

## Course outline

How does an NPTEL online course work?

WEEK 1 Introduction to IoT

WEEK 2 Addressing the Power challenge

WEEK 3 Addressing the Power challenge continued and System Design for low power

Week 4 Sensors and actuators

- Introduction to Sensors and Actuators
- Sensors
- Actuators
- Case study on Sensing and Actuation
- Weekly Feedback Form

 Quiz: Week 4 Assessment 4

- Week 4 - Lecture notes
- Week 4 Assignment 4 Answers

WEEK 5 Power management algorithms

WEEK 6 IoT protocols – MQTT, COAP, and Websockets with associated applications

WEEK 7 Low power wireless technologies – BLE, IEEE 802.15.4e, Wi-Fi

WEEK 8 Low Power Wide area technologies – NBIoT, LTEM1, LoRa and BLE

Video Download

# Week 4 Assessment 4

The due date for submitting this assignment has passed.

**Due on 2021-09-01, 23:59 IST.**

As per our records you have not submitted this assignment.

1) The advantages of Sigma delta ADC over SAR ADC is

0 points

- Sigma deltas has higher speed than SARs
- Sigma deltas has high resolution than SARs
- Sigma deltas are less power efficient than SARs
- Sigma deltas has higher power efficiency than SARs

No, the answer is incorrect.  
Score: 0

Accepted Answers:

Sigma deltas has high resolution than SARs

Sigma deltas has higher power efficiency than SARs

2) A temperature sensor TMP37 is interfaced with an 8-bit Arduino UNO ADC. What will be the resolution of the sensor (in \_\_\_\_deg.C) if the Vref is 2.5V.

No, the answer is incorrect.  
Score: 0

Accepted Answers:

(Type: Range) 0.4,0.6

2 points

3) A pressure sensor MPX5100G is connected to a 12-bit ADC. A Vref of 5V is applied to the ADC. For input pressure of 50.35KPa, What is the corresponding ADC codeword output.

No, the answer is incorrect.  
Score: 0

Accepted Answers:

(Type: Range) 1855,1857

2 points

4) ADS1115 chip has a bit configuration of 0b1100000111100101 (MSB to LSB) if only two channels are being used in single ended mode. Then what is the sampling frequency (in sps) obtained from each channel?

No, the answer is incorrect.  
Score: 0

Accepted Answers:

(Type: Numeric) 430

2 points

 5) The bit configuration of an ADS1115 is 0b1100010111100101 (MSB to LSB). What is the Full Scale Range (FSR) of the ADC ( $\pm$ \_\_\_\_V)?

No, the answer is incorrect.  
Score: 0

Accepted Answers:

(Type: Numeric) 2.048

2 points

6) What is the binary bit pattern for configuring 128 sps in ADS1115

1 point

- 010
- 011
- 100
- 110
- 111

No, the answer is incorrect.  
Score: 0

Accepted Answers:

100