CSE347 (UG2013) - Embedded System Design (21538)

Started on	Saturday, 21 August 2021, 10:00 PM
State	Finished
Completed on	Saturday, 21 August 2021, 10:02 PM
Time taken	2 mins 9 secs
Grade	**5.00** out of 5.00 (**100**%)

Question **1**
Correct
Mark 1.00 out of 1.00
Flag question

What is the CPU register that holds the address of the next instruction to be executed?

Select one:
- a. Link register
- b. Program counter ✔
- c. Program status register
- d. Stack pointer

The correct answer is: Program counter

Question **2**
Correct
Mark 1.00 out of 1.00
Flag question

If you are doing context switching manually, which registers that you should manually save on the stack by yourself (other than those saved by the hardware)?

Select one:
- a. R11, R10, R9, R8, R7, R6, R5, and R4 ✔
- b. SP, PRIMASK, and FAULTMASK registers
- c. PRIMASK and FAULTMASK registers
- d. PSR, PC, SP, LR, R12, R3, R2, R1, and R0

The correct answer is: R11, R10, R9, R8, R7, R6, R5, and R4

Question **3**
Correct
Mark 1.00 out of

Which of the following is NOT a part of the Exception frame?

Select one:

Question **3**
Correct
Mark 1.00 out of 1.00
Flag question

Which of the following is NOT a part of the Exception frame?

Select one:
- a. Program counter
- b. Stack pointer ✔
- c. Link register
- d. PSR

The correct answer is: Stack pointer

Question **4**
Correct
Mark 1.00 out of 1.00
Flag question

Which of the following can periodically trigger the context switch?

Select one:
- a. Memory
- b. Peripheral
- c. SysTick timer ✔
- d. Watchdog timer

The correct answer is: SysTick timer

Question **5**
Correct
Mark 1.00 out of 1.00
Flag question

What is the register that its value should change to do the context switching?

Select one:
- a. PSR
- b. SP (Stack pointer) ✔
- c. Link register
- d. PC

The correct answer is: SP (Stack pointer)

Question 1
Correct
Mark 1.00 out of 1.00
Flag question

When does the program go to the OS code?

Select one:
- a. After the time slice elapses
- b. When the program calls an RTOS api
- c. On peripheral interrupt
- d. A & B ✔
- e. B & C

Your answer is correct.
The correct answer is: A & B

Question 2
Correct
Mark 1.00 out of 1.00
Flag question

In a FreeRTOS project, two tasks were created (Task A & Task B). Task A is a periodic task while task B is continuous task that gets blocked on xBinarySemaphore. If task B has higher priority than task A, and an interrupt was triggered during the execution of task A, if the ISR calls xSemaphoreGiveFromISR (xBinarySemaphore, &xHigherPriorityTaskWoken) API, what would be the value of xHigherPriorityTaskWoken ?

Select one:
- a. True ✔
- b. False
- c. Non determined

Your answer is correct.
The correct answer is: True

Question 3
Correct
Mark 1.00 out of 1.00
Flag question

Multiple reader tasks are blocked on the same queue waiting for data to become available. When the data becomes available inthe queue, which task will be unblocked?

Select one:
- a. The task with the higher priority ✔
- b. The task created first
- c. The last task that read from the queue
- d. The task that has been waiting for data the shortest

Your answer is correct.

The correct answer is: The task with the higher priority

Question 4

Correct

Mark 1.00 out of 1.00

Flag question

The usage of the binary semaphores is analogous to the usage of flags. in that case the function of the xSemaphoreGiveFromISR (xBinarySemaphore, &xHigherPriorityTaskWoken) API is to:

Select one:

- a. Set the flag ✔
- b. Wait for the flag
- c. Check the flag
- d. Clear and wait for the flag
- e. Clear the flag

Your answer is correct.

The correct answer is: Set the flag

Question 5

Correct

Mark 1.00 out of 1.00

Flag question

If a reader task is blocked on a queue, and its blockage time expires before the data becomes available in the queue. What will happen to the task?

Select one:

- a. The task will get deleted
- b. The task will get suspended until data become available in the queue.
- c. The task will be unblocked and continues its code without reading from the queue. ✔
- d. The task will be kept blocked until data become available

Your answer is correct.

The correct answer is: The task will be unblocked and continues its code without reading from the queue.

Finish review