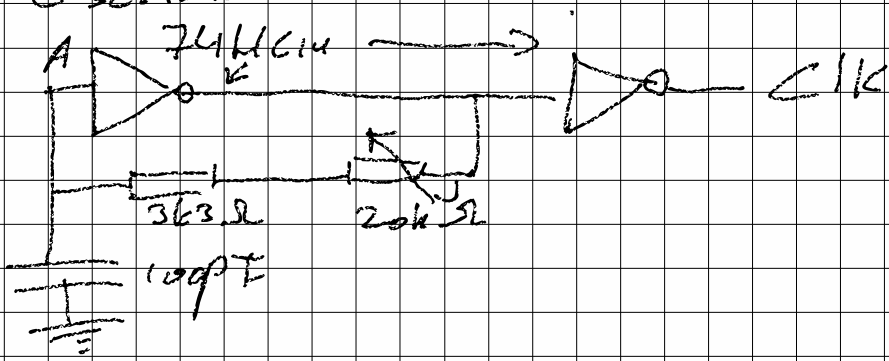
Procedure

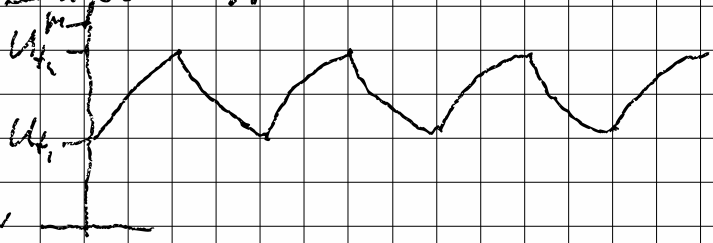
Oscilator:



Clk:

Duty cycle variable by 20k Ω

Input A:



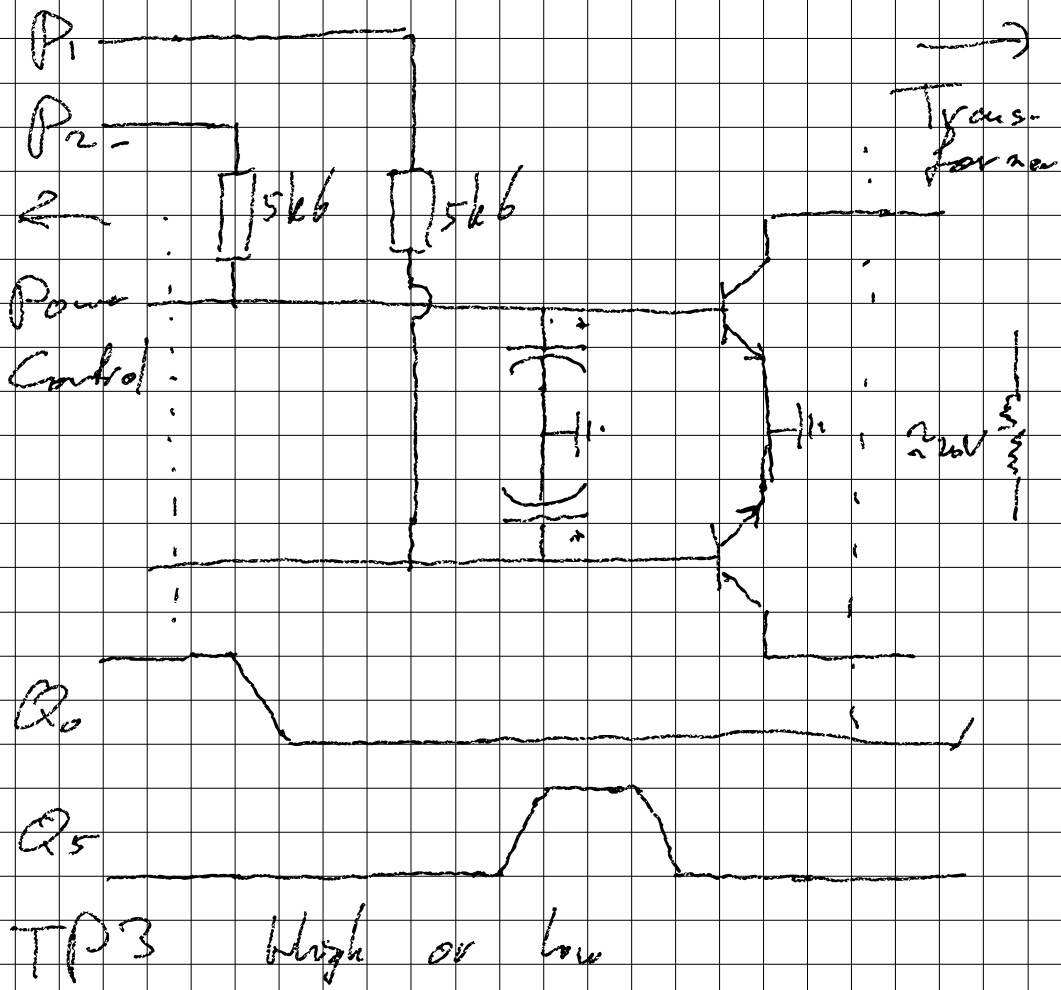
Basically Smitt Trigger, explained in assignment.

