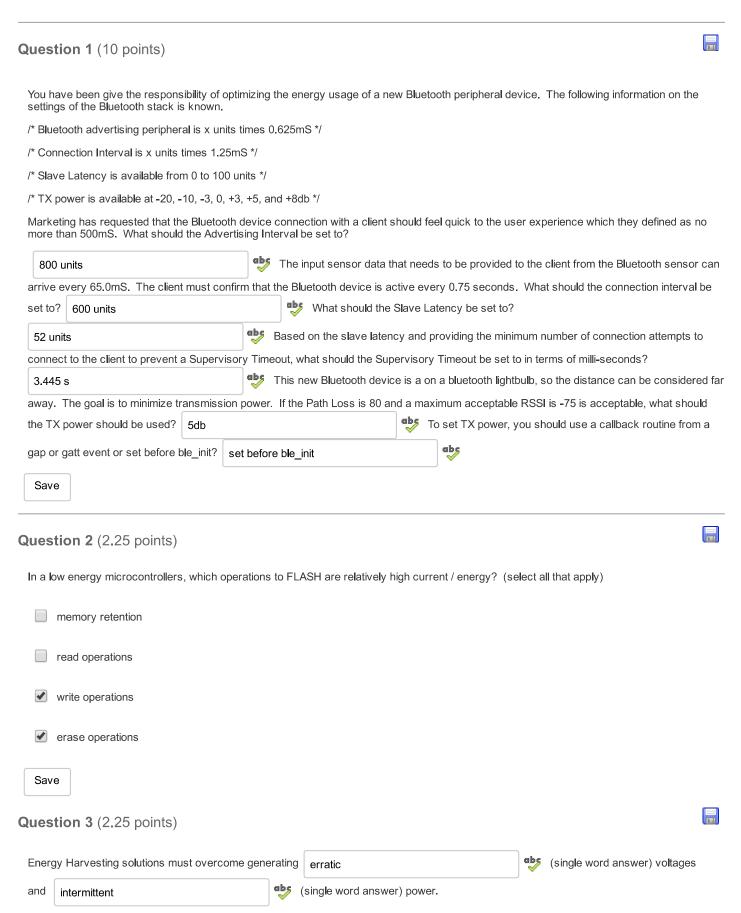
#### Quiz

Note: It is recommended that you save your response as you complete each question.



Save

### Question 4 (2.25 points)



Match the Bluetooth Smart use of the following terms to their definition.

2 ▼ the assignment of permission to do something

the intent to keep something secret.

- 1. Authentication
- a way to prove that the device is actually the device it 1 ▼ claims to be.
- 2. Authorization

3. Integrity

3 ▼

4 ▼

- the internal consistency and lack of data corruption.
- 4. Confidentiality

Save

#### Question 5 (2.25 points)



Select all the security best practices that would have prevented the Onity Door Lock security hack.

- User's must update the default password upon installing the equipment
- Firmware patches should be done automatically and remotely without the owner's intervention or new hardware
- User's must update the default user name to something other than an email address
- Debug ports should not be exposed or enabled once the product is released into production

Save

#### Question 6 (2.25 points)



In a public key encryption, the

private



(single word answer) key is used for decryption.

Save

## Question 7 (2.25 points)



In loops that are accessed frequently, small functions should be changed into in-line functions.

- True
- False

Save

#### Question 8 (2.25 points)



As a capacitor sensor is actuated, finger is in decreases		¬ .			he sensor is not ac	tuated.	
Save							
Questio	on 9 (2.25 points)						
Match th	e best choice of a non-volatile men	nory to the app <b>l</b> ica	tion				
2 ▼	Picture storage for digital camer	ra	1.	FRAM			
3 ▼	Silicon Labs' Blue GECKO micro	o controller + BLE	2.	NOR			
3 ▼	Program memory for a DSP pro	ocessor	3.	NAND			
2 ▼	Small non-volatile byte write-abl	le external memor	y <b>4</b> .	EEPROM			
Save							
Questio	on 10 (2.25 points)						
Nonrepu	diation is the inability to deny the fol	llowing. (select all	l that app <b>l</b> y)				
☐ Co	nfidentiality						
Pri	vacy						
	thenticity						
<b>✓</b> Into	egrity						
Save							
Questio	on 11 (2.25 points)						
NFC pro	vides a higher level of privacy com y)	pared to other RF	and wireless	networks and pro	tocols through wha	at of the following?	(select all
Me	esh network architecture						
<b>✓</b> Lim	nited range of operation (<0.1m)						
Sta	ar network architecture						
<b>✓</b> Re	quires intent of use to read the NF0	C memory					
Save							

