Alternating Current Key Terms

Here are fill-in-the-blank questions based on the key terms and definitions related to Alternating Current:

1. **Alternating Current (AC)** is a current that _____ its direction periodically.
2. One complete set of positive and negative values of AC is called a _____.
3. The number of cycles per second is called the _____, and it is measured in _____.
4. The time taken to complete one cycle is called the _____, and it is denoted as _____.
5. The _____ of an AC signal is the maximum value of current or voltage.
6. The _____ value of AC is given by $I_{\mathrm{rms}} = \frac{I_0}{\sqrt{2}}$.
7. The maximum value of AC current or voltage in a cycle is called the _____.
8. The _____ value refers to the value of AC at any specific instant of time.
9. The difference in phase between two alternating quantities is called _____.
10. The angular velocity of the alternating current waveform is called _____, and is denoted as _____.
11. The opposition to AC by a capacitor is called _____, and is calculated using $X_c = \frac{1}{\omega C}$.
12. The opposition to AC by an inductor is called _____, and is calculated using $X_L = \omega L$.
13. The total opposition to AC in a circuit containing resistors, inductors, and capacitors is called _____.
14. The condition when the inductive reactance equals the capacitive reactance is called _____.
15. The _____ of a circuit is the cosine of the phase angle, given by $pf = \cos\theta$.
16. A device that converts mechanical energy into electrical energy using alternating current is called an _____.
17. A _____ transformer increases the voltage from the primary to the secondary coil.
18. A _____ transformer decreases the voltage from the primary to the secondary coil.
19. The frequency at which resonance occurs in an LCR circuit is called _____.
20. Power dissipation in an AC circuit is calculated using the formula _____.
21. The time-averaged value of power in an AC circuit is called _____.
22. A circuit consisting of an inductor, capacitor, and resistor is called an _____ circuit.
23. In a _____ LCR circuit, the components are connected in series, affecting the total impedance.
24. In a _____ LCR circuit, the components are connected in parallel, affecting the current distribution.
25. An _____ current is one that fluctuates back and forth within a circuit.
26. A device that generates alternating current by rotating a magnetic field is called an _____.
27. A _____ coil is used to block higher-frequency AC in circuits.
28. The sharpness of resonance in a circuit is measured by the _____ factor.
29. The _____ frequency components in a non-sinusoidal AC waveform are called harmonics.
30. The _____ factor is a measure of the sharpness of resonance in a circuit and is denoted by Q.

These fill-in-the-blank questions test understanding of the core concepts of alternating current and help reinforce key definitions.