Name Removed

Mobile Networking – Homework 3

**P4.3**

n = 7

k = 4

parity bits = n – k = 7 – 4 = 3

G = [Ik|P]kxn = [I4|P]4x7

Ik = [1 0 0 0, 0 1 0 0, 0 0 1 0, 0 0 0 1]

p1 = [x3/1 + x^2 + x^3] = x^2 + 1 = [101]

p2 = [x4/1 + x^2 + x^3] = x^2 + x + 1 = [111]

p3 = [x5/1 + x^2 + x^3] = x + 1 = [110]

p4 = [x6/1 + x^2 + x^3] = x^2 + x = [011]

G = [ 1 0 0 0 1 0 1

0 1 0 0 1 1 1

0 0 1 0 1 1 0

0 0 0 1 0 1 1 ]

**P4.7**

n = 7

k = 4

parity bits = n – k = 7 – 4 = 3

G = [Ik|P]kxn = [I4|P]4x7

Ik = [1 0 0 0, 0 1 0 0, 0 0 1 0, 0 0 0 1]

p1 = [x3/1 + x^3] = 1 = [100]

p2 = [x4/1 + x^3] = x = [010]

p3 = [x5/1 + x^3] = x^2 = [001]

p4 = [x6/1 + x^3] = 1 = [100]

G = [ 1 0 0 0 1 0 0

0 1 0 0 0 1 0

0 0 1 0 0 0 1

0 0 0 1 1 0 0 ]

**P5.4**

a = lambda\*T

lambda = number\_requests/time\_in\_seconds = 60/3600 = 1/60 requests/second

T = average holding time = 5% of 1 hour = .05\*3600 = 180 seconds

a = (1/60)\*180 = 3 Erlangs

**P5.7**