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NPTEL

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Courses » Design for internet of things

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# Unit 5 - Power Conditioning with Energy Harvesters

## Course outline

How to access the portal

Introduction to IOTs - Improving Quality of Life

System Design and Overview of Power Supply Section

Designing with LDO's, Switching Regulators and Case Studies

Power Conditioning with Energy Harvesters

Power Conditioning with Energy Harvesters - I

Power Conditioning with Energy Harvesters - II

Power Conditioning with Energy Harvesters - III

Quiz : Week4 Assessment

Solutions for Assignment 4

Battery less power supply and battery life calculation for embedded devices

IoT Protocols

## Week4 Assessment

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

### Submitted assignment

1) Simulation study is very useful for 1 point

- Designing an energy harvesting system.
- Deciding the storage of the voltage output.
- To know the behaviour of the system.
- All of the above.

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*All of the above.*

2) A smart phone includes many sensors, like the following 1 point

- Accelerometers
- Gyroscopes
- Magnetometers
- Barometers
- All of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*All of the above*

3) Barometer is used to measure 1 point

- Distance
- Height
- Pressure
- Acceleration

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Pressure*

4) Pulse sensor works using 1 point

- Invasive methods
- IR Reflective methods

IoT LAN and  
WAN  
Connectivities

IoT Case Studies

- None of the above
- Both(a) and (b)

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*IR Reflective methods*

5) Source impedance of the DC-DC converter should match with source impedance of the TEG **1 point**

- True
- False
- Not necessarily
- None of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*True*

6) In the pulse sensor demonstration, we stressed on voltage stability.This is because **1 point**

- Sensor is sensitive to voltage fluctuation
- Sensor needs analog voltage
- Reference voltage should not vary
- All of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Sensor is sensitive to voltage fluctuation*

7) In a TEG, the source resistance should match **1 point**

- Input resistance of boost converter
- Output resistance of the TEG
- Output of the boost converter
- None of the above.

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Input resistance of boost converter*

8) MPPT point is **1 point**

- Maximum voltage x maximum current
- Maximum voltage x minimum current
- Minimum voltage x minimum current
- None of the above.

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*None of the above.*

9) The difference between MPPT and MPPC is **1 point**

- No difference
- MPPC tries to maintain 50% of input voltage
- MPPT tries to maintain 50% of input current
- None of the above

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*None of the above*

10)UVLO feature is required when

**1 point**

- Output load current increases
- Output load current decreases
- Low input voltage is available for extended period.
- Input voltage is absent for an extended period.

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Input voltage is absent for an extended period.*

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