Unit 6 - Battery less power supply and battery life calculation for embedded devices

Week5 Assessment

The due date for submitting this assignment has passed. Due on 2017-08-30, 23:59 IST.

Submitted assignment

1) For a battery what is the meaning of actual capacity and nominal capacity?
   - Nominal capacity is the discharge from the battery. Actual capacity is as specified in datasheet.
   - Actual capacity is the discharge from the battery. Nominal capacity is as specified in datasheet.
   - Both are equal and as specified in datasheet
   - Both are equal and as measured when battery is used

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   Actual capacity is the discharge from the battery. Nominal capacity is as specified in datasheet.

2) LORA, SIGFOX, NB-IOT and LTE-M are types of

   - Wireless technologies
   - Wired technologies
   - Low power wide area networks
   - High power wide area networks

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   Low power wide area networks

3) The minimum lifespan of a battery driven IoT device should be:

   - ~5 weeks
   - ~10 years
   - Few days
   - Few hours

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   ~10 years

4) Gateway devices will be generally powered with

   - Harvested energy
   - Battery

   Accepted Answers:
   1 point
   1 point
   1 point
   1 point
No, the answer is incorrect.
Score: 0

Accepted Answers:
Large size batteries or even grid power

5) When the battery powered device is in sleep mode

No, the answer is incorrect.
Score: 0

Accepted Answers:
The capacity of the battery increases

6) To avoid a current consumption of spiky nature directly from the battery, it is advisable to:

No, the answer is incorrect.
Score: 0

Accepted Answers:
Add a capacitor at the output of the battery

7) Low duty cycle in a battery powered device means

No, the answer is incorrect.
Score: 0

Accepted Answers:
Significant self discharge will occur
The device is predominantly in sleep mode

8) Dickson charge pump is a

No, the answer is incorrect.
Score: 0

Accepted Answers:
Voltage doubler

9) In the vibration harvesting scenario, the power output is high when

No, the answer is incorrect.
Score: 0

Accepted Answers:
The ‘g’ value is 0.

Large size batteries or even grid power
10) To efficiently harvest from vibration, which of the following is/are a critical factor?

- Clamping the harvester
- Tip mass
- Placement of the harvester
- All of the above.

No, the answer is incorrect.
Score: 0
Accepted Answers: All of the above.

11) What is the importance of tip mass?

- To tune the beam to resonance
- To diverge the beam away from resonance
- Decrease the ‘g’ value
- Decrease the sensitivity.

No, the answer is incorrect.
Score: 0
Accepted Answers: To tune the beam to resonance

12) What is the drawback of using a tip mass on a vibration harvester?

- Reduces the sensitivity
- Reduces the ability of extract over a range of frequencies.
- Increases the weight of the vibrating device
- None of the above.

No, the answer is incorrect.
Score: 0
Accepted Answers: Reduces the ability of extract over a range of frequencies.

13) Using the vibration harvester, with the tip mass, the voltage generated on the oscilloscope was:

- 25V dc
- 10V dc
- 0.1V dc
- 40V dc

No, the answer is incorrect.
Score: 0
Accepted Answers: 10V dc