Describe the Crane global model for the prediction of rain induced attenuation. (12)
8. a. With neat diagram explain the IEEE 802.11 physical layer. (9)
b. What are the functions of LLC of IEEE 802.11? (3)
9. a. Derive the expression for Carrier to Noise ratio of a basic satellite link. (12)