

**Laboratory Experiment No. 03**

**Problem Statement:** Simulate Shannon fano/ Huffman code using MATLAB/Octave. **Determine** Efficiency and redundancy for the given Source Coding technique. (D1)

```
clc;
clear all;
close all;
pkg load communications
symbols = 1:5;
p=[0.4 0.2 0.2 0.1 0.1];
disp(symbols);
disp(p);
dict = huffmandict(symbols,p);
disp(dict);
inputSig = randsrc(10,1,[symbols;p]);
disp(inputSig);
code = huffmanenco(inputSig,dict);
disp(code);
decode = huffmandeco(code,dict);
disp(decode);
```

**Output:**

```
1 2 3 4 5
0.40000 0.20000 0.20000 0.10000 0.10000
{
[1,1] = 1
[1,2] =
0 1
[1,3] =
0 0 1
[1,4] =
0 0 0 0
[1,5] =
0 0 0 1
}
1
1
5
5
1
1
5
1
2
3
1 1 0 0 0 1 0 0 0 1 1 1 0 0 0 1 1 0 1 0 0 1
1 1 5 5 1 1 5 1 2 3
```