EE 5621 QUIZ ZERO Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 30 August 2021

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Help me understand your background from EE 2212 or equivalent courses as well as associated electrical engineering, mathematics, physics, and chemistry courses. The results are not graded but for information only to assist me in the classroom preparation.

Use the following scale based upon your 2XXX and 3XXX courses as well as any other related courses or work experience:

5 Reasonably familiar with the topic

4 Familiar with the topic and just need to do some self study and review

3 I was introduced to the topic but an in-class review would be helpful

2 I was exposed to the topic but it should be reviewed and discussed in some depth

1 Never heard of it. The topic was not taught and/or I don’t recall the topic if it was taught

\_\_\_\_\_ Solving second -order differential equations; closed-form solutions

\_\_\_\_\_\_Interpreting closed form solutions to second-order differential equations, i.e. sinusoidal, hyperbolic, and

 Exponential type functions

\_\_\_\_\_ Interpreting solutions to second-order differential equations in one dimension

\_\_\_\_\_ Periodic table; Especially Columns III, IV, and V

 \_\_\_\_\_ Complex numbers and conversion between rectangular and polar forms

\_\_\_\_\_ Vector algebra in general

\_\_\_\_\_ Del ($∇) $operator and interpretation

\_\_\_\_\_ Statistical distributions

\_\_\_\_\_ Crystals lattices

\_\_\_\_\_ Quantum mechanics and tunneling

\_\_\_\_\_ Energy bands in one dimension

\_\_\_\_\_ Diffusion and the basic one-dimensional diffusion equation

\_\_\_\_\_\_Oxidation as related to semiconductor device processing

\_\_\_\_\_ Diode (semiconductor junction) structures

\_\_\_\_\_ Bipolar junction transistor (BJT) structures

\_\_\_\_\_ LED structures and operation

\_\_\_\_\_ Semiconductor LASER structures and operation

\_\_\_\_\_ Photovoltaics

\_\_\_\_\_ Contemporary applications of photonic devices including lighting

\_\_\_\_\_ Field-effect transistor (FET) structures

\_\_\_\_\_ Semiconductor materials

\_\_\_\_\_ Definition of an n- and p-type semiconductor

\_\_\_\_\_ Semiconductor device processing sequence

\_\_\_\_\_ Photolithography

\_\_\_\_\_ Resistivity, conductivity, and mobility

\_\_\_\_\_ Ability to write a technical paper

\_\_\_\_\_ Ability to present a technical paper using PowerPoint

\_\_\_\_\_\_Ability to use ZOOM

\_\_\_\_\_ IEEE Code of Ethics