# Question 12 (2.25 points) Match the property with the NAND Flash technology. 1 ▼ Relatively simple error correction algorithm 2 ▼ Most common FLASH 1. Single Level Cell 1 ▼ More expense per bit 2. Multi Level Cell 2 ▼ Lower endurance 1 ▼ Faster reads and writes Save Question 13 (2.25 points) To validate your design and the embedded firmware, you look at the Energy Profiler to obtain the instantaneous current at a portion of the trace. You know the following: LED0 = offLED1 = on Instantaneous current = 1.45mA HFCLK = HFRC0 @ 14MHz Which Energy state is the board in at this time? ЕМ3 EM1 EM2 EM0 Save 100 Question 14 (2.25 points) To validate your design and the embedded firmware, you look at the Energy Profiler to obtain the instantaneous current at a portion of the trace. You know the following:

Which Energy state is the board in at this time?

Instantaneous current = 850nA HFCLK = HFRC0 @ 14MHz

LED0 = offLED1 = off

- EM2
- O EM1

EM3

Save

## Question 15 (2.25 points)

My read DMA for my I2C sensor does not appear to be working. I have traced the failure to the below DMA set up routine.

- 1. void I2C0\_DMA\_Setup(void){
- 2. DMA\_CfgDescr\_TypeDef I2C0\_DMA\_cfg;
- 3. DMA\_CfgChannel\_TypeDef I2C0\_DMA\_channel;
- 4. I2C0 cb.cbFunc = I2C0 DMA Done;
- 5. I2C0 cb.userPtr = NULL;
- 6. I2C0 cb.primary = true;
- 7. I2C0\_DMA\_cfg.arbRate = I2C0\_DMA\_Arbitration;
- 8. I2C0\_DMA\_cfg.dstInc = dmaDataInc1;
- 9. I2C\_DMA\_cfg.hprot = 0;
- 10. I2C0\_DMA\_cfg.size = dmaDataSize1;
- 11. I2C0\_DMA\_cfg.srcInc = dmaDataIncNone;
- 12. DMA\_CfgDescr(I2C0\_DMA\_Channel, true, &I2C0\_DMA\_cfg);
- 13. I2C0\_DMA\_channel.cb = &ADC0\_cb;
- 14. I2C0\_DMA\_channel.enableInt = true;
- 15. I2C0\_DMA\_channel.highPri = true;
- 16. I2C0\_DMA\_channel.select = DMAREQ\_I2C0\_SINGLE;
- 17. DMA\_CfgChannel(I2C0\_DMA\_Channel, &I2C0\_DMA\_channel);
- 18. DMA->IFC = 1 << I2C0 DMA Channel;
- 19. DMA->IEN |= 1 << I2C0\_DMA\_Channel;

20.}

Which instruction, line item number, is incorrect?

Correct the DMA setup routine by providing the correct c-code instruction.

I2C0\_DMA\_channel.cb &= ADC0\_cb;

Save

## Question 16 (2.25 points)

000

Which Bluetooth Smart message requires a response?

✓ Indication		
✓ Read request		
✓ Write request		
Notification		
Write command		
Save		
Question 17 (2.25 points)		
The overriding disadvantage of FRAM is	cost	due to the
larger	memory cell compared to other nor	n-volatile memory technologies.
Save		
Question 18 (2.25 points)		
(Lize points)		
Select all the components required for an	Energy Harvesting system	
Flux Capacitor		
✓ Energy Storage Element		
Power Management Unit		
☐ Thermal Generator		
Save		
Question 19 (2.25 points)		
еММС	memories integrate the ECC function	on with the NAND memory so that the system receives
known good data out of the NAND and the	e controller does not have to perform the EC	C function.
Save		
Question 20 (2.25 points)		
To validate your design and the embedded You know the following:	d firmware, you look at the Energy Profiler to	obtain the instantaneous current at a portion of the trace.
LED0 = off		
LED1 = off		
HFCLK = HFRC0 @ 14MHz		
Instantaneous current = 1.4uA		

