Name: ____________________________________________

Operating Systems
Sample Quiz

Please write all answers on this sheet.

1. Powers of 2
   a) Multiple Choice: Please circle the correct answer.
      i. \( 2^6 = \) 32 64 100 128
      ii. \( 2^{12} = \) 2K 4K 2M 4M
      iii. \( 2^{37} = \) 64K 128M 128G 256T
   b) Fill in the blank: Another way to write \( 2^{M+N} \) is ____________.
   c) A 28-bit number can take on how many different values? Answer: ________.

2. Logs
   a) Multiple Choice: Please circle the correct answer.
      i. \( \log_2 2T = \) 21 32 41 42
      ii. \( \log_2 64K = \) 11 16 19 27
      iii. \( \log_2 1 = \) 0 1 2 3
   b) Fill in the blank: Another way to write \( \log_2 (M\times N) \) is ____________.
   c) If a memory contains 4GB (4G bytes) and each byte is individually addressable, how many bits must an address contain in order to reference any byte of the memory? Answer: ____________.

3. Binary/Hex/Decimal
   a) Multiple Choice. Please circle the correct answer.
      i. 9 decimal equals what in binary? 1000 1001 1010 1100
      ii. 1111 binary equals what in decimal? 10 13 15 17
      iii. C hex equals what in decimal? 10 11 12 13
   b) How would the binary number 101110100111000 be written in hex? Answer: ________________.
   c) How would BE43 hex be written in binary? Answer: ____________________.