



2004 State Competition

Contestant # _____

FFA Agricultural Mechanics Contest Contestant Name _____

University of Missouri

Chapter _____

50 points

Electrical Motors

1. Match the wire that corresponds with the terminal to complete the circuit on the single-phase motor on one of the three motors labeled #1 (*2 points each*)

A. _____

B. _____

C. _____

2. Match the wire that corresponds with the terminal to complete the low voltage circuit on the three-phase motor on one of the three motors labeled #2 (*2 points each*)

A. _____

B. _____

C. _____

3. Motor Identification (*3 points each*) (*Use motors tagged #3*)

A. Which motor tagged is the permanent split capacitor motor?

B. Which motor tagged is the split- phase motor?

4. Using the voltage meter, check the following on the motor labeled #5: (*2 points each*)

Running Amperage _____amps

Running Voltage _____volts

5. Calculate the power factor for the motor labeled #5 (2 points)

Power Factor = _____

6. Using Figure 17-18, find the correct Thermal Unit Number for the motor labeled #5 (2 points)

Put the letter next to the part that corresponds to it on the table. (2 points each)

7. _____ Capacitor

8. _____ Running Winding

9. _____ Squirrel cage rotor

10. _____ Centrifugal switch

11. _____ End bell

12. _____ Stator frame

13. _____ Starting Winding

14. _____ Retaining ring

15. Given the nameplate information off the motor tagged #6, and that it will run 8 hours a day for thirty days at rated load/amps. The voltage at the power source is 115V. Calculate how much it will cost to run this motor when one kilowatt-hour costs \$0.09. The power factor for this motor is 82%. (5 points)

Scorecard for Electrical Motors Competition

Criteria	Points <u>Possible</u>	Points <u>Earned</u>
1. Electrical Wiring	12 points	_____
2. Motor Identification	6 points	_____
3. Volt Meter	8 points	_____
4. Part identification	16 points	_____
5. Motor Problem	5 points	_____
6. Safety	3 points	_____
Total	50 points	<input type="text"/>