

ELECTRICITY EXAM QUESTIONS

1. **Two terminal circuit elements**
ideal, practical sources, resistors, passive and active circuit elements
 2. **Network analysis (DC)**
Kirchhoff's laws, nodal analysis, mesh analysis
 3. **Circuit theorems (DC)**
superposition principle, compensation theorem, theorem of reciprocity, Thevenin theorem, Norton theorem
 4. **AC circuits**
impedance, phasors, RMS value, power
 5. **Two port networks**
characteristics, parameters, relation between parameters, equivalent circuits
 6. **Resonances**
series and parallel resonances, bandwidth, quality factor
 7. **Frequency response**
Bode plots, frequency dependence of simple networks (passive filters)
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[1] Charles K. Alexander, Matthew N. O. Sadiku, *Fundamentals of Electric Circuits*