Pulse Generator:

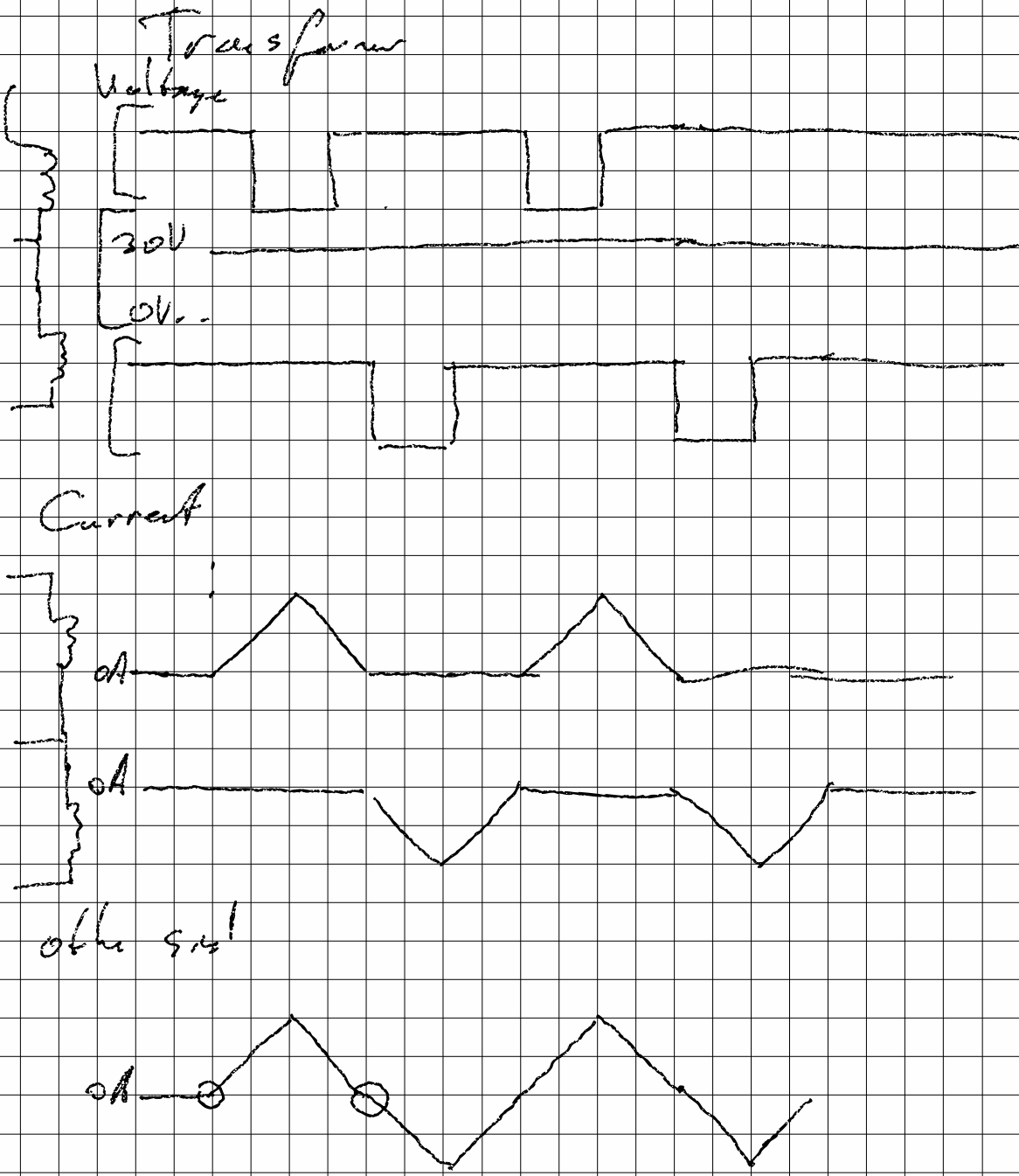
Only pulse Q0 & Q5

Then 2 Shift Registers to work as voltage follower to protect the pulse generator from drawing too much current.

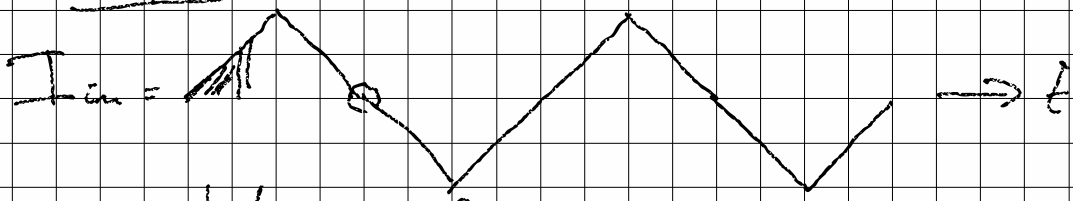
Power Switch:



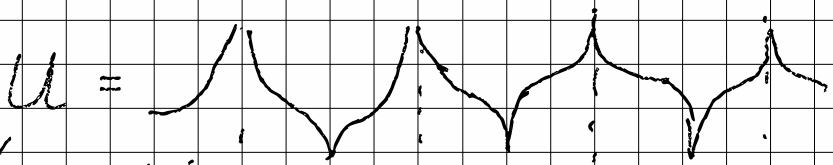
TP3 High or low


Transformer
Voltage
30V
0V.
Current
0A
0A
other side
0A

Transformer Condition



$$I = C\frac{dU}{dt} \Rightarrow \int I\,dt = C\,dU$$



+ stabilization around $\pm 0V$

NPN transistor collector breakdown current:
Http://industrial-electronics.com/DC_ckt-3.html

> + load the current peaks.

$$U = L\frac{dI}{dt}$$

$$C = \frac{Q}{U}\in \qquad CV = Q$$

Voltage Multiplier /
Voltage Cascade

Lab 4:

$C_1 = 470pF$

$C_3 = N.C.$

2.3 Scope_0 / 1

1 : TCP

2 : OSC_OP

