**Module 11: Arm CMSIS and Software Drivers**

1. Which of the following statements is an advantage of CMSIS? (There may be more than one correct answer.)

1. It saves the microcontroller’s time.
2. It allows the porting of software between Cortex-M0 and Cortex-M1.
3. It provides a standardized software interface.
4. It supports concurrent executions of service routines.

2. Which of the following factors can help speed up the development time of embedded systems?

1. Using third party software components
2. Having portable software that can be used in several projects
3. Having a standardized software interface that is independent of the hardware platform
4. All of the above.

3. Which of the following areas of embedded software have been standardized by CMSIS? (There may be more than one correct answer.)

1. Functions for accessing NVIC, system control block (SCB), and System Tick timer
2. Functions for accessing sleep mode-related instructions
3. Functions to enable interrupt
4. Software drivers for peripherals

4. Which of the following benefits are likely to be gained when using Arm CMSIS? (There may be more than one correct answer.)

1. Better compatibility when integrating third-party software components
2. Better code density
3. Improved performance of the embedded system
4. Smaller memory footprint

5. Which of the following tasks is not performed by a device driver?

1. Interfacing between the OS and a peripheral
2. Executing ISRs invoked by peripheral interrupts
3. Providing a hardware interface between external devices and the system bus
4. All of the above.

6. Which of the following statements is correct?

1. The development of a device driver for a peripheral connected to an embedded system typically requires detailed knowledge of the hardware design of the device but no knowledge of the OS run by the embedded application.
2. The development of a device driver for a peripheral connected to an embedded system typically requires detailed knowledge of the hardware design of the device and the OS run by the embedded application
3. The development of a device driver for a peripheral connected to an embedded system typically requires very little knowledge of the hardware design of the device, but needs detailed understanding of the OS run by the embedded application.
4. None of the above.

7. Which of the following information is typically included in a peripheral driver software? (There may be more than one correct answer.)

1. The memory addresses of the peripheral internal registers
2. The base address of the memory space allocated to the peripheral
3. The data contents of the internal registers of the peripheral
4. All of the above.

8. Which of the following names are likely to be used for a device header file?

1. Header.d
2. vga.s
3. timer.h
4. uart.r

9. Which of the following tasks can be performed using CMSIS functions?

1. Initiate a system reset request.
2. Disable an interrupt or exception.
3. Trigger the processor to enter sleep mode.
4. All of the above.

10. Which of the following CMSIS functions need to use to the program SysTick to generate SysTick exceptions every 10 ns, assuming the system clock is 2 GHz?

1. SysTick\_Config(5)
2. SysTick\_Config(20)
3. SysTick\_Config(10)
4. SysTick\_Config(2)