

Name: Solution Campus Mail: _____

- 1) FreeScale is an offshoot of
 - a. Intel
 - b. Microchip
 - c. Motorola**
 - d. Texas Instruments
 - e. ATMEL
- 2) The specific FreeScale microcontroller we will work with in this course is called
 - a. MC9S12C128**
 - b. CSMB12C128
 - c. CodeWarrior
- 3) This microcontroller is a direct offshoot of the venerable ? family of microcontrollers.
 - a. MCHC68000
 - b. MC68HC11
 - c. MC68HC12**
 - d. PIC16Fxxx
- 4) This microcontroller is mounted on a module that is manufactured for FreeScale by Axiom Manufacturing is called
 - a. MC9S12C128
 - b. CSMB12C128**
 - c. CodeWarrior
 - MC68HC12
- 5) The FreeScale software package used for microcontroller program development (Integrated Development Environment, IDE) with this microcontroller is called
 - a. MC9S12C128
 - b. CSMB12C128
 - c. CodeWarrior**
- 6) Besides the central processing unit (CPU), a modern microcontroller chip has on-board
 - a. program memory
 - b. data read/write memory RAM
 - c. I/O units
 - d. all of the above**
- 7) Today you might expect to find a microcontroller inside a:
 - a. ski boot
 - b. soldering iron
 - c. DVD player
 - d. pacemaker
 - e. light dimmer
 - f. all of the above**
- 8) How many microcontrollers might you expect to find in a modern automobile that share one or more common interconnecting communication busses? A. 1 B. 2 C. 5 **D. >20**
- 9) How many lines of C and assembly code might be expected in the design of a modern automobile?
 - a. 100
 - b. 1000
 - c. 100,000
 - d. >1,000,000**
- 10) What is the name of the 1978 RHIT alumnus who pioneered the development of the microcontroller, and who is now a senior executive at Apple Computer?
 - A. Steve Wozniak
 - B. Steve Jobs
 - C. Al Shipp**
 - D. Jeff McCreary
- 11) The COP watchdog timer on board the 9S12C128 microcontroller is used to
 - a. get a critical program "back on track"**
 - b. guard against chip hardware design piracy
 - c. provide 24 hour clock capability
 - d. protect against software piracy
- 12) After enabling the COP, the programmer must be sure to ? at periodic intervals.
 - a. reset it**
 - b. increment it
 - c. decrement it
 - d. halt it
- 13) Flash memory is usually used to store ?.
 - a. Read/Write Data
 - b. Program and Read Only Data**
 - c. Stack

Compared to RAM, flash memory takes a relatively long time to ?

 - a. be read from
 - b. to be written to**

Unlike RAM, flash memory is ?

 - a. volatile (loses data when powered off)
 - b. nonvolatile (retains its data when powered off)**
- 14) The SPI port is organized as an internal 8-bit shift register inside the microcontroller that permits data from many input and output devices to simultaneously be serially shifted into and out of the microcontroller. To simultaneously drive out 12 bytes of data, and to input 23 bytes of data, would require the use of about ? microcontroller I/O pins. a. 1 **b. 3** **c. 5** d. 7 e. 13 f. 35 g. 280
- 15) The ? port implements standard asynchronous serial (RS232) communications
 - a. SPI
 - b. SCI**
 - c. CAN
 - d. I2C

