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Unit 2 - Introduction to IOTs - Improving Quality of Life

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? ***1 point***

- 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? ***1 point***

- Thermocouple
- Thermopile
- LCT
- PIR

No, the answer is incorrect.
Score: 0

Accepted Answers:
PIR

3) Which all is true for a thermocouple? ***1 point***

- 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? ***1 point***

- Things
- Gateway
- Edge Device

- Server

No, the answer is incorrect.
Score: 0

Accepted Answers:
Edge Device

5) When would you choose PIR over thermocouples? ***1 point***

- 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? ***1 point***

- 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? ***1 point***

- 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? ***1 point***

- 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? ***1 point***

- 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? ***1 point***

- Connections
- Wires
- Protocols
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Protocols

11) In the system design related to the Ball Bearing application, the SoC was unable to transmit BLE packets to the mobile phone, why? ***1 point***

- Insufficient supply voltage
- Improper ground connections
- Lack of proper wireless connectivity
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

12) Monitoring the ball bearing in real time helps us to ***1 point***

- Predict the status of the machinery
- Increase the use of magnets
- Keep track of the magnets
- Demonstrate the magnetic field effect

No, the answer is incorrect.
Score: 0

Accepted Answers:
Predict the status of the machinery

13) On which critical factor does the accuracy of detection depends on? ***1 point***

- Ambient Temperature
- Distance
- Field of View
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

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 point***

- 1.0 cms
- 75 cms
- 0 cms
- 1 mtr

No, the answer is incorrect.
Score: 0

Accepted Answers:

1.0 cms

15) A single sensor gives the ambient temperature as well as the subject temperature. How? ***1 point***

- 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

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