Assignment 10

Due on 2021-10-21, 23:59 BST

1. The duty cycle for a certain transistor is such that it achieves maximum efficiency. If the duty cycle is increased, how does the efficiency change?

2. A certain LED lens produces a certain amount of light. If the lens is replaced with another lens that is twice as large, how does the light output change?

3. In which quadrant of the transformer voltage graph should a voltage divider be used for light harvesting applications?

4. What is the maximum power that can be delivered to a load using a given LED?

5. A photovoltaic cell produces a certain amount of power. If the cell is replaced with another cell that is twice as large, how does the power output change?

6. If a photovoltaic cell has a certain efficiency, how does the efficiency change if the cell is doubled in size?

7. Under what conditions can an LED be operated in a given quadrant of the light output graph?

8. The efficiency of an LED varies as shown below. What is the maximum efficiency?

9. If an LED is operated in a certain quadrant of the light output graph, how does the efficiency change if the LED is doubled in size?

10. A photovoltaic cell produces a certain amount of power. If the cell is replaced with another cell that is half the size, how does the power output change?

11. What is the maximum power that can be delivered to a load using a given LED?

12. A photovoltaic cell produces a certain amount of power. If the cell is replaced with another cell that is half the size, how does the power output change?