BRAINWARE UNIVERSITY

ODD Semester Examinations 2021- 22

Programme – Bachelor of Technology in Computer Science & Engineering - 2018 [B.Tech.(CSE)]

Course Name – Digital Communication

Course Code – OEC-701B

(Semester VII)

Time allotted : 1 Hour 25 Minutes | Full Marks : 70

(Multiple choise type question) | 70 x 1 = 70

Choose the correct alternative from the following

(I) In channel encoding procedure

A) Redundancy bits are added
B) Errors are corrected
C) Redundancy bits are added & Errors are corrected
D) None of the mentioned

(II) Source of noise in delta modulation is

A) Granularity
B) Slope overload
C) Granularity & Slope overload
D) None of the mentioned

(III) In bipolar codes, pulses can be

A) Positive
B) Negative
C) Absent
D) All of the mentioned

(IV) The minimum nyquist bandwidth needed for baseband transmission of Rs symbols per second is

A) Rs
B) 2Rs
C) Rs/2
D) Rs2

(V) When the base of the logarithm is e, the unit of measure of information is

A) Bits
B) Bytes
C) Nats
D) None of the mentioned

(VI) The low pass filter at the output end of delta modulator depends on

A) Step size
B) Quantization noise
C) Bandwidth
D) None of the mentioned

(VII) Linear codes are used for

A) Forward error correction
B) Backward error correction
C) Forward error detection
D) Backward error detection

(VIII) The cyclic codes are designed using

A) The cyclic codes are designed using
B) Shift registers without feedback
C) Flipflops
D) None of the mentioned

(IX) For which quantization process is used?

A) Amplitude discretization
B) Time discretization
C) Amplitude & Time discretization
D) None of the mentioned

(X) If step size is increased _____ occurs.

A) Slope overload distortion
B) Granular noise
C) Slope overload distortion & Granular noise
D) None of the mentioned

(XI) Which has same probability of error?

A) ASK and FSK
B) ASK and PSK
C) PSK and FSK
D) None of the mentioned

(XII) The standard value of A in A-law is

A) 87 B) 88
C) 86.7 D) 87.59999999999999

(XIII) Delta modulation is
A) 1 bit DPCM B) 2 bit DPCM
C) 4 bit DPCM D) None of the mentioned

(XIV) In differential encoding the _____ different between two wave forms is measured.
A) Magnitude B) Frequency
C) Phase D) Time period

(XV) Average effective information is obtained by
A) Subtracting equivocation from entropy B) Adding equivocation with entropy
C) Ratio of number of error bits by total number of bits D) None of the mentioned

(XVI) The correlating detector is also known as
A) Maximum likelihood detector B) Minimum likelihood detector
C) Maximum & Minimum likelihood detector D) None of the mentioned

(XVII) Which codes perform better?
A) Orthogonal B) Biorthogonal
C) Orthogonal & Biorthogonal D) None of the mentioned

(XVIII) Choosing a discrete value that is near but not exactly at the analog signal level leads to
A) PCM error B) Quantization error
C) PAM error D) Sampling error

(XIX) Which modulation requires more bandwidth?
A) QPSK B) OQPSK
C) BPSK D) BFSK

(XX) The type of noise that interferes much with high frequency transmission is
A) White B) Flicker
C) Transit time D) Shot

(XXI) Average energy per bit is given by
A) average energy symbol/log2 M B) average energy symbol * log2 M
C) log2 M/ Average energy symbol D) none of the mentioned

(XXII) The feedback shift register circuit is called as
A) Multiplying circuit B) Dividing circuit
C) Feedback circuit D) Shifting circuit

(XXIII) The output SNR can be made independent of input signal level by using
A) Uniform quantizer B) Non uniform quantizer
C) Uniform & Non uniform quantizer D) None of the mentioned

(XXIV) In non coherent reception _____ is measured.
A) Phase B) Energy
C) Power D) None of the mentioned

(XXV) To avoid corruption during transmission, the code-word should be
A) Near B) Far apart
C) Far D) None of the mentioned

(XXVI) Which has greater bandwidth?
A) TDM B) FDM
C) TDM & FDM D) None of the mentioned

(XXVII) The _____ the error correcting capability used, the _____ will be the erasure correcting capability.
A) Larger, smaller B) Smaller, larger
C) Smaller, smaller D) Larger, larger

(XXVIII) The size of the quantile interval is called as

A) Inter level
B) Step size
C) Quantile size
D) Level width

(XXIX) Which conveys more information?
A) High probability event
B) Low probability event
C) High & Low probability event
D) None of the mentioned

(XXX) Which is a quantization process?
A) Rounding
B) Truncation
C) Rounding & Truncation
D) None of the mentioned

(XXXI) Companding is used to
A) Increase the information transmission rate
B) Use only one carrier frequency to handle different signals
C) To use different frequency bands for different signals
D) To protect all small signals in PCM from quantizing noise

(XXXII) The mutual information between a pair of events is
A) Positive
B) Negative
C) Zero
D) All of the mentioned

(XXXIII) The term heterodyning refers to
A) Frequency conversion
B) Frequency mixing
C) Frequency conversion & mixing
D) None of the mentioned

(XXXIV) Equivocation is the
A) Conditional entropy
B) Joint entropy
C) Individual entropy
D) None of the mentioned

