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	10 minutes	19 out of 20

ⓘ Correct answers are hidden.

Score for this quiz: **19** out of 20
Submitted Sep 15 at 12:52pm

This attempt took 10 minutes.

Incorrect

Question 1

5 / 5 pts

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

Allows the product

Provides the opport

Answer 1:

Allows the product requirements to be represented directly.

Answer 2:

Provides the opportunity to evaluate design options and optimize the design at high level.

Partial

Question 2

4 / 5 pts

For each answer to the question: What is mbed? Check all that are True

- [x] An online compiler. T F
- [ ] An innovative algorithm generator for smart applicances. T F
- [x] An ecosystem of technologies that allow you to do rapid development. T F

A funky disco band from Bedlam, NY. T F

An easy way of creating embedded connected devices. T F

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

Question 4

5 / 5 pts

Indicate which are valid blocks in the Cortex-M0+ Block Diagram

- [x] Memory Protection Unit
- [ ] VME Bus
- [ ] MMU

- [x] Micro Trace Buffer
- [x] Debug Access Port

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	20 minutes	19 out of 20

ⓘ Correct answers are hidden.

Score for this quiz: **19** out of 20
Submitted Oct 6 at 1:02pm

This attempt took 20 minutes.

Incorrect

Question 1

2 / 2 pts

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

What is the purpose of the C bit?

ALU Operation Carried out - set to one if an unsigned overflow occurs.

Question 2

2 / 2 pts

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

Where is the program counter kept in the register bank?

R15

Question 3

2 / 2 pts

Answer the following questions about the ARM programming model:

a. How many general purpose registers are there?

13

Incorrect

Question 4

2 / 2 pts

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

What is the purpose of the T bit?

If 1 tells processor is in Thumb state else in ARM state

Question 5

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
- MCU

Embedded PC

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

Yes

Partial

Question 7

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

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