

Unit Test | Data: Compression

Fill in the blank:

1. _____ is a data compression algorithm that allows the original data to be perfectly reconstructed from the compressed data.
2. _____ is a problem-solving approach (algorithm) to find a satisfactory solution where finding an optimal or exact solution is impractical or impossible.
3. _____ is data about the data that usually comes at the beginning of a file.
4. It takes _____ bit(s) to represent 1 pixel in a black and white image.
5. It takes _____ bit(s) to represent 1 pixel in an RGB image.
6. _____ is the universally recognized raw text format that any computer can understand where every letter, number, and symbol is represented by a number between 0-255.
7. _____ is the transmission capacity measure by bit rate.
8. A(n) _____ is the single unit of information in a computer, typically represented as a 0 or 1.
9. _____ is the number of bits that are conveyed or processed per unit of time (e.g. 8 bits/sec).
10. _____ is a way of representing information using only two options.

Match the following to the correct file type:

- | | |
|---|---|
| 11. A lossless image that reduces file size without diminishing quality of image, encodes 8-bit data as 12-bit codes. | 17. An uncompressed audio file that allows developers to freely move audio between platforms. |
| 12. A lossless image that uses 4 bit or 8-bit RLE or Huffman 1D algorithm. | a) BMP |
| 13. A lossless image that is a less improved, non-patented replacement for the GIF File. | b) JPG |
| 14. A lossy image that ignores the minor details of the image in order to reduce the file size. | c) WAV |
| 15. A lossless data container. | d) PNG |
| 16. A lossy audio file that reduces the precision of parts of the data that are not audible to humans. | e) MP3 |
| | f) GIF |
| | g) ZIP |

True or False:

- 18. FFFFFFFF is used to represent the color black in RGB.
- 19. (0, 255, 0) is yellow in RGB.
- 20. Heinrich Hertz is credited with inventing radio.

Convert the following:

- 21. 621 (B10 to B2)
- 22. B12 (Hex to B10)
- 23. 653 (B7 to B6)
- 24. 2222 (B3 to B11)
- 25. 1XD (B36 to Hex)