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Circuit Theorems In Ac Analysis MCQ Test

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Below is the **Circuit Theorems In Ac Analysis MCQ** test that checks your basic knowledge of Circuit Theorems In Ac Analysis. This **Circuit Theorems In Ac Analysis MCQ Test** contains 20 Multiple Choice Questions. You have to select the right answer to the question. Finally, you can also take the Online Quiz from the Take **Circuit Theorems In Ac Analysis Quiz** Button.

Q1. Which of the following are the two basic components of a Thevenin equivalent ac circuit?

- **A.** the equivalent voltage source and the equivalent series resistance
- **B.** the equivalent voltage source and the equivalent parallel resistance
- **C. the equivalent voltage source and the equivalent series impedance**
- **D.** the equivalent voltage source and the equivalent parallel resistance

Q2. What is the Norton equivalent current?

- **A. The short circuit current**
- **B.** The current through the load
- **C.** The open-current from the source
- **D.** None of the above

Q3. The superposition theorem is useful for circuit analysis only in ac circuits.

- **A.** True
- **B. False**

Q4. The superposition theorem is useful for the analysis of single-source circuits.

- **A.** True
- **B. False**

Q5. The Norton equivalent current is ___.

- **A.** The current through the load
- **B.** The open-current from the source
- **C. The short circuit current**
- **D.** None of the above

Q6. The Thevenin equivalent voltage is:

- **A.** Equal to the source voltage
- **B.** The same as the load voltage
- **C. The open circuit voltage**
- **D.** None of the above

Q7. A Thevenin ac equivalent circuit always consists of an equivalent ac voltage source and an equivalent capacitance.

- **A. True**
- **B.** False

Q8. In order to get maximum power transfer from a capacitive source, the load must have a/an ____.

- **A.** capacitive reactance equal to circuit resistance
- **B. impedance that is the complex conjugate of the source impedance**
- **C.** capacitive as it is inductive
- **D.** None of the above

Q9. Like Thevenin's theorem, Norton's theorem provides a method of reducing a more complex circuit to a simpler, more manageable form for analysis.

- **A. True**
- **B.** False

Q10. Norton's theorem gives:

- **A.** an equivalent voltage source in series with an equivalent impedance
- **B. an equivalent current source in parallel with an equivalent impedance**
- **C.** an equivalent current source in series with an equivalent impedance
- **D.** an equivalent voltage source in parallel with an equivalent impedance

Q11. ___ and ____ theorems provide methods for reducing a circuit to a simple equivalent form for easier analysis.

- **A. Thevenin's, Norton's**
- **B.** Newton's and Norton's theorems
- **C.** Thevenin's and Ohm's theorems
- **D.** None of the above

Q12. An equivalent circuit is one that produces the same voltage and current to a given load as the original circuit that it replaces.

- **A. True**
- **B.** False

Q13. Is AC Analysis is used to calculate the small-signal response of a circuit?

- **A. Yes**
- **B.** No

Q14. In applying the superposition theorem, ___.

- **A. the sources are considered one at a time with all others replaced by their internal impedance**
- **B.** all sources are considered simultaneously
- **C.** the sources are considered one at a time with all others replaced by their internal resistance
- **D.** all sources are considered independently

Q15. Which one of the following is not the step to analyze an AC circuit?

- **A.** Transform the circuit to the phasor or frequency domain.

- **B.** Solve the problem using method analysis or theorem circuit techniques.
- **C.** Transform the resulting phasor to the time domain.
- **D. None of the above**

Q16. In an ac circuit, power to the load peaks at the frequency at which the load impedance is the complex conjugate of the output impedance.

- **A. True**
- **B.** False

Q17. Is Thevenin's theorem, as applied to ac circuits, provides a method for reducing any circuit to an equivalent form that consi.sts of an equivalent ac voltage soarce in series with an equivalerut impedance?

- **A. Yes**
- **B.** No

Q18. Thevenin's equivalent voltage is defined as the _____ between two specified terminals in a circuit.

- **A. open circuit voltage**
- **B.** closed circuit voltage
- **C.** open circuit current
- **D.** None of the above

Q19. What do you mean by Norton's equivalent current?

- **A.** the open-circuit current between two specified terminals in a given circuit.
- **B. the short-circuit current between two specified terminals in a given circuit**
- **C.** total current between two specified terminals in a given circuit.
- **D.** None of the above

Q20. The complex conjugate of 50 Ω +j100 Ωis

- **A.** 50fΩ-j50 Ω
- **B.** 100Ω+j50 Ω
- **C.** 100 Ω -j50
- **D. 50 Ω -j100 Ω**