Communication Systems 1 (COMP1587) – Mock Test

You have 90 minutes to answer all questions. Show calculations. Where appropriate answers must be in Engineering Notation. This is a closed books test. You can use a calculator.

SURNAME:	FIRST NAME:	ID:	

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1. How long would a 10 MB animation take to transfer via a 100 Gbps channel? [/10]

Answer

2. A flat addressing scheme uses 9 binary bits. How many unique addresses can be formed? [/10]

Answer

3. A single core microprocessor has a clock speed of 3 GHz. What is the duration of a one clock cycle? [/10]

Answer

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4. Calculate the maximum capacity C, in bps for a transmission channel with a bandwidth of 250 Hz and a signal to noise ratio of 15 dB [/10]

Answer

5. What IP address class is 214.35.5.25, what is the default subnet mask for this class, and what is the network address of the class? [/10]

Answer

6. How many subnets and hosts per subnet can you get from the network 214.35.5.0 / 255.255.255.192? [/10]

Answer

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7. Consider the following bit sequence. What bits do you need to add and where for LRC with even parity (use blocks of seven data bits)? 10001011100111101001011011111 [/10]

Answer

8. Why does the mobile phone cellular system use hexagons rather than squares or circles? [/10]

Answer

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9. What is the hamming distance of the following code? Is it possible for an error control system to correct one error? [/10]

A	000000
B	000110
C	000101
D	111111

10. What is the instantaneous amplitude of a sinusoidal signal with period T = 120 ns and peak amplitude of 20 V at t = 30 ns. Remember that peak amplitude is the highest amplitude value of the signal. [/10]