

Things you should know for your final exam, SKEE 4433

Q1. Rectifier

- cover half wave, full wave of single-phase control rectifier
- and also uncontrolled three-phase
- Label and sketch waveforms voltage and currents, determine alpha and beta
- determine average values
- knowledge on DCM and CCM

Q2. DC-DC Converter (compulsory)

- requirement of power switches driving circuit
- Design based on variation input voltages, i.e. $10\text{ V} < V_s < 15\text{ V}$
- determine D, L, C values based on given specification
- Draw the waveforms
- cover buck, boost and buck boost

Q3. Inverter (DC – AC)

- Techniques used in deriving an AC output voltage
- Modulation strategies for output voltage
- focus on single-phase inverter cct
- square, quasi-square, harmonics eliminations,

Q4. DC Drives

- Method use in DC motor speed control
- Derive motor speed
- Constant and Constant Power
- Sketching the DC drive speed control system
- SCR drive (explain)
- Chopper Drives for calculating torque and power

Q5. AC Drives

- V/f speed motor control
- Variable speed drives using V/f control
- calculating of motor speed at different torque and frequency
- -- Calculating of supply voltage at particular speed
- supply frequency with motor braking torque