Kit No. Date: / /

USE TEMPLATE 01234 56789 MISFILL –1 PT SORT No PARTNER

LABORATORY 10

Please print this sheet prior to coming to laboratory. Complete the pre-laboratory tasks in your lab notebook. Complete the lab tasks in **both** your lab notebook and this submission sheet.

1 Pre-laboratory Verification

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2 Laboratory Verification

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3 Deliverables

1. Attach a printout of the **`bldc_controller.vhd`** VHDL code.
2. Attach a printout of the block diagram.
3. Assuming that the motor spins at 7,200 RPM when the period of one full rotation is 231.17 μs, calculate the approximate speed of the motor if the period is 12 ms (six states of 2 ms each). Show your calculations or dimensional analysis.

4. How does the pitch of the motor change as you connect more signal leads? Explain why.

5. Can the motor be started from a stopped state with all three signal leads connected? Why or why not? Provide a detailed explanation.