Sample Questions for CRNEET

Advanced Communication System

1. In FDMA, interference happens if
   a) Senders transmit data using non-orthogonal codes
   b) Senders transmit data at the same frequency
   c) Senders transmit data at the same time
   d) None of the above

2. DECT supports
   a) Wide area coverage
   b) Local coverage
   c) Medium coverage
   d) Does not cover these ranges

3. LTE stands for
   a) Lite Technical Edge
   b) Linear Telecommunication Evolution
   c) Long Term Evolution
   d) Linear Technological Evolution

4. Main features of 3G include (in comparison to 2G)
   a) Better voice quality
   b) Higher data rates
   c) Better voice quality and higher and flexible data rates
   d) Access different data rates at the same time

5. Code Division Multiple Access (CDMA) differs from Time Division Multiple Access (TDMA) because there is no
   a) Bandwidth b) Link c) Carrier d) Timesharing

6. When did first generation (1G) cellular services become commercially available?
   a) late 1960s b) mid 1970s c) early 1980s d) late 1970s

7. The basic GSM is based on _____ traffic channels.
   a) connection oriented b) connection less c) packet switching d) circuit switching

8. Mostly _____ is used in wireless LAN.
   a) time division multiplexing
   b) orthogonal frequency division multiplexing
   c) space division multiplexing
   d) none of the mentioned

9. What is WPS?
   a) wi-fi protected setup b) wired protected setup
   c) wired process setup d) wi-fi process setup

10. Cellular radio systems divide the service area into many smaller areas known as

a) pods b) cells c) cubes d) sectors

11. As assigned by the Federal Communications Commission, cellular radio systems operate in the
    a) LF and HF bands b) HF and VHF band
    c) VHF and UHF bands d) UHF and microwave bands

12. Wifi alliance for certified products based on the
    a) IEEE 802.3 b) IEEE 802.11 c) IEEE 802.5 d) IEEE 802.12

13. A basic service set without an access point is a stand alone network called
    a) Cellular Network b) Point to point network
    c) Adhoc network d) Infrastructure network

14. State whether True of False.
    i) In GSM only TDMA is used.
    ii) There is zero inter-channel interference in CDMA.
    a) True, False b) False, True c) False, False d) True, True

15. FDMA is the division of
    a) Time b) Phase c) Spectrum d) Amplitude

16. Cable television is an example of
    a) TDMA b) FDMA c) CDMA d) SDMA

17. In TDMA, the user occupies the whole bandwidth during transmission.
    a) True b) False c) Incomplete d) None of the above

18. GSM is an example of

    a) TDMA cellular systems
    b) FDMA cellular systems
    c) CDMA cellular systems
    d) SDMA cellular systems

19. What is the wireless communications technology used in retail operations to identify and secure merchandise?
    a) ISM b) RFID c) UNII d) Micro Sensors

20. Which of the following can able to enable a station can start a transmission only at the beginning of a timeslot, and thus collisions are reduced?
    a) CDMA b) CSMA/CA c) ALOHA d) none of the mentioned

21. Devices that provide the connectivity to a WiMAX network are known as
    a) subscriber stations b) base stations
    c) gateway d) none of the mentioned

22. WiMAX is mostly used for
    a) local area network b) metropolitan area network
    c) personal area network d) none of the mentioned

23. Which one of the following frequency is not used in WiMAX for communication?
    a) 2.3 GHz b) 2.4 GHz c) 2.5 GHz d) 3.5 GHz

24. Coherence bandwidth is
    a) Channel that passes all spectral components with equal gain
    b) The bandwidth of modulated signal
    c) Channel that passes all spectral components with linear phase
    d) Both a and c

25. Bluetooth uses
    a) frequency hoping spread spectrum
    b) orthogonal frequency division multiplexing
    c) time division multiplexing
    d) none of the mentioned

26. The power delay profile helps in determining
    a) Excess delay b) rms delay spread
    c) Excess delay spread d) All of the above

