

# Problem No. 1

- Let the probabilities for the outcomes A, B and C are  $p(A)=0.7$ ,  $p(B)=0.2$ ,  $p(C)=0.1$  respectively. The coding scheme for each symbol is given as follows:

Source Symbol	Codeword
A	0
B	10
C	11

Determine the average codeword length, coding efficiency, entropy of the source.



## Problem No. 2

- Let us consider the different coding schemes given in table for encoding symbols A, B, C and D.

	Probability	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>
<b>A</b>	0.6	00	0	0	0	0	0
<b>B</b>	0.25	01	10	10	01	10	10
<b>C</b>	0.1	10	110	110	011	11	11
<b>D</b>	0.05	11	1110	111	111	01	0

## Problem No. 2 Cont...

- Determine the following:
  1. Which is an efficient code?
  2. Which is a block code?
  3. Which are singular codes?
  4. Which are non-singular codes?
  5. What are reversible codes?
  6. Which are instantaneous codes?

