EE 42/100: Running Checklist of Electronics Terms
Dick White 23 March 2006

Terms are listed roughly in order of their introduction. Most definitions can be found in your text. Terms not for testing in Midterm 2 are in braces [like this].

TERM
Charge, current, voltage, resistance , [conductance], energy, power
Coulomb, ampere, volt, ohm, [siemens (mho)], joule, watt
Reference directions; open circuit, short circuit
Kirchhoff's Current Law (KCL), Kirchhoff's Voltage Law (KVL), Ohm's Law, i-v relations for C and L
Series connection, parallel connection; Wheatstone bridge
DC (steady), AC (time-varying)
Independent and dependent ideal voltage and current source
Voltage divider, current divider
Analog (A/D), Digital (D/A)
Multimeter (DMM), oscilloscope; function generator (and offset)
Prefixes (milli-, etc.)
Linear, nonlinear elements
Superposition (analysis)
Nodal analysis (node); reference node, ground
Loop analysis (mesh, branch)
Capacitor, inductor, transformer
Power delivery, dissipation, storage, maximum power transfer
Equivalent circuits (Rs, Cs or Ls in series/parallel); Thevenin, Norton)
Steady-state, transient, sinusoidal excitation
First-order transient analysis; initial conditions, final conditions, time constant
Frequency (Hz); angular frequency (radian/s); period; phase
Phasor, impedance, [reactance]
Amplifier: circuit model (input resistance, controlled source, output resistance); transfer function; gain; decibel;
Filter (lowpass, highpass, bandpass, notch), Bode plot (amplitude)
Operational amplifier (differential amplifier, comparator, rails, use of feedback, ideal op-amp); various op-amp circuits
AM radio
Semiconductors: holes; doping; n- and p- type;
Diodes: pn-diode, forward and reverse bias; I-V characteristic; turn-on voltage; ideal diode model; large-signal diode model; rectifier, zener diode, LED, diode laser, solar cell; clipper; clamp; AC/DC converter and full-wave rectifier
Field-effect transistor: MOSFET, n-channel, [p-channel]; drain, source, gate, [body]; enhancement mode; NMOS; [PMOS]; operating regions (cutoff, linear or triode or resistive, saturation); threshold voltage; I_D vs V_{DS} plot
MOSFET applications: amplifier or electrically controlled switch; load-line amplifier analysis; operating point; [bias circuits]; DRAM and flash memory cell