Leonardo Fusser (1946995) May 7th, 2021

Assignment #4

Networking Fundamentals 247-409-VA

Andreea Iftimie

1)

$Bit\ rate = Baud\ rate = 57.6kbps\ (because\ only\ 1\ bit\ transmitted\ per\ symbol)$

$Bit\ time = \frac{1}{Data\ rate} = \frac{1}{57.6kbps} = \sim 17.36uS$

2)

$Bit\ rate = Baud\ rate = 19.2kbps\ (because\ only\ 1\ bit\ transmitted\ per\ symbol)$

$Bit\ time = \frac{1}{Data\ rate} = \frac{1}{19.2kbps} = \sim 52.08uS$

$(It\ takes\ 10\ bits\ to\ send\ 8\ bits\ of\ data\ which\ is\ 1\ byte.\ 10\ bits = 1\ start\ bit + 1\ stop\ bit + 8\ data\ bits.)$

$Time\ to\ send\ 1\ byte = Bit\ time * Number\ of\ bits\ sent = \sim 52.08uS * 10\ bits = 520.8uS$

$Time\ to\ send\ 20\ bytes = Time\ to\ send\ 1\ byte * 20\ bytes = 520.8uS * 20\ bytes = \sim 10.41mS$

3) $(8\ bits + even\ parity + 2\ stop\ bits\ @\ 9600\ baud)$

a) $Percentage\ overhead = \left(\frac{1+2+1}{1+2+1+8}\right) * 100\% = \sim 33.33\%$

b) $Percentage\ of\ good\ data = \left(\frac{8}{1+2+1+8}\right) * 100\% = \sim 67\%$

c) $Bit\ rate = Baud\ rate = 9.6kbps\ (because\ only\ 1\ bit\ transmitted\ per\ symbol)$

$Maximum\ effective\ data\ rate = \sim 0.67 * 9.6kbps = 6.432kbps$