Advanced(1) Exam(1)

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Your name: *

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0/1   An example of core peripherals in an ARM based microcontroller -1   ✕

✕   RCC ◉

DMA ○

MPU ○

None of the previous ○

الإجابة الصحيحة

MPU ◉

1/1   The peripheral that is used as the reset manager is called -2   ✓

ICD ○

AHB ○

MPU ○

✓   None of the previous ◉

1/1   When HSE is configured as system clock, CSS enabled, and an HSE -3
failure occurs, the microcontroller will shut down   ✓

True ○

✓   False ◉

1/1   when switching from HSE to HSI clock to be the clock source , but the -4
HSI is disabled , the stm32 will   ✓

✓   choose the external clock to be the clock source ◉

enable the internal clock and make it the clock source ○

undefined behavior ○

none of the previous ○

1/1   Crystal clock system provides high noise immunity against -5   ✓

✓   Temperature variance ☑

✓   EMI ☑

Vibration ☐

All of the above ☐

6- The RISC processor insures higher throughput than CISC ✗ 0/1

True ◯

✗ False ◉

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True ◉

7- ARM cortex M family supports both ARM set and Thumb set ✓ 1/1

True ◯

✓ False ◉

8- The following could be used for measuring digital signals and clock ✗ 0/1
frequency

✓ Digital oscilloscope ☑

Analog oscilloscope ☐

✓ Logic analyzer ☑

✗ Frequency spectrum ☑

الإجابة الصحيحة

Digital oscilloscope ☑

Analog oscilloscope ☑

Logic analyzer ☑

9- The watchdog timer is used for ✓ 1/1

✓ Ensuring execution of the software doesn't stay trapped in an endless loop or ◉
blocked state

Scheduling the different software tasks according to their timing requirements ◯

Generating timely interrupts to trigger execution of software tasks ◯

Generating PWM signals through dedicated microcontroller pins ◯

10- If an 8 bit timer is used to measure the period of an external signal, 2 ✗ 0/1
samples were taken, sample 1 was at count 60, sample 2 was at count 10 ,
number of overflow interrupts was one, and the timer frequency was 1MHz,
the measured period is:

562 us ◯

306 us ◯

206 us ◯

✗ None of the previous ◉

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206 us ◉

0/1   11- The critical section allowed on a timer based solution to measure the ✗
duty cycle of a PWM signal that will vary from 10~95% with frequency
1KHz is:

0.05 ms ○

0.95 ms ○

0.1 ms ○

✗   1 ms ◉

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0.95 ms ◉

1/1   12- A switch that has four positions, to transfer the switch positions to a ✓
microcontroller, while keeping minimum I/O usage, It is better to use

✓   Analog voltage divider ◉

Four digital channels ○

None of the previous ○

1/1   13- The complexity of a linear search algorithm is ✓

✓   O(n) ◉

O(log n) ○

O(n^2) ○

0/1   14- Normally IIC pins should be ✗

Pulled up ○

Pulled down ○

✗   None of the previous ◉

الإجابة الصحيحة

Pulled up ◉

0/1   15- A PWM signal is not characterized by ✗

Frequncy ○

Duty Cycle ○

Rise time and fall time ○

✗   None of the previous ◉

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Rise time and fall time ◉

1/1   16- The interrupt controller in ARM-based microcontrollers always support ✓
nesting, whatever the micrcontroller vendor is

✓   True ◉

False ○

1/1　17- ARM cortex M family supports both SWD and JTAG protocols for debugging, but SWD is preferred for its fewer interfacing pins ✓

✓ True ◉
False ○

1/1　18- In ARM processors code can only be fetched from code region to prevent code injection attacks ✓

True ○
✓ False ◉

1/1　19- In ARM cortex processors, the core communicates with the core peripherals via the system bus ✓

True ○
✓ False ◉

0/1 20- Core peripherals registers can only be accessed by assembly because they are inside the processor ✗

✗ True ◉
False ○

الإجابة الصحيحة
False ◉

1/1　21- Fetching data and instructions can be done simultaneously from the flash ✓

✓ True ◉
False ○

1/1　22- Processor can communicate with flash and SRAM simultaneously ✓

✓ True ◉
False ○

1/1　23- Bus matrix in stm32f4xx microcontrollers is a single master multi slave communication interface ✓

True ○
✓ False ◉

0/1　24- During thread mode, to shift from unprivileged to privileged: ✗

The software should write to the privilege bit in the CONTROL register ☐

The software should use specific assembly instructions ☐

✕ The software should undergo reset ☑

None of the previous ☐

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None of the previous ☑

1/1 :To shift from privileged thread to unprivileged -25 ✓

✓ The software should write to the privilege bit in the CONTROL register ☑

✓ The software should use specific assembly instructions ☑

The software should undergo reset ☐

None of the previous ☐

1/1 stm32 microcontrollers support multiple clock sources but only one -26 ✓
clock is turned on at a time

True ◯

✓ False ⦿

0/1 using extern keyword informs the compiler of the variable type but -27 ✕
doesn't allocate memory for it

True ◯

✕ False ⦿

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True ⦿

1/1 If a 16-bit microcontroller is used with a 12-bit ADC to measure a signal -28 ✓
with 5 Volts maximum, The resolution is

1.2 uv ◯

✓ 1.2 mv ⦿

19.5 mv ◯

0/1 PWM signal that has 2 messages in it can be read by -29 ✕

✕ two interrupts ⦿

Edge counter ◯

ICU ◯

Polling ◯

None of the previous ◯

الإجابة الصحيحة

ICU ⦿

1/1   Clock skew is one of the disadvantages of serial communication -30
                                                                protcols

                                                        True ⭕

✓   False ⦿