Errata file for Snoke, *Electronics: A Physical Approach*

p. 11
In problem 1.2, the electron density should be 10^{15} cm^{-3} (note minus sign in exponent).

p. 36
R_I should be R_i in Exercise 1.15.

p. 41
Figure 1.25 should be for Exercise 1.21. Figure 1.26 should be for Exercise 1.22.
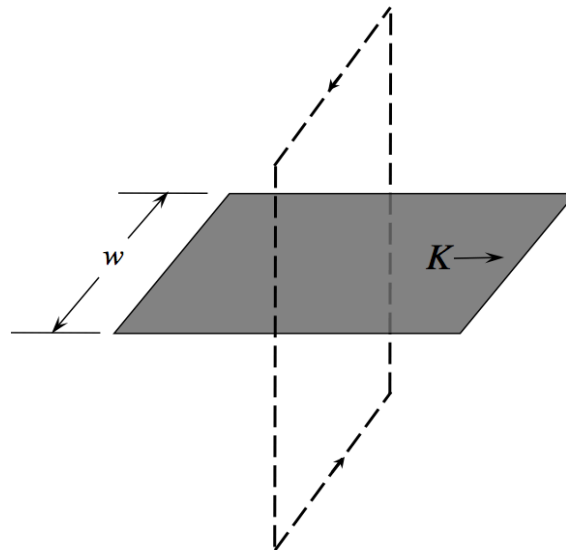
p. 42
Exercise 1.24 should have R_1 = 20 Ω and R_2 = 10 Ω to correspond to a voltage divider with output to input ratio of 1/3, for the assignments of R_1 and R_2 shown in Figure 1.9.

p. 65
Exercise 2.6 should say "output voltage".

p. 58.
Figure 2.9(a) should look as follows:

p. 82
In Exercise 2.16, the solution should be $1-e^{-t/RC}$ (missing negative sign).

p. 80
Exercise 2.14 should say $f(t) = 1$ for $T/2 < t < T$.

p. 86
Figure 2.22 should have an AC voltage source.

p. 98
Figure 2.29 is missing a resistor in between V_i and the rest of the circuit.

p. 104
Equations (3.2.2) and (3.2.3) should use I and V, not I_n and V_n.

p. 116
Exercise 3.8(b) should use $|V_o|^2$ and $|V_i|^2$.

In Exercise 3.9(b) the right-hand side of both equations should have the opposite sign.

p. 132
The second paragraph under "Impedance of a transformer" should start with "Whatever power is not reflected from the transformer".

p. 143
Exercise 3.21 should use a different symbol for the amplitude instead of V_0.

p. 150
The integrals in (3.8.12) and (3.8.13) should be over d^3r'

 In Equation (3.8.16), d is never defined. It is the offset in the y-direction of the two wires, equal to half the distance between them.

The calculation of Equations (3.8.16) and (3.8.17) is incorrect, because it leaves out the dependence of $|\boldsymbol{r'}\text{-}\boldsymbol{r}|$ on x. The conclusion is correct, however, that the infinite transmission line does not radiate into the far field. See the solution to Exercise 3.25 in the solution manual for the full calculation.

p. 151
The model presented in Exercise 3.25 is oversimplified; the full current and voltage relation on the line must be taken into account to give the correct calculation. See the solution given in the solutions manual.

p. 183
Exercise 4.2 should note that V_{12} is negative.

p. 213
Equation (4.5.7) should have eV_o in the exponent, not qV_o.

p. 233
Exercise 4.30 should include the information that $I_s = 10^{-6}$ A.

p. 237
The leftmost region of Figure 5.3 should have only a donor level, and no acceptor level.

p. 238
The negligible term $2I_s/\beta$ is dropped in the second line of (5.2.2).

p. 239
The last term of both lines of (5.2.3) should depend on V_{BE}, not V_{BC}, i.e., should be $-(I_s/\beta)(\exp[eV_{BE}/k_BT]-1)$.

p. 242
In the data sheet, "lc" should be read as "I_C", i.e., the collector current.

p. 242
Exercise 5.1 should use a higher resistance to keep the collector current below the rated value of 1.0 A. A value of 67 mA into the base (for the stated gain of 15) implies a base resistance of (4.4 V)/(.067 A) = 65 Ω.

p. 245
In Exercise 5.4, part (c), the function to be plotted should be $I_C(V_{CE})$.

p. 285
There is a missing intersection dot in Figure 5.33.

p. 312
The vertical axis of Figure 6.20 should be labeled V_i/V_o. Also, it is unclear in this plot, but the peaks do not cut off at a finite value; they extend to infinite positive or negative gain where the denominator of (6.5.5) vanishes.

p. 323
Exercise 6.23 should say "low-pass Butterworth filter".

p. 336
Exercise 6.26 should say that the variable resistor can change from 10 to 100 Ω..

p. 338
Figure 6.27 calls the circuit an "oscillator" but although it is a variation of an oscillator circuit, the time dependence does not oscillate.

p. 350
Figure 7.9 has an unnecessary dot on the Q_3 output.

p. 368
The resistances in Figure 7.16 should be labeled R, 2R, 4R, 8R, not R, R/2, R/4, R/8.

p. 386
In the table for Exercise 7.27, the third column should be labeled "Output 1"

p. 407
In Exercise 8.7, the last sentence should say "go back to waiting".

p. 419
In Exercise 8.13 the scattering time for defects should be written τ_D everywhere, not τ_d.

p. 434
The first sentence of the second paragraph of the subsection labeled "NRZI coding and clock synchronization" should read, "The non-return-to-zero invert-to-one (NRZI) standard assigns the bit 1 to any change of the voltage state in a given clock cycle and the bit 0 to no change of the voltage."

p. 445
Exercise 8.25 cannot be done as stated, that is, written as a fully position-independent code, unless there are additional commands besides those in Table 8.1. See the discussion in the solution set for Exercise 8.25.

p. 462
Exercise 9.8 should include the resistance (50 Ω) and I_s value (10^{-12} A).

p. 497
The value of A in Exercise 9.19 should be 300 cm^2.

p. 504
The reference to back emf should refer to the last part of Section 9.7.1.

pp. 543-544
Figures 10.11 and 10.12 have the surface charges labeled incorrectly: Both should have $+\sigma'$ on the top plate and $-\sigma'$ on the bottom plate.

p. 557
The sentence after Equation (10.5.15) should have I_{ext} not I.

p. 569
The end of the footnote 14 should read "centimeters or greater."

p. 572
The last sentence in Exercise 10.32 should ask "For what values of L and I_c...", not what ratio.

p. 610

In the line after Eq. (11.6.17), the complex number $2K/$ should be defined as $-\omega_R\exp(-i\phi)$.

p. 612
Exercise 11.18 should specify the initial ground state $u_3 = -1$.

p. 612
In Equation (11.6.21), u_2 should be u_2' in both places it appears.

In Equations (11.6.22) all the vector components should be u_1', u_2', u_3'.

p. 613
In Equations (11.6.23) all the vector components should be u_1', u_2', u_3'.

In Exercise 11.20, the dephasing time T_2 should be 10 ns and the lifetime 1 microsecond.