

## EE 221 – Circuits II

### Homework #12

10 points

*Date Assigned:* 11/3

*Date Due:* 11/13

- 12.1 Derive equations (17.28) in the text for odd function symmetry showing every step. Use the same level of detail as was used in the class and the lectures notes for the derivation of (17.18) for even function symmetry.
- 12.2 Text practice problem 17.4.
- 12.3 Text problem 17.14.
- 12.4 Text problem 17.15. Part (a) only.
- 12.5 Text problem 17.10. Using a mathematics package of your choice, plot the Fourier series representation of this function over a few periods with a sufficiently large number of terms to adequately represent this function.
- 12.6 Text problem 17.16.
- 12.7 Text problem 17.22.
- 12.8 Determine the Fourier series expansion of the function shown in Fig. 17.61 where  $f(0)=1$  and  $t_1=1$ . Using a mathematics package of your choice, plot the Fourier series representation of this function over a few periods with a sufficiently large number of terms to adequately represent this function.
- 12.9 Text practice problem 17.6. The solution shown in the text might be incorrect.
- 12.10 Text problem 17.32.
- 12.11 Text problem 17.33. Using a mathematics package of your choice, plot the Fourier series representation of  $v_s(t)$  and  $v_o(t)$  over a few periods with a sufficiently large number of terms to adequately represent each function.