X

Unit 3 - System Design and Overview of Power Supply Section

Week2 Assessment

The due date for submitting this assignment has passed. **Due on 2017-08-11, 23:59 IST.**

Submitted assignment

1) When rectifying from an energy harvester, which diode parameter should be as low as possible. ***1 point***

- Reverse current
- Forward voltage drop
- Forward current
- Reverse voltage drop

No, the answer is incorrect.
Score: 0

Accepted Answers:
Forward voltage drop

2) What plays a major role in stabilizing the output of LDO? ***1 point***

- Cin (input capacitor)
- 'En' (Enable) pin
- Feedback voltage
- Cout (output capacitor)

No, the answer is incorrect.
Score: 0

Accepted Answers:
Cout (output capacitor)

3) What is the formula for power dissipation across an LDO? ***1 point***

- Pout=Vout*Iout
- Pout=Vin*Iout
- Pout=(Vin-Vout)*[(Iout)+Iq]
- Pout=(Vin-Vout)*Iout

No, the answer is incorrect.
Score: 0

Accepted Answers:
Pout=(Vin-Vout)[(Iout)+Iq]*

4) What happens when we increase the switching frequency of a switching regulator? ***1 point***

- Switching losses
- High power dissipation

- Both (a) and (b)
- No change in the regulator

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both (a) and (b)

5) In the ball bearing system, the presence of the power good signal from the boost converter switches Vsupply to: ***1 point***

- Vldo
- DC voltage from the rectifier
- Vout
- Zero

No, the answer is incorrect.
Score: 0

Accepted Answers:
Vout

6) In the ball bearing energy harvesting system design, When does the nRF51822 (SoC) decide to perform high power consuming operations (such as transmitting a BLE packet) ? ***1 point***

- When Pgood signal is low from the boost converter
- When Pgood signal is high from the boost converter
- When Vldo is sufficiently charged
- When Vout is not enough to charge the super cap

No, the answer is incorrect.
Score: 0

Accepted Answers:
When Pgood signal is high from the boost converter

7) What are the components in the ball bearing application are required to complete it as an IoT sytem. ***1 point***

- Data Analytics
- Data Transmission
- Edge Computation
- Status of the machinery
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

8) What are the causes of noise in a power supply? ***1 point***

- High power switching within SoC
- Digital Signal Processors
- Defect in the source that generates the power
- Both (a) and (b)

No, the answer is incorrect.
Score: 0

Accepted Answers:
High power switching within SoC
Digital Signal Processors
Defect in the source that generates the power

9) Why is it not recommended to drop a high voltage across a voltage regulator? ***1 point***

- High power dissipation across the regulator

- Low power dissipation across the regulator
- Need to include additional circuitry along with the regulator
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
High power dissipation across the regulator

10) When are switching regulators preferred over linear regulators? ***1 point***

- When the output voltage has to be lower by large difference with the input and thus avoid excess heat dissipation
- When the voltage has to be increased by a major value
- They are chosen on a random basis
- Both (a) and (b)

No, the answer is incorrect.
Score: 0

Accepted Answers:
When the output voltage has to be lower by large difference with the input and thus avoid excess heat dissipation

11) What are the features of a linear regulator? ***1 point***

- Control signal is continuous in time
- Current flow is continuous
- Current flow is non-continuous
- Both (a) and (b)
- Both (a) and (c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both (a) and (b)

12) What is the relation between input and output voltage of an LDO? ***1 point***

- Vout=Vin
- Vout<Vin
- Vout>Vin
- Any of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Vout<Vin

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