Sheet

Controlled rectifier

1- Single-Phase Half-Wave Controlled Rectifier (Converter)

Ex 1:

Single-phase half-wave converter circuit has vs(t) = 120 sin(377t) V and a load resistance R= 10 Ω . the delay angle is $\frac{\pi}{3}$ Determine:

(a) The efficiency

(b) The FF

(c) The RF

(d) The TUF

(e) The PIV of Thyristor

Ex 2:

In single-phase half-wave converter with resistive load, draw:

(a) Power circuit

(b) Output voltages

(c) voltage across the Thyristor

(d) Current through Thyristor

(e) Load current

(h) Source current

Ex 3:

In single-phase half-wave converter with inductive load, draw:

(a) Power circuit

(b) Output voltages

(c) voltage across the Thyristor

(d) Current through Thyristor

(e) Load current

(h) Source current

Ex 4:

In single-phase half-wave converter with resistive load, drive the output voltage using Fourier series