C

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Mobile Assisted Handoff (MAHO) provides   CO1-U

   (a) Faster handoffs   (b) Suitability for frequent handoffs

   (c) MSC need not monitor the signal strength   (d) All of the above

2. The angle at which no reflection occurs in the medium of origin   CO1-U

   (a) Brewster angle   (b) Phase Angle   (c) Path Angle   (d) All of the above

3. _____amplifies the signal such that its level is well adjusted to the   CO1-U
   quantization at the subsequent ADC.

   (a) Amplifier   (b) Rectifier   (c) Op amp   (d) Automatic Gain Control

4. Diversity technique   CO1- U

   (a) Provides significant link improvement   (b) Needs training overhead

   (c) Both of the mentioned   (d) None of the mentioned

5. The data speed of Bluetooth is around _____   CO1- U

   (a) 1Mbps   (b) 2Mbps   (c) 3 Mbps   (d) 5Mbps

PART – B (5 x 3= 15 Marks)

6. Mention the significance of frequency reuse in cellular networks.   CO1- U

7. List the factors influencing small scale fading   CO1- U

8. State the advantages of Offset-QPSK.   CO1-U

9. Write the advantages of LMS algorithm   CO1-U

10. What are the main functions of cognitive radio? CO1-U

<center>PART – C (5 x 16= 80 Marks)</center>

11. (a) Explain about cellular concept. CO1- U (16)

<center>Or</center>

    (b) Explain about noise and interference limited system CO1- U (16)

12. (a) (i) Explain Flat fading and frequency selective fading in detail. CO1-U (8)

    (ii) In the US digital cellular system, if fc=900MHZ and the CO2-App (8)
    mobile velocity is 70km/hr. Calculate the received carrier
    frequency if the mobile (a) directly toward the
    transmitter(Positive Doppler Shift (b) directly away from the
    transmitter(Negative Doppler shift) and (c) in a direction
    perpendicular to the direction of the arrival of the transmitted
    signal.

<center>Or</center>

    (b) (i) Calculate the mean excess delay, rms delay spread and the CO2- App (8)
    maximum excess delay (10dB) for the multipath profile given in
    the figure below. Estimate the 50% coherence BW of the
    channel. Would this channel be suitable for GSM service
    without the use of an Equalizer.
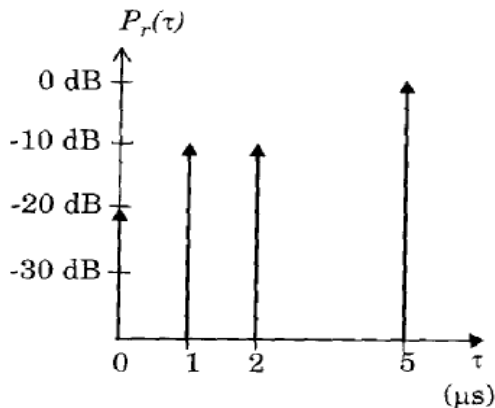
    (ii) Explain RMS delay spread, Maximum excess delay, Mean CO1-U (8)
    Excess delay and Coherence Bandwidth,

13. (a) What is QPSK? Derive the bit error probability of QPSK and CO1- U (16)
    also explain the constellation diagram of it.

<center>Or</center>

    (b) Explain Direct sequence Spread spectrum in detail CO1- U (16)

<center>2</center>

14. (a) Explain space diversity techniques used in wireless CO1- U (16)
communication.

Or

(b) Explain the training A generic adaptive equalizer in detail. CO1- U (16)

15. (a) What is cognitive radio in 5G? Explain in detail CO1- U (16)

Or

(b) How does the Millimeter Wave Technology in 5G varies from CO1- Ana (16)
Microwave technology?