AC Values #2

1. An alternating emf has an instantaneous maximum value of 115 V. What is its:

A. effective value?

B. Average value?

2. At 30 degrees of its cycle, an alternating emf has a value of 45 V . What is the RMS value of this voltage?

3. A sine wave current has an effective value of 110 A. What is the instantaneous value of current at 57 degrees of its cycle?

4. A 20 kW resistance furnace is supplied with 55 V AC. What is the peak value of current flowing to the furnace?

5. The RMS value of an alternating current is 18 A. What is its peak value?

6. An insulated conductor is to be used in a 120 V AC circuit. What is the peak value of voltage thats its dielectric must be able to withstand?

7. A resistive heating load draws 10 A when connected to 100 V AC supply. What is the average power is watts?

8. A 10 ohm resistor is connected to 100 V filtered DC. To develop power at this same average rate, what value of AC voltage is required?

9. At 30 degree of its cycle, a sine wave current has an instantaneous value of 10 A. what is the RMS value of this current?

10. A 20 ohm resistor conducts an instantaneous maximum current of 10 A. What is the average power developed?

AC Values #2

1. An alternating emf has an instantaneous maximum value of 115 V. What is its:

A. effective value? **81.3 V**

B. Average value? **73.26 V (1 alternation), 0 V (full wave)**

2. At 30 degrees of its cycle, an alternating emf has a value of 45 V . What is the RMS value of this voltage? **63.63 V**

3. A sine wave current has an effective value of 110 A. What is the instantaneous value of current at 57 degrees of its cycle? **131 A**

4. A 20 kW resistance furnace is supplied with 55 V AC. What is the peak value of current flowing to the furnace? **514 A**

5. The RMS value of an alternating current is 18 A. What is its peak value? 25.5 A

6. An insulated conductor is to be used in a 120 V AC circuit. What is the peak value of voltage thats its dielectric must be able to withstand? **170 V**

7. A resistive heating load draws 10 A when connected to 100 V AC supply. What is the average power is watts? **1000 W**

8. A 10 ohm resistor is connected to 100 V filtered DC. To develop power at this same average rate, what value of AC voltage is required? **100 V**

9. At 30 degree of its cycle, a sine wave current has an instantaneous value of 10 A. what is the RMS value of this current? **14.14 A**

10. A 20 ohm resistor conducts an instantaneous maximum current of 10 A. What is the average power developed? **1000 W**