## Question 24 (2.25 points)

If a NAND memory that has a maximum number of 15,000 erase cycles per page and has a total of 20 pages configured as follows:

- 4 program pages
- 4 data pages

Save

Save

Quiz - ECEN 5023-001,001B,740:Special Topics - Learn | University of Colorado at Boulder 12 empty pages What is the maximum number of erase cycles could this NAND memory typically experience if there is no wear leveling? 60000 abg Save .... Question 25 (2.25 points) In a public key encryption, the (single word answer) key is used for encryption.. public Save (11) Question 26 (2.25 points) What is the C instruction to enable the COMP1 interrupt, COMP1, of the RTC through the IEN register of the Leopard Gecko? RTC->IEN |= RTC\_IEN\_COMP1; Save Question 27 (2.25 points) In Bluetooth Low Energy, a characteristic declaration begins a characteristic. Match the exposed information to its attribute value. Handle Type Value 0x0100 Characteristic Write, 0x0150, Appearance 0x0150 2 ▼ 1. Properties ▼ Appearance 2. Value Handle 1 Write 3. Characteristic UUID Save Question 28 (2.25 points) In the Course Project, to end an I2C read or write operation, which bit in the I2C IF register must be set before an UnBlockSleepMode(EM1) can abs be executed? Save m Question 29 (2.25 points) A trusted monotonic (single word answer) counter is a tamper-resistant counter embedded in a device whose value, once incremented, cannot be reverted back to a previous value.

#### https://learn.colorado.edu/d2l/lms/quizzing/user/attempt/quiz start frame.d2l?ou=194155&isprv=&drc=0&qi=103637&cfql=0&dnb=0

## Question 30 (2.25 points) Which Bluetooth Smart messages are not considered reliable? Indication Write command Write request Notification Read request Save Question 31 (2.25 points) In regards to NAND FLASH memories, match the term with its definition. To increase the endurance of the FLASH memory, writes 2 ▼ are written to a free page with the least number of write/erase cycles 1. Static Wear Leveling Writes to FLASH memory are written back to the same 3 ▼ page that the variable resides or read from. 2. Dynamic Wear Leveling Static program memory blocks are moved to free pages 3. No Wear Leveling that have high write/erase cycles to provide additional 1 free pages of memory that have low write/erase cycles available for the system to write to free pages of FLASH memory. Save

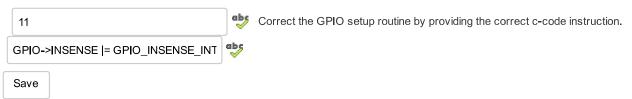
Question 32 (2.25 points)

- I

My application is not working correctly, and I have isolated it to the GPIO setup routine.

- 1. void GPIO\_Setup(void){
- 2. GPIO PinModeSet(LED0 port, LED0 pin, gpioModePushPull, 0);
- 3. GPIO\_PinModeSet(LED1\_port, LED1\_pin, gpioModePushPull, 0);
- 4. GPIO\_PinModeSet(LEUART0\_TX\_port, LEUART0\_TX\_pin, gpioModePushPull, 1);
- 5. GPIO\_PinModeSet(LEUART0\_RX\_port, LEUART0\_RX\_pin, gpioModePushPull, 1);
- 6. GPIO\_PinModeSet(Light\_Excite\_port, Light\_Excite\_pin, gpioModePushPull,1); /\* Disable ambient by default setting to 0 \*/
- 7. GPIO\_PinModeSet(Light\_Sensor\_port, Light\_Sensor\_pin, gpioModeDisabled, 0); /\* Input pin \*/
- 8. GPIO\_PinModeSet(CAPSENSE\_Port, CAPSENSE\_Pin, gpioModeDisabled,0);
- GPIO\_PinModeSet(GPIO\_Int\_Port, GPIO\_Int\_Pin, gpioModeInput, 0);
- 10. GPIO\_IntConfig(GPIO\_Int\_Port, GPIO\_Int\_Pin, GPIO\_Int\_Rising, GPIO\_Int\_Falling, true);
- 11. GPIO->INSENSE = GPIO\_INSENSE\_INT; // Enable sensing interrupts on GPIO pins
- 12. GPIO->IFC = 1 << GPIO\_Int\_Pin;
- 13. GPIO->IEN |= 1 << GPIO\_Int\_Pin;
- 14. NVIC\_ClearPendingIRQ(GPIO\_ODD\_IRQn);
- 15. NVIC EnableIRQ(GPIO ODD IRQn);
- 16.}

