FINAL EXAM CIRCUIT ANALYSIS

CHECKLIST

CIRCUIT VARIABLES

- [ ] International System of Units (SI units)
- [ ] Relationship between Voltage, Current, Power and Energy

CIRCUIT ELEMENTS

- [ ] Voltage and current sources
- [ ] Ohm’s law
- [ ] Kirchhoff’s laws (KCL and KVL)
- [ ] Circuit analysis containing dependent sources

SIMPLE RESISTIVE CIRCUITS

- [ ] Resistors in series and parallel
- [ ] Voltage division and current division rules
- [ ] Delta-to-Wye and Wye-to-delta circuits

TECHNIQUES OF CIRCUIT ANALYSIS

- [ ] Node-voltage and mesh-current methods
- [ ] Thevenin and Norton equivalents with dependent sources
- [ ] Maximum power transfer
- [ ] Inductor and capacitor (voltage,current,power and energy)

INDUCTANCE AND CAPACITANCE

- [ ] Series-parallel combinations of inductance and capacitance
- [ ] Sinusoidal source and response

SINUSOIDAL STEADY-STATE ANALYSIS

- [ ] Phasor
- [ ] Passive circuit elements in frequency domain
- [ ] KVL and KCL in frequency domain

SINUSOIDAL STEDY-STATE POWER CALCULATIONS

- [ ] Instantaneous power
- [ ] Series and parallel impedances circuits analysis in frequency domain using phasor
- [ ] Average and reactive power
- [ ] Rms value and power calculation
- [ ] Complex power
- [ ] Power calculation

BALANCED 3-PHASE CIRCUITS (Application of sinusoidal steady state analysis)

- [ ] 3-phase voltage sources
- [ ] Balanced 3-phase voltages
- [ ] Analysis of wye-wye circuits