

Criteria	Full credit	Partial credit	No credit
Part 3 waveform data: waveforms with names, scales, and salient features. Diode voltage and current, transistor current, inductor current, capacitor C1 voltage and current.	10 points	5 points	0 points
Part 3 inductor current ripple: measured and compare with calculated value.	5 points	2 points	0 points
Part 3 capacitor ESR: measured waveforms that permit determination of ESR	5 points	2 points	0 points
Part 3 capacitor ESR: estimated value of ESR, power loss PC, and comparison with datasheet rated rms current.	5 points	2 points	0 points
Part 4 load test data at 15 W output. 7 pts for data, 3 pts for discussion.	10 points	5 points	0 points
Part 4 load test data at 1 W output. 7 pts for data, 3 pts for discussion.	10 points	5 points	0 points
Part 5: open loop measurements made outside with PV panel and battery: measured PV voltage and current, and battery voltage and current, vs. D	15 points	7 points	0 points
Part 6: plots of PV and battery I and V vs. D, with plots clearly labeled	10 points	5 points	0 points
Part 6: Explain theoretically the salient features of the plots	10 points	5 points	0 points
Part 6: simulations of PV and battery voltages and currents vs. D, with all plots clearly labeled	10 points	5 points	0 points
Part 6: compare measured and simulated plots. What is the optimum duty cycle and max power? Compare (theoretically) direct energy transfer with MPPT.	10 points	5 points	0 points
Overall Score	Level 3 22 or more	Level 2 21 or more	Level 1 0 or more

Close