EENG 410 Homework #7

1. Determine the generator polynomial $g(X)$ for the BCH(31,21) two-error correcting code.

2. The BCH(15,7) two-error correcting code has the generator polynomial $g(X)$:

   $g(X) = 1 + X^4 + X^6 + X^7 + X^8$

   Use this to systematically encode the message word $m = [1101010]$.

3. Verify that $c = [000010001011100]$ is a valid BCH(15,7) two-error correcting code word.

4. Verify that the generator polynomial $g(X)$ for the RS(7,3) two-error correcting code is:

   $g(X) = \alpha^3 + \alpha X + X^2 + \alpha^3 X^3 + X^4$

5. Systematically encode the message word $m = [010110111]$ using the RS(7,3) two-error correcting code.

   Answer: $c = [100001011101010110111]$