

# Compression

1. State what is meant by “compression” [1]
2. State **two** advantages of compressing files before sending them over the internet [2]
3. Explain **one** disadvantage of compressing files [2]
4. Name **one** compressed file format [1]

# RLE Compression

Run Length Encoding - uses **frequency/data pairs** to compress data

1w2o2l2o1m2o1l2o

- simple
- lossless
- usually reduces file size (1w2o1l)

# RLE Compression

1. Encode the string “FFFKKEEELLLSDW” using Run Length Encoding [2]
2. Encode the string “54443991” using Run Length Encoding [2]
3. The string “4s2o1P3K1k” has been encoded using Run Length Encoding. Decode it. [2]
4. Sylvia has written “Run Length Encoding is good because it always reduces the length of a file”. Explain why she is wrong. [3]

# Huffman Coding

Uses the frequency of letters to compress files

- uses huffman trees (binary trees)
- more frequent letters at the top of the tree - these require less bits to encode
- Less frequent letters at bottom of tree - require more bits
- Works best with files where some letters occur frequently
- lossless
- complex