Section IV: Electrical

1. What is the equation for Ohm's law?

A. $V = IR$ B. $V = I/R$ C. $R = VI$ D. $I = VR$

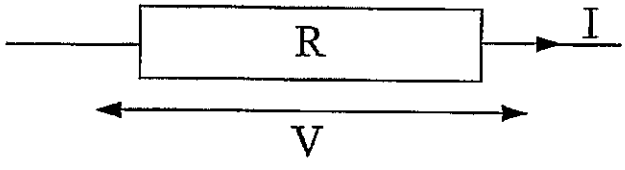
2. In direct current $I = 3A$ $R = 4\Omega$ Calculate V

A. 1.33 V B. 6 V C. 12 V D. 24 V

3. What becomes V if we use 2 resistors of 4Ω in parallel?

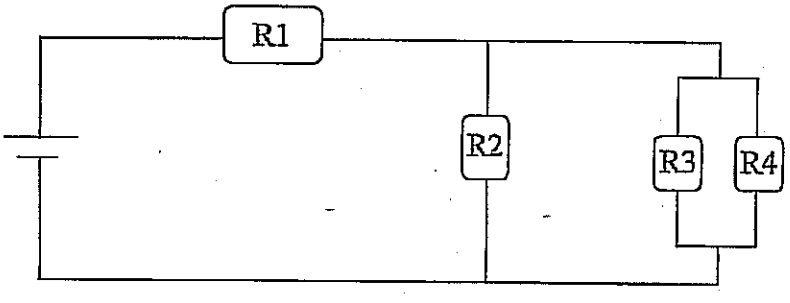
A. 2.66 V B. 6 V C. 12 V D. 24 V

4. If the resistor below is 100 ohms and the voltage drop is 220 volts, what is the current I?



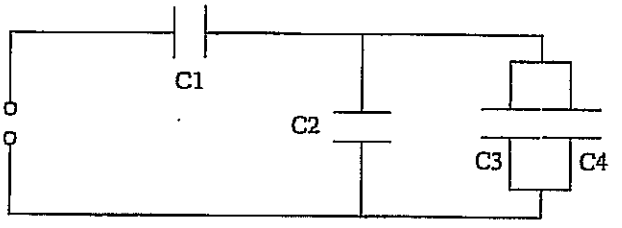
A. .22 A B. 22 A C. 2.2 A D. 2.0 A

5. If R1=2k ohms, R2=1k ohms, R3=2k ohms and R4=2k ohms, what is the equivalent resistance of the circuit?



A. 2250 ohms B. 1500 ohms C. 2500 ohms D. 2000 ohms

6. If C1=6F, C2=1F, C3=1F and C4=1F, what is the equivalent capacitance of the circuit shown below?

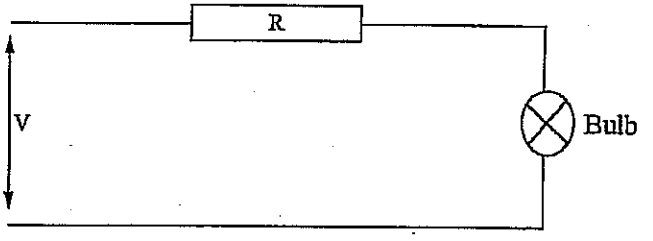


A. 2F B. 1.75 F C. 2.25 F D. 2.125 F

7. To reverse the direction of rotation in a 3hp, AC motor we must:

A. Change round all three wires cyclically.
B. Change round any two wires
C. Cannot change direction of rotation.
D. Change switch position, ie "on" de-engergized and "off" energized to get the reversed direction.

8. For the circuit shown below, if V=380VAC and the bulb is rated at 170VAC, 5W, what is the resistance R that should be connected in series to the bulb?



A. 6500 ohms B. 7000 ohms C. 7145 ohms D. 5780 ohms

9. If we increase the voltage across a DC motor, then the motor speed will?

A. decrease B. increase C. stay same D. stop

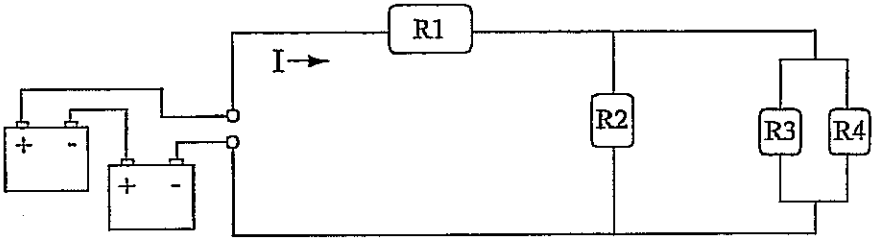
10. What will be the output voltage of two 12V batteries connected in series?

A. 12 V B. 6 V C. 24 V D. no voltage

11. What will be the output voltage of two 12V batteries connected in parallel?

A. 12 V B. 6 V C. 24 V D. no voltage

12. In the circuit shown below what is the current if the batteries are 12V each, R1=20 ohms, R2=10 ohms, R3=20 ohms, and R4=20 ohms?



A. 1000 mA B. 660 mA C. 960 mA D. 1200 mA