Week1 Assessment

The due date for submitting this assignment has passed. **Due on 2017-08-07, 23:59 IST.**

Submitted assignment

1) Which sensor cannot be used to detect human presence?
   - Hall sensor
   - PIR
   - RADAR
   - Thermocouple

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- **Hall sensor**

2) Which of the following sensor uses pyro-electric principle?
   - Thermocouple
   - Thermopile
   - LCT
   - PIR

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- **PIR**

3) Which all is true for a thermocouple?
   - Uses Plack's law of black body radiation
   - Stephen Boltzmann law of radiative heat transfer
   - Both (a) and (b)
   - None of the above

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- **Both (a) and (b)**

4) Where do all the complex data computations happen?
   - Things
   - Gateway
   - Edge Device

**Score: 0**
IoT Protocols

IoT LAN and WAN Connectivities

IoT Case Studies

Server

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Edge Device

5) When would you choose PIR over thermocouples?  
- When the subject is still  
- When the subject is in motion  
- When the subject is non-living  
- Depends on the application  

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
When the subject is in motion

6) How to increase the source voltage from 3.3V to 5V?  
- Use a rectifier  
- Use a boost converter  
- Use an additional capacitor  
- Increase the load resistor  

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Use a boost converter

7) In the Ball Bearing Energy Harvesting case, how do you choose the value of the output storage capacitor?  
- Depends on the SoC (microcontroller + BLE radio)  
- Depends on the size of the PCB  
- Depends on the energy to be accumulated  
- Depends on the passives on the board  

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Depends on the SoC (microcontroller + BLE radio)  
Depends on the energy to be accumulated  
Depends on the passives on the board

8) Pull-up resistors are used for which type of communication protocol?  
- SPI  
- I2C  
- UART  
- None of the above  

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
I2C

9) Vout = Sx(Tx-Tref): What is the coefficient Sx known as?  
- Sobel coefficient  
- Planck’s constant  
- Boltzmann coefficient  
- Seebeck coefficient  

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Seebeck coefficient
10. The set of rules followed to exchange data between two devices is called?  
- Connections  
- Wires  
- Protocols  
- None of the above  

Accepted Answers: Protocols  

No, the answer is incorrect.  
Score: 0

11. In the system design related to the Ball Bearing application, the SoC was unable to transmit BLE packets to the mobile phone, why?  
- Insufficient supply voltage  
- Improper ground connections  
- Lack of proper wireless connectivity  
- All of the above  

Accepted Answers: All of the above  

No, the answer is incorrect.  
Score: 0

12. Monitoring the ball bearing in real time helps us to  
- Predict the status of the machinery  
- Increase the use of magnets  
- Keep track of the magnets  
- Demonstrate the magnetic field effect  

Accepted Answers: Predict the status of the machinery  

No, the answer is incorrect.  
Score: 0

13. On which critical factor does the accuracy of detection depend on?  
- Ambient Temperature  
- Distance  
- Field of View  
- All of the above  

Accepted Answers: All of the above  

No, the answer is incorrect.  
Score: 0

14. What would be the optimum distance at which the sensor has to be placed to measure the core body temperature in a non-invasive way?  
- 1.0 cms  
- 75 cms  
- 0 cms  
- 1 mtr  

Accepted Answers:  

No, the answer is incorrect.  
Score: 0
15 A single sensor gives the ambient temperature as well as the subject temperature. How?

- The sensors are piled on one another on the front side
- The sensors are piled on one another on the rear side
- External sensors have to interfaced
- Sensors split the obtained temperature

No, the answer is incorrect.

Score: 0

Accepted Answers:
The sensors are piled on one another on the rear side