Which instruction, line item number, is incorrect?



#### Question 33 (2.25 points)

In Bluetooth Smart, a server can response to a client's request with the following. (Select all that apply)

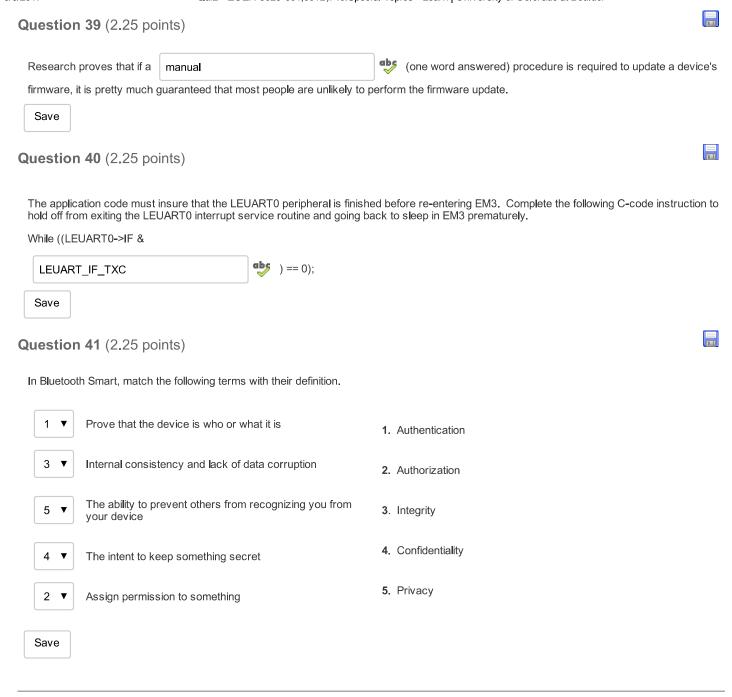
- Request additional information
- Response will be available in X minutes
- Response directly associated with the request
- ✓ An error message

Save

#### Question 34 (2.25 points)

Select all the security best practices that would have prevented the Foscam camera security hack.

Firmware patches should be done auto	omatically without the owner's intervention	
✓ User's must update the default passwo	ord upon installing the equipment	
✓ User's must update the default user na	ame to something other than an email address	
Debug ports should not be exposed or	enabled once the product is released into production	
Save		
Question 35 (2.25 points)		
With multiple sensors being used on the Leop	pard Gecko, there could be a requirement of more than one sensor needing to send data to the or properly shares the LEUART without corrupting the data of the first transfer, it is recommend	
Save		
Question 36 (2.25 points)		<u> </u>
Each PROGRAM/ERASE operation can degr meeting power, programming, or erase speci failure can begin to exhibit in failed data is cal	rade a FLASH memory cell, and over time, the accumulation of cycles can prevent the device f ifications or from reading the correct data pattern. The device's data sheet that specifies when lled	from this
erase endurance	. (Two word answer)	
Save		
Question 37 (2.25 points)		
Select all the possible security attacks which	are not invasive or active attacks	
✓ Replay		
Spoofing		
Substitution		
Probing		
Save		
Question 38 (2.25 points)		<u> </u>
In most system, the type of		
DRAM	will be determined by the micro processor, DSP, or FPGA memory controller, thus this	
memory should be included in the decision of	the micro processor, DSP, or FPGA.	
Save		



Go to Submit Quiz

Save All Responses