Chettinad College of Engineering & Technology
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Department of Electronics and Communication Engineering

EC8652 – Wireless Communication

Unit III - MCQ Bank

1. QPSK system uses a phase shift of
   (a) Π
   (b) Π/2
   (c) **Π/4**
   (d) 2Π

2. The technique that may be used to reduce the side band power is
   (a) MSK
   (b) BPSK
   (c) **Gaussian minimum shift keying**
   (d) BFSK

3. In DPSK system, input signal is differentially encoded and then modulated using a _____ modulator.
   (a) Amplitude
   (b) Frequency
   (c) **BPSK**
   (d) QPSK

4. Which of the following is not a linear modulation technique?
   (a) OQPSK
   (b) π/4 QPSK
   (c) **FSK**
   (d) BPSK

5. OFDMA stands for _____
   (a) omnidirectional frequency division multiple access
   (b) orthogonal frequency duplex multiple access
   (c) orthogonal frequency divider multiple access
   (d) **orthogonal frequency division multiple access**

6. Why is a cyclic prefix required in an OFDMA?
   (a) To ensure symbol time is an integer number
   (b) To help overcome multipath and ISI
   (c) To maintain orthogonality
   (d) To make OFDMA scalable

7. OFDM is a technique for 3G mobile communication.
   (a) True
   (b) False

8. Which of the following distribution is used for describing statistical time varying nature of received envelope of multipath component?
   (a) Log normal distribution
   (b) Levy distribution
   (c) **Rayleigh distribution**
   (d) Gaussian distribution

9. In linear modulation technique _____ of transmitted signal varies linearly with modulating digital signal.
   (a) Amplitude
   (b) Frequency
   (c) Phase
   (d) Angle

10. The bandwidth of OQPSK is _____ to QPSK.
   (a) Identical
   (b) Twice
   (c) Half
   (d) Four times

11. Which of the following is not a detection technique used for detection of $\pi/4$ QPSK signals?
   (a) Baseband differential detection
   (b) IF differential detection
   (c) FM discriminator detection
   (d) Envelope detection

12. Which of the following is a combined linear and constant envelope technique?
    (a) MPSK
    (b) PSK
    (c) BPSK
    (d) QPSK

13. In an M-ary signalling scheme two or more bits are grouped together to form a _____
    (a) Chip
    (b) Symbol
    (c) Byte
    (d) Pattern

14. The number of possible signal in M-ary signalling is given by M and M = _____ where n is an integer.
    (a) n
    (b) 2^n
    (c) 2n
    (d) n^2

15. The constellation of M-ary PSK is _____ dimensional.
    (a) One
    (b) Does not exist
    (c) Two
    (d) Three

16. What is the radius of the circle in M-ary PSK on which message points are equaly spaced?
    (a) $\sqrt{}$Es
    (b) $\sqrt{}$Eb
    (c) Eb
    (d) Es

17. The power efficiency of the M ary PSK decreases because of the _____
    (a) Freely packed constellation
    (b) Increment of bandwidth efficiency
    (c) Fixed null bandwidth
    (d) Densely packed constellation

18. In comparison to M-ary PSK, M-ary QAM bandwidth efficiency is _____ and power efficiency is _____
    (a) Identical, superior
    (b) Less, superior
    (c) Identical, identical
    (d) Superior, superior

19. The name minimum phase shift keying implies minimum _____
    (a) Frequency separation
    (b) Amplitude separation
    (c) Phase change
    (d) Amplitude deviation

20. MSK is sometimes also referred as _____
    (a) Slow FSK
    (b) Fast FSK
    (c) Slow PSK
    (d) Fast PSK

21. Which of the following is not a property of MSK?
    (a) Variable envelope
    (b) Spectral efficiency
    (c) Good BER performance
    (d) Self-synchronizing capability

22. GMSK is a _____ of MSK.
    (a) Integral
    (b) Opposite
    (c) Derivative
    (d) Similar

23. Which of the following holds true for GMSK?
    (a) Minimum ISI
    (b) Minimum error rate
    (c) Good spectral efficiency
    (d) Variable envelope property

24. OFDM is a technique of
    1. encoding digital data
    2. multiple carrier frequencies
    3. wide band digital communication
    4. 4G mobile communication
    (a) 1,2 and 3 are correct
    (b) 2 and 3 are correct
    (c) 1, 2 and 4 are correct
    (d) **All the four correct**

25. Advantages of using OFDM include
    1. Avoids complex equalizers
    2. Low symbol rate and guard interval
    3. Avoids ISI
    4. Multiple users at same frequency
    (a) 1,2 and 3 are correct
    (b) 2 and 3 are correct
    (c) 1, 2 and 4 are correct
    (d) **All the four correct**

26. The guard interval is provided in OFDM
    (a) To eliminate the need of pulse shaping filter
    (b) To eliminate ISI
    (c) High symbol rate
    (d) Both a) and b)
    (e) Both b) and c)