https://selldocx.com/products/alternating-current-fundamentals-8e-test-bank

Chapter 2 — Alternating-Current Circuits Containing Resistance

TRUE/FALSE

1. The product of effective volts and effective amperes is less than the power in watts in any ac circuit having a noninductive resistance load where the current and the voltage are in phase.

   ANS: F PTS: 1 REF: 32

2. The dc voltmeter has a d'Arsonval movement, which operates on the same principle as a dc motor.

   ANS: T PTS: 1 REF: 35

3. Full-wave rectifiers eliminate one half of the waveform and retain the other.

   ANS: F PTS: 1 REF: 35

4. Some manufacturers of dc instruments modify the circuit connections and the scale calibrations to measure ac voltages and currents.

   ANS: T PTS: 1 REF: 36

5. The voltage ratings of solid state devices are given as PIV (peak inverse voltage) or PRV (peak reverse voltage).

   ANS: T PTS: 1 REF: 37

COMPLETION

1. When the current and the voltage waveforms of a circuit are zero at the same time and reach their maximum values at the same time and in the same direction, these waves are said to be in _____.

   ANS: phase

   PTS: 1 REF: 24

2. _____'s law states that the current in a resistor is directly proportional to the voltage and inversely proportional to the magnitude of the resistance of the circuit.

   ANS: Ohm

   PTS: 1 REF: 24

3. The RMS value of current is the current indicated by the typical _____.

   ANS: ac ammeter

   PTS: 1 REF: 28

4. A device called a(n) _____ is used to measure the area of the alternation between the wave and the zero reference line.

ANS: planimeter

PTS: 1 REF: 34

5. _____ instruments have uniform scale graduations and markings for the entire scale range.

ANS: Direct-current

PTS: 1 REF: 36

SHORT ANSWER

1. Discuss the effective value of alternating current.

ANS:
The effective value of alternating current is based on its heating effect and not on the average value of a sine-wave pattern. An alternating current with an effective value of one ampere is that current that will produce heat in a given resistance at the same rate as one ampere of direct current.

PTS: 1 REF: 25

2. What is the root-mean-square current?

ANS:
Root-mean-square current is the abbreviated form of "the square root of the mean of the square of the instantaneous currents."

PTS: 1 REF: 27-28

3. Give an explanation of the term impedance.

ANS:
The term impedance is generally used to describe the total current limiting effect in alternating current circuits. Impedance is a combination of all current limiting properties such as resistance, inductance, and capacitance.

PTS: 1 REF: 29-30

4. Why are silicon rectifiers used in meters?

ANS:
In general, silicon rectifiers are used in meters. The rectifiers permit electron flow in one direction only. The full-wave dc output of the rectifier is impressed directly across the terminals of the dc voltmeter.

PTS: 1 REF: 36

5. Why is it necessary to determine the peak value if a solid state component is to be connected to an ac circuit?

ANS:

If a solid state component is to be connected into an ac circuit, it is generally necessary to determine the peak value to make certain the component will not be damaged.

PTS: 1 REF: 37