Quiz 1

Due Sep 15 at 1:05pm **Points** 20 **Questions** 4
Available until Sep 15 at 1:10pm **Time Limit** 20 Minutes

This quiz was locked Sep 15 at 1:10pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	16 minutes	19 out of 20

Correct answers are hidden.

Score for this quiz: **19** out of 20
Submitted Sep 15 at 12:58pm
This attempt took 16 minutes.

Incorrect

Question 1

5 / 5 pts

Provide 2 of the 4 reasons for designing embedded systems from an Architectural POV (point of view):

It allows even non t

It enables reuse of

Answer 1:

It allows even non technical people the ability to estimate risks of a project.

Answer 2:

It enables reuse of components

Incorrect

Question 2

5 / 5 pts

Name 2 standards organizations that are concerned with **safety** of electronics products.

1. International Electrc
2. International Orgar

Answer 1:

International Electrotechnical Commission (IEC)

Answer 2:

International Organization for Standardization (ISO)

Question 3

5 / 5 pts

Match the ARM M0+ register to it's function

Program Counter	R15
Link Register	R14
Stack Pointer	R13

Low General Purpose REgister R0

Partial

Question 4

4 / 5 pts

Circle, True or false about the ARM Cortex M0+

- [x] It has a register bank of at least 16 32-bit registers T F
- [x] It has a Link Register used to store the return addresss of a subroutine or function call. T F
- [x] On reset the processor loads the program counter (PC) with the value of the reste vector at 0x0000. T F
- [ ] It is a Harvard Architecture CPU. T F
- [x] It is a RISC Architecture CPU. T F

Quiz Score: **19** out of 20

Quiz 2

Due Oct 6 at 1:05pm **Points** 20 **Questions** 8
Available until Oct 6 at 1:10pm **Time Limit** 20 Minutes

This quiz was locked Oct 6 at 1:10pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	26 minutes	19 out of 20

ⓘ Correct answers are hidden.

Score for this quiz: **19** out of 20
Submitted Oct 6 at 1:08pm
This attempt took 26 minutes.

Question 1 — 2 / 2 pts

d. Answer the following questions about the ARM programming model:

Where is the program counter kept in the register bank?

R15

Incorrect

Question 2 — 2 / 2 pts

b. Answer the following questions about the ARM programming model:

What is the purpose of the T bit?

The T bit reflects the operating state: when the T bit is set, the processor is

Incorrect

Question 3

2 / 2 pts

c. Answer the following questions about the ARM programming model:

What is the purpose of the C bit?

C is set if the result of an unsigned operation overflows the 32 bit result reg

Question 4

2 / 2 pts

Answer the following questions about the ARM programming model:

a. How many general purpose registers are there?

13

Partial

Question 5

2 / 2 pts

b. Your Company has been asked to build an embedded system that controls a dishwashing machine. The customer is most concerned about longevity, reliability over temperature, and design cost. These are not expensive machines, so the unit cost of the embedded system is a major concern. Size, Weight, and Power are not a concern within reason.

Processing speed required is moderate, 30 MIPs should be sufficient. A major concern is the ease of bug fixes, these must be easy to do. This is all the information you have been given.

Choose 2 of the several standards organizations that your customer will need to respond to regarding this product:

- [ ] FCC
- [x] UL/CSA
- [x] IEC
- [ ] DOD
- [ ] Telcordia
- [ ] IEEE

Question 6

2 / 2 pts

c. Your Company has been asked to build an embedded system that controls a dishwashing machine. The customer is most concerned about longevity, reliability over temperature, and design cost. These are not expensive machines, so the unit cost of the embedded system is a major concern. Size, Weight, and Power are not a concern within reason. Processing speed required is moderate, 30 MIPs should be sufficient. A major concern is the ease of bug fixes, these must be easy to do. This is all the information you have been given.

Would the Freescale (NXP) KL25Z128M4 be a workable processor choice for this product?

- ( ) No

- (selected) Yes

Question 7

2 / 2 pts

2. Your Company has been asked to build an embedded system that controls a dishwashing machine. The customer is most concerned about longevity, reliability over temperature, and design cost. These are not expensive machines, so the unit cost of the embedded system is a major concern. Size, Weight, and Power are not a concern within reason. Processing speed required is moderate, 30 MIPs should be sufficient. A major concern is the ease of bug fixes, these must be easy to do. This is all the information you have been given.

a. Choose which implementation architecture is the most appropriate for this design.

- Discrete
- ASIC
- FPGA
- MPU
- (selected) MCU
- Embedded PC

Partial

Question 8

5 / 6 pts

Select all that are true about Simulink

- [x] Simulink is used to model systems as part of model-based design
- [x] Simulink is a language for technical computing based in matrix mathematics
- [x] Simulink can be used to simulate sampled-data systems
- [ ] Simulink does not allow previous designs to be reused
- [ ] Simulink is powerful but hard to use.

Quiz Score: **19** out of 20