**Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Dep\_\_\_\_\_**

1. Apply run length encoding to compress following stream of alphabetical tokens

1. **AAABBCDDDD**
2. **ABBAARNOOGOODEEEHHHHH**

2. Show how you would use Huffman coding to encode the following set of tokens:

**BABACACADADABBCBABEBEDDABEEEBB**

1. How many bits are needed transfer this coded message?
2. *Average length of code?*
3. *Generate code sequence for symbols “***BAC”**
4. *Decode the sequence “***01001111”**

3. Briefly state the LZW compression algorithm and show how you would use it to encode the following stream of characters:

**MYMEMYMO**

4. Given an initial dictionary:

|  |  |
| --- | --- |
| **Index** | **Entry** |
| 1 | A |
| 2 | B |
| 3 | H |
| 4 | I |
| 5 | S |
| 6 | t |

and output of an LZW encoder:

**6 3 4 5 1 3 1 6 2 9 11 16**

1. Decode the above sequence?