

Name: _____

Dr. Xing

(5)

Review Questions

- Assume $(v_0, v_1, v_2, v_3, v_4, v_5, v_6) = (0111001)$ is a valid non-separable $(7,4)$ cycle code word for the data word $(d_0, d_1, d_2, d_3) = (0101)$. What is the generator polynomial of this code?

$$v(x) = x^6 + x^5 + x^2 + x \quad (1)$$

$$d(x) = x^3 + x \quad (1)$$

$$G(x) = \frac{v(x)}{d(x)}$$

$$\begin{array}{r}
 x^5 + x + 1 \\
 \hline
 x^3 + x \quad \left. \begin{array}{l} x^6 + x^5 + x^2 + x \\ x^6 + x^4 \end{array} \right\} \\
 \hline
 x^4 + x^3 + x^2 + x \\
 x^4 + x^2 \\
 \hline
 x^3 + x \\
 x^3 + x \\
 \hline
 0
 \end{array} \quad (3)$$

$$G(x) = x^2 + x + 1$$