27. Which of the following process can be done by CR?
    a) Spectrum Mobility b) Spectrum Management
    c) Spectrum Sharing d) All the above

28. Drawbacks of SDR
    a) Difficulty in writing software for various applications
    b) Cant able to support different networks
    c) Does not provide benefits to the manufacturers
    d) Interfacing in easy

29. Spectrum mobility
    a) Uses specific frequency
    b) Changes its frequency of operation
    c) Sharing different frequencies
    d) None of the above

30. Types of Cognitive Radio
    a) High Cognitive Radio
    b) Full Cognitive Radio
    c) Spectrum Sensing Cognitive Radio
    d) Both b and c

Analog Communication Systems

1. AM demodulation techniques are
    a. Square law demodulator b. Envelope detector
    c. PLL detector d. Both a and b are correct

2. What is the maximum transmission efficiency of an AM signal?
   a. 64.44% b. 33.33% c. 56.66% d. 75.55%

3. Generation of SSB SC signal is done by
   a. Phase discrimination method b. Frequency discrimination method
   c. Product modulator d. Both a and b

4. Vestigial side band signals are detected by
   a. Filters b. Synchronous detection
   c. Balanced modulator d. None of the above

5. In an Amplitude Modulation
   a. Amplitude of the carrier varies b. Frequency of the carrier remains constant
   c. Phase of the carrier remains constant d. All of the above

6. If modulation index is greater than 1
   a. The baseband signal is preserved in the envelope of the AM signal
   b. The recovered signal is not distorted
   c. It is called over modulation
   d. All of the above

7. Example of continuous wave analog modulation is
   a. PCM b. DM c. AM d. PAM

8. Function of frequency mixer in super heterodyne receiver is
   a. Amplification
   b. Filtering
   c. Multiplication of incoming signal and the locally generated carrier
   d. None of the above

9. The costas receiver is used for
   a. FM signal b. DSB-SC signal c. PCM signal d. DM signal

10. Frequency deviation in FM is
   a. Change in carrier frequency to the frequency above and below the centre frequency
   b. Formation of side bands
   c. The variation of the instantaneous carrier frequency in proportion to the modulating signal
   d. All of the above

11. The amount of frequency deviation in FM signal depends on
   a. Amplitude of the modulating signal b. Carrier frequency
   c. Modulating frequency d. Transmitter amplifier

12. Advantage of using direct method for generation of FM signal is
   a. It gives high stability to FM signal frequency
   b. Distortion free FM signal is generated
   c. High power FM generation is possible
   d. None of the above

13. Sensitivity is defined as
    a. Ability of receiver to amplify weak signals
    b. Ability to reject unwanted signals
    c. Ability to convert incoming signal into Image Frequency
    d. Ability to reject noise

14. Amplitude limiter in FM receivers are used to
    a. Remove amplitude variations due to noise b. Filteration
    c. Demodulation d. Amplification

15. Pre emphasis is done before
    a. Before modulation b. Before transmission
    c. Before detection at receiver d. After detection at receiver

16. The ratio of actual frequency deviation to the maximum allowable frequency deviation is called
    a. Multi tone modulation b. Percentage modulation
    c. Phase deviation d. Modulation index

17. In radio receivers, varactor diodes are used for
    a. Tuning b. Demodulation c. Mixing d. None of the above

18. Which of the following oscillators is suitable for frequencies in the range of mega hertz?
    a. RC Phase Shift b. Wein Bridge c. Hartley d. Both a and c

19. The process of recovering information signal from received carrier is known as
    a. Detection b. Modulation c. Demultiplexing d. Sampling

20. Phase shift method is
    a. Includes two balanced modulators b. Two phase shifting networks
    c. Avoids the use of filters d. All of the above

21. Examples of low level modulation are
    a. Square law diode modulation b. Switching modulation
    c. Frequency discrimination method d. Both a and b

