**State your assumptions and show all of your reasoning and all computations. All work must be done on this sheet (there are two sides to this quiz!)**

1. (5 pts) When selecting a new processor, one requirement may be that the new processor must have multiple sources. List two other considerations when selecting a controller for a new embedded application:

Availability

Power Consumption

1. (5 pts) Power is an input to the Microcontroller on your MSP432 development board. Name two other kinds of inputs:

A Common ground (Pullup resistors)/ digital inputs

B Analog Sensors

1. (5 pts) The MSP432 uses the Harvard architecture which has two separate main busses to get data into the core. What kind of data does each buss retrieve?
2. Instructions (Register Data P1\_>DIR)
3. Data (Program flow, the executable .o file produced when building the project)
4. (5 pts) What 2 operations can the PxOUT perform? (Hint- only one operation is performed while PxDIR =1)
5. Set a pin (bit) high
6. Set a pin (bit) low
7. (5 pts) What is the PxREN command used for?

Used to enable the internal pull resistor

Answer the following multiple-choice questions (5 pts each) by circling the best answer. If unsure between two answers, provide a brief reasoning for your choice.

1. What is the maximum voltage that the MSP432 can tolerate on an input pin?
2. 3.7V
3. 2.0V
4. 5.0V
5. any voltage- as long as the current is low enough
6. What is the maximum number of data bits the MSP432 core can support in one buss cycle?
7. 8 bits
8. 16 bits
9. 32 bit
10. 64 bits
11. none of these
12. Which core is used on the TI MSP432 Microcontroller?

(a) ARM Cortex M

(b) ATMEL AVR

(c) Intel X86

(d) Motorola 68000

(e) Microchip PIC

1. What is the maximum current that MOST pins of the MSP432 can supply?

(b) 6 mA

(c) 20 mA

(d) 100 mA

(e) whatever the power supply can deliver

1. What is the size of the address buss in the MSP432?
2. 8 bits
3. 16 bits
4. 32 bit
5. 64 bits
6. none of these