(XXXV) Some examples of linear codes
A) Hamming code
B) Reed-Solomon code
C) Parity code
D) All of the mentioned

(XXXVI) QAM is a combination of
A) ASK and FSK
B) ASK and PSK
C) PSK and FSK
D) None of the mentioned

(XXXVII) QPSK is a composite of
A) Two BPSK
B) Three BPSK
C) Two FSK
D) Two M-ary PSK

(XXXVIII) Quantization is a _____ process.
A) Few to few mapping
B) Few to many mapping
C) Many to few mapping
D) Many to many mapping

(XXXIX) In differential PSK the date is
A) Encoded differentially
B) Decoded differentially
C) Encoded & Decoded differentially
D) None of the mentioned

(XL) In which waveform logic 1 is represented by half bit wide pulse and logic 0 is represented by absence of pulse?
A) Unipolar RZ
B) Bipolar RZ
C) RZ-AMI
D) Manchester coding

(XLI) In orthogonal signalling as k increase there is
A) Improved error performance
B) Degraded error performance
C) Improved bandwidth
D) None of the mentioned

(XLII) In which waveform logic 1 is represented by equal amplitude alternating pulses?
A) Unipolar RZ
B) Bipolar RZ
C) RZ-AMI
D) Manchester coding

(XLIII) Which modulation is spectrally more efficient?
A) BPSK
B) MSK
C) QPSK
D) OQPSK

(XLIV) The FSK signal which has a gentle shift from one frequency level to another is called as

A) Differential PSK B) Continuous PSK
C) Differential & Continuous PSK D) None of the mentioned

(XLV) Which maintains better fidelity?
A) Analog communication B) Digital communication
C) Analog & Digital communication D) None of the mentioned

(XLVI) A concatenated code uses
A) One level of coding B) Two levels of coding
C) Three levels of coding D) None of the mentioned

(XLVII) The length of the code-word obtained by encoding quantized sample is equal to
A) l=log(to the base 2)L B) l=log(to the base 10)L
C) l=2log(to the base 2)L D) l=log(to the base 2)L/2

(XLVIII) Examples of structured sequences are
A) Block codes B) Convolutional codes
C) Turbo codes D) All of the mentioned

(XLIX) Sources of channel errors are
A) Finger prints B) Air bubbles
C) Unwanted particles D) All of the mentioned

(L) The SNR value can be increased by _____ the number of levels.
A) Increasing B) Decreasing
C) Does not depend on D) None of the mentioned

(LI) To achieve high signal to noise ratio, delta modulation must use
A) Under sampling B) Over sampling
C) Aliasing D) None of the mentioned

(LII) According to Sampling theorem
A) Ts is greater than 1/2fm B) Ts is lesser than 1/2fm
C) Ts is equal to 1/2fm D) Ts is lesser than or equal to 1/2fm

(LIII) Block length is the _____ in the code word.
A) Number of elements B) Distance between elements
C) Number of parity bits D) None of the mentioned

(LIV) Aliasing can be removed using
A) Prefiltering B) Postfiltering
C) Prefiltering & Postfiltering D) None of the mentioned

(LV) In quantization process, the amount of quantization noise is _____ to number of levels.
A) Directly proportional B) Inversely proportional
C) Independent D) None of the mentioned

(LVI) The spectral density of white noise is
A) Exponential B) Uniform
C) Poisson D) Gaussian

(LVII) The process in which the top of each pulse in the output samples retains the shape of the analog segment is called as _____
A) Natural sampling B) Ideal sampling
C) Aliasing D) None of the mentioned

(LVIII) Which technique can be used for bandwidth reduction?
A) BPSK B) QPSK
C) MPSK D) MFSK

(LIX) The main sources of corruption are
A) Sampling and quantizing effects B) Channel effects
C) Sampling, quantizing and channel effects D) None of the mentioned

(LX) Switching exists in

A) Point to point communication
B) Broadcast communication
C) Point to point & Broadcast communication
D) None of the mentioned

(LXI) FSK reception is

A) Phase Coherent
B) Phase non coherent
C) Phase Coherent & non coherent
D) None of the mentioned

(LXII) As the eye opens, ISI _____

A) Increases
B) Decreases
C) Remains the same
D) None of the mentioned

(LXIII) The received code contains an error if the syndrome vector is

A) Zero
B) Non zero
C) Infinity
D) None of the mentioned

(LXIV) In PCM encoding, quantization level varies as a function of _____

A) Frequency
B) Amplitude
C) Square of frequency
D) Square of amplitude

(LXV) Which value of μ corresponds to linear amplification?

A) μ=0
B) μ=1
C) μ>0
D) μ<0

(LXVI) The sampling process includes methods such as

A) Filtering
B) Sample and hold
C) Amplifying
D) None of the mentioned

(LXVII) In orthogonal signal, all cross correlation coefficients are

A) One
B) Zero
C) Negative
D) None of the mentioned

(LXVIII) Examples of PCM waveforms are

A) Non return to zero
B) Phase encoded
C) Multilevel binary
D) All of the mentioned

(LXIX) Non uniform quantization provides better quantization for

A) Weak signals
B) Coarse signals
C) Weak & Coarse signals
D) None of the mentioned

(LXX) DPCM encodes the PCM values based on

A) Quantization level
B) Difference between the current and predicted value
C) Interval between levels
D) None of the mentioned