22. Selectivity of a receiver:
    a. Changes with incoming signal frequency
    b. Is poorer at high frequencies
    c. Is the rejection of the adjacent channel at the receiver
    d. All of the above

23. Carrier swing is defined as
    a. The total variation in frequency from the lowest to the highest point
    b. Frequency deviation above or below the carrier frequency
    c. Width of the side band
    d. None of the above

24. Drawbacks of using direct method for generation of FM signal are

a. Give high stability to FM signal frequency
b. Distorted FM signal is generated due to harmonics of modulating signal
c. Cannot be used for high power FM generation
d. Both a and b

25. De emphasis is
a. is restoring of original signal power
b. is done at the detector output of the receiver
c. is the inverse process of Pre emphasis
d. All of the above

26. What is the effect on the deviation d of an FM signal when it is passed through a mixer?
a. Doubles b. Reduces c. Becomes half d. Remains unchanged

27. Armstrong method is used for the generation of
a. Direct FM b. Indirect FM c. SSB-SC d. DSB-SC

28. The modulation index of FM is given by
a. μ = frequency deviation/ modulating frequency
b. μ = modulating frequency /frequency deviation
c. μ = modulating frequency/ carrier frequency
d. μ = carrier frequency / modulating frequency

29. Disadvantages of FM over AM are
a. Prone to selective fading b. Capture effect
c. Poorer signal to noise ratio at high audio frequencies d. All of the above

30. What is the maximum frequency deviation allowed in commercial FM broadcasting?
a. 100 KHz b. 75 KHz c. 15 KHz d. 120 KHz

Digital Communication Systems

1. The process of converting the analog sample into discrete form is called
a. Modulation b. Multiplexing c. Quantization d. Sampling

2. The modulation techniques used to convert analog signal into digital signal are
a. Pulse code modulation b. Delta modulation
c. Adaptive delta modulation d. All of the above

3. The sequence of operations in which PCM is done is
a. Sampling, quantizing, encoding b. Quantizing, encoding, sampling
c. Quantizing, sampling, encoding d. None of the above

4. One of the disadvantages of PCM is
a. It requires large bandwidth b. Very high noise
c. Cannot be decoded easily d. All of the above

5. In Delta modulation,
a. One bit per sample is transmitted
b. All the coded bits used for sampling are transmitted

c. The step size is fixed
d. Both a and c are correct

6. DPCM suffers from
   a. Slope over load distortion b. Quantization noise
   c. Both a & b d. None of the above

7. Granular noise occurs when
   a. Step size is too small
   b. Step size is too large
   c. There is interference from the adjacent channel
   d. Bandwidth is too large

8. The digital modulation scheme in which the step size is not fixed is
   a. Delta modulation b. Adaptive delta modulation
   c. DPCM d. PCM

9. T1 carrier system is used
   a. For PCM voice transmission b. For delta modulation
   c. For frequency modulated signals d. None of the above

10. Matched filter may be optimally used only for
    a. Gaussian noise b. Transit time noise c. Flicker d. All of the above

11. For a line code, the transmission bandwidth must be
    a. Maximum possible b. As small as possible
    c. Depends on the signal d. None of the above

12. Regenerative repeaters are used for
    a. Eliminating noise b. Reconstruction of signals
    c. Transmission over long distances d. All of the above

13. Scrambling of data is
    a. Removing long strings of 1's and 0's
    b. Exchanging of data
    c. Transmission of digital data
    d. All of the above

14. In polar RZ format for coding, symbol '0' is represented by
    a. Zero voltage b. Negative voltage
    c. Pulse is transmitted for half the duration d. Both b and c are correct

15. In a uni-polar RZ format,
    a. The waveform has zero value for symbol '0'
    b. The waveform has A volts for symbol '1'
    c. The waveform has positive and negative values for '1' and '0' symbol respectively
    d. Both a and b are correct

