

Quiz

Note: All questions carry equal marks (60 x 1 =60)

1. What is compression?
 - a. To convert one file to another
 - b. **To reduce the size of data to save space**
 - c. To minimize the time taken for a file to be downloaded
 - d. To compress something by pressing it very hard
2. Digital video is sequence of
 - a. A. pixels
 - b. B. matrix
 - c. **C. frames**
 - d. D. coordinates
3. Sequence of code assigned is called
 - a. A. **code word**
 - b. B. word
 - c. C. byte
 - d. D. nibble
4. If the $P(E) = 1$, it means event
 - a. does not occur
 - b. **always occur**
 - c. no probability
 - d. Normalization
5. Source of information depending on finite no of outputs is called
 - a. A. markov
 - b. B. finite memory source
 - c. C. zero source
 - d. **D. Both A and B**
6. Information per source is called
 - a. A. sampling
 - b. B. quantization
 - c. **C. entropy**
 - d. D. normalization
7. Compression is done for saving
 - a. A. storage
 - b. B. bandwidth
 - c. C. money
 - d. **D. Both A and B**
8. Information ignored the human eye is the
 - a. A. coding redundancy
 - b. B. spatial redundancy
 - c. C. temporal redundancy
 - d. **D. irrelevant info**
9. An Image is represented by 65536 X8 bits, and after compression it reduced to 16384 X8 bits. What will be the compression ratio:

- a. 55%
 - b. 65%
 - c. **75%**
 - d. 85%
10. An Image is Square array of 256X256 pixel requires 65536 bytes, and after compression it reduced to 16384 X8 bytes. What will be the compression rate:
- a. **2**
 - b. 3
 - c. 4
 - d. 5
11. In the encoded file, which type of changes are made in sysmbols ?
- a. They are compressed
 - b. They are changed to a letter or symbol
 - c. They are represented in the graphical form
 - d. **No changes are made**
12. An alphabet consist of the letters A, B, C and D. The probability of occurrence is $P(A) = 0.4$, $P(B) = 0.1$, $P(C) = 0.2$ and $P(D) = 0.3$. The Huffman code is
- a. A = 01
B = 111
C = 110
D = 10
 - b. **A = 0, B = 100, C = 101, D = 11**
 - c. A = 0, B = 111, C = 11, D = 101
 - d. A = 0, B = 11, C = 10, D=111
13. The basic idea behind Huffman coding is to
- a. compress data by using fewer bits to encode fewer frequently occuring characters
 - b. **compress data by using fewer bits to encode more frequently occuring characters**
 - c. compress data by using more bits to encode more frequently occuring characters
 - d. expand data by using fewer bits to encode more frequently occuring characters
14. Huffman coding is an encoding algorithm used for
- a. **lossless data compression**
 - b. files greater than 1 Mbit
 - c. broadband systems
 - d. lossy data compression
15. A Huffman code: A = 1, B = 000, C = 001, D = 01 , $P(A) = 0.4$, $P(B) = 0.1$, $P(C) = 0.2$, $P(D) = 0.3$
The average number of bits per letter is
- a. 8.0 bit
 - b. 2.0 bit
 - c. **1.9 bit**
 - d. 2.1 bit
16. Huffman trees use the _____ of each character to work out their encoding.
- a. **Frequency**
 - b. Order in ASCII
 - c. Number value
 - d. Both (a) and (b)

17. Calculate the entropy for : $P(A) = 0.4$, $P(B) = 0.2$, $P(C) = 0.2$, $P(D) = 0.1$, $P(E) = 0.1$
- a. 1.24
 - b. 1.22**
 - c. 1.28
 - d. 1.30
18. Average length of Extended Huffman code is upper bounded by :
- a. R
 - b. $R+1$
 - c. $R-1$
 - d. $R+1/n$**
19. If the probability is not given which method is preferable
- a. Huffman
 - b. Non Binary Huffman
 - c. Adaptive Huffman**
 - d. Extended Huffman
20. Compression method use for Integer type data
- a. Huffman
 - b. LZ77
 - c. Golomb Code**
 - d. Adaptive Huffman
21. In Huffman encoding, both the sender and receiver must have a copy of the code
- a. Same**
 - b. Different
 - c. Generate on Demand
 - d. Both (a) and (b)
22. In the multimedia contents, coding and decoding is performed by a software component known as:
- a. codec**
 - b. modem
 - c. sodec
 - d. bodec
23. In dictionary techniques for data compaction, which approach of building dictionary is used for the prior knowledge of probability of the frequently occurring patterns?
- a. Static Dictionary**
 - b. Adaptive Dictionary
 - c. both a and b
 - d. None of the above
24. *Dictionary order* is sometimes used as a synonym for:
- a. Alphabetical order
 - b. Lexicographical order**
 - c. Alphanumerical order
 - d. Both (a) and (c)
25. How many character an encoder reads and searches the dictionary to see if this input exists in the dictionary.
- a. 2 character**