16. Polar coding is a technique in which
    a. 1 is transmitted by a positive pulse and 0 is transmitted by negative pulse
    b. 1 is transmitted by a positive pulse and 0 is transmitted by zero volts
    c. Both a & b
    d. None of the above

17. The polarities in NRZ format use
    a. Complete pulse duration
    b. Half duration
    c. Both positive as well as negative value
    d. Each pulse is used for twice the duration

18. The format in which the positive half interval pulse is followed by a negative half interval pulse for transmission of '1' is
    a. Polar NRZ format b. Bipolar NRZ format
    c. Manchester format d. None of the above

19. Alternate Mark Inversion (AMI) is also known as
    a. Pseudo ternary coding b. Manchester coding
    c. Polar NRZ format d. None of the above

20. In PCM, the parameter varied in accordance with the amplitude of the modulating signal is
    a. Amplitude b. Frequency c. Phase d. None of the above

21. The error probability of a PCM is
    a. Calculated using noise and inter symbol interference
    b. Gaussian noise + error component due to inter symbol interference
    c. Calculated using power spectral density
    d. All of the above

22. In Delta Modulation, the bit rate is
    a. N times the sampling frequency
    b. N times the modulating frequency
    c. N times the nyquist criteria
    d. None of the above

23. The crest factor of a waveform is given as –
    a. 2Peak value/ rms value b. rms value / Peak value
    c. Peak value/ rms value d. Peak value/ 2rms value

24. Synchronization of signals is done using
    a. Pilot clock
    b. Extracting timing information from the received signal
    c. Transmitter and receiver connected to master timing source
    d. All of the above

25. Timing jitter is
    a. Change in amplitude b. Change in frequency
    c. Deviation in location of the pulses d. All of the above

26. Impulse noise is caused due to
    a. Switching transients b. Lightening strikes
    c. Power line load switching d. All of the above

27. Overhead bits are
    a. Framing and synchronizing bits b. Data due to noise
    c. Encoded bits d. None of the above

28. The expected information contained in a message is called
    a. Entropy b. Efficiency c. Coded signal d. None of the above

29. The memory less source refers to
    a. No previous information
    b. No message storage
    c. Emitted message is independent of previous message
    d. None of the above

30. Entropy is
    a. Average information per message b. Information in a signal
    c. Amplitude of signal d. All of the above

31. Information rate is defined as
    a. Information per unit time
    b. Average number of bits of information per second
    c. rH
    d. All of the above

32. The channel capacity according to Shannon's equation is
    a. Maximum error free communication b. Defined for optimum system
    c. Information transmitted d. All of the above

33. According to Shannon Hartley theorem,
    a. The channel capacity becomes infinite with infinite bandwidth
    b. The channel capacity becomes infinite with infinite bandwidth
    c. Has a tradeoff between bandwidth and Signal to noise ratio
    d. Both b and c are correct

34. The channel capacity is
    a. The maximum information transmitted by one symbol over the channel
    b. Information contained in a signal
    c. The amplitude of the modulated signal
    d. All of the above

35. For M equally likely messages, the average amount of information H is
    a. H = log10M b. H = log2M c. H = log10M2 d. H = 2log10M

36. Run Length Encoding is used for
    a. Reducing the repeated string of characters
    b. Bit error correction

c. Correction of error in multiple bits
d. All of the above

37. Parity check bit coding is used for
a. Error correction
b. Error detection
c. Error correction and detection
d. None of the above

38. A linear code
a. Sum of code words is also a code word
b. All-zero code word is a code word
c. Minimum hamming distance between two code words is equal to weight of any non zero code word
d. All of the above

39. For a (7, 4) block code, 7 is the total number of bits and 4 is the number of
a. Information bits
b. Redundant bits
c. Total bits- information bits
d. None of the above

40. Probability density function defines
a. Amplitudes of random noise
b. Density of signal
c. Probability of error
d. All of the above