- b. 1 character
 - c. 3 character
 - d. Both (a) and (b)
26. Sliding windowing technique is used in which dictionary compression
- a. LZW
 - b. LZ77**
 - c. LZ78
 - d. Diagram coding
27. . The distance of the pointer from the look-ahead buffer is called :
- a. Length
 - b. Offset**
 - c. Triplet
 - d. Code
28. The UNIX compress command is one of the earlier applications of
- a. LZ77
 - b. LZ78
 - c. Huffman
 - d. LZW**
29. The basic algorithm initially attempts to use the _____ context.
- a. Small
 - b. Shortest
 - c. Longest**
 - d. Zero
30. An _____ is encoded and the algorithm attempts to use the next smaller context.
- a. One length context
 - b. Zero context
 - c. Escape symbol**
 - d. None
31. The CALIC scheme actually functions on :
- a. bi-level images.
 - b. gray-scale images
 - c. RBG images
 - d. Both (a) and (b)**
32. In facsimile transmission, a page is scanned and converted into a sequence of
- a. Binary sequence
 - b. Ternary sequence
 - c. black or white pixels**
 - d. alphanumeric sequence

33. _____ has become quite popular for encoding all kinds of images, both computer-generated and “natural” images.
- a. **GIF**
 - b. PNG
 - c. TIFF
 - d. JPEG
34. A static dictionary technique that is less specific to a single application is:
- a. LZ77
 - b. **Diagram Coding**
 - c. Initial dictionary
 - d. LZW
35. Earliest name of the facsimile coding is _____.
- a. Feminine
 - b. CALIC
 - c. Telephone
 - d. **Fax**
36. Window in dictionary method consists of _____ parts
- a. 1
 - b. 3
 - c. **2**
 - d. 4
37. At any given time, the output of an encoder depends on _____
- a. Past input
 - b. **Present input**
 - c. Both a and b
 - d. None of the above
38. Digital video is sequence of
- a. pixels
 - b. matrix
 - c. **frames**
 - d. coordinates
39. The reconstruction of a _____ constructed sequence is identical to the original sequence.
- a. **losslessly**
 - b. lossy
 - c. Predictive
 - d. None of the above
40. We can improve the amount of _____ by accepting a certain degree of loss during the compression process.

- a. **Compression**
- b. Decompression
- c. Distortion
- d. Compression ratio

41. The difference between the original and reconstructed data, which we will refer to as the _____ in the reconstructed data.

- a. Redundancy
- b. Compression
- c. loss
- d. **Distortion**

42. The rate for a discrete source is simply the _____.

- a. **Entropy**
- b. Loss
- c. Noise
- d. Distortion

43. Popular measures of distortion is

- a. **Squared error measure**
- b. Absolute difference
- c. Noise
- d. Nats

44. Which file format stores multiple files in a single Zip file ?

- a. zap
- b. **zip**
- c. zop
- d. zep

45. The process of representing Infinite set of values with a much smaller set is called

- a. Mapping
- b. clustering
- c. **Quantization**
- d. Sampling

46. A simple quantization scheme would be to represent each output of the source with the _____ value closest to it.

- a. Codeword
- b. **Integer**
- c. Binary sequence
- d. Coordinates

47. The design of the _____ has a significant impact on the amount of compression.

- a. Cluster
- b. **Quantizer**

- c. Codebook
 - d. Both (b) and (a)
48. Quantization techniques that operate on blocks of data are called
- a. Adaptive quantization
 - b. Non uniform Quantization
 - c. Scalar Quantization
 - d. None of the Above**
49. Set of L-dimensional blocks called the _____ of the vector quantizer.
- a. Group
 - b. Codebook**
 - c. Coding
 - d. Index
50. LBG algorithm is used to design a _____.
- a. Quantizer
 - b. Vector
 - c. Codebook**
 - d. Index table
51. _____ shape is used to make codebook in structure vector quantization.
- a. Square
 - b. Rectangle
 - c. Circle
 - d. Hexagon**
52. In polar vector quantization r is called _____.
- a. Quantum
 - b. Phase
 - c. Magnitude**
 - d. None of above
53. In Tree structures vector quantization cluster is divided in
- a. 2 groups**
 - b. 3 groups
 - c. Infinite groups
 - d. N groups
54. Run length encoding is a compression method in which repeated _____ of a symbol are replaced.
- a. Residual
 - b. Occurrence**
 - c. Letters
 - d. None

55. Extended Huffman method is used due to

- a. Large alphabet
- b. Skewed probability**
- c. Equal probability
- d. Both (a) and(b)

56. Probability model is based on

- a. Probability
- b. Physics
- c. Frequency**
- d. None

57. Entropy of a source is

- a. Self information of the source
- b. Average self information**
- c. Average number of bits
- d. Both (a) and (b)

58. ASCII Code is a example of

- a. Prefix code
- b. Variable length code
- c. Fixed length code**
- d. Alphanumeric code

59. Code {0,10,100,111} is :

- a. UDC
- b. Prefix code
- c. Instantaneous code
- d. All above**

60. Code {0,01,11,111} is UDC.

- a. True
- b. False**