Scope_2 : Max freq

Scope_3 : Min freq

2.4 Scope_4 : 1 : Pulse 0
2 : OSC_op

Scope_5 : 1 : pulse 1
2 : OSC_OP

Scope_6 : 1 : pulse 1
2 : pulse 0

2.5 $U^+ = 0V$

Scope_2 : 1 : Feedback Vp
2 : op-amp-Out

$U^+ = 1.5V$

Scope_P : 1 :

2.5 Refer to

Scope_9: 1: opamp o/p
Scope_10: 2: Vout / Mon
Gain min = 1

Scope_11: 1:
Gain Max

Scope_12: 2V signal
Feedback.

2.6. Scope_13: 1: opamp o/p
2: TP3
Pot 100%

Scope_14:
Pot 0%

Scope_15: 1: V_{ref} (U3 A) pin 3
opamp o/p = 4.6V

$V^+ = V^- = GND$
$V_o \approx 70\ mV$

2.7 scope_16: 1: TP3
$V_{ref} = -5V$ 2: TP2

Increase V_{ref}
scope_17.tif

2.8 scope_18: 1: TP2
2: TP1
Trafo resonance

~~3.1~~ 3.2 3.176 V
with 1/1000

Mode it clean (clk)
3.222 V (scope_20)

3.3 R6 ref V_{ref}
$\frac{1}{1000}$ $V_0 = 3,759$ V scope 21
$\frac{1}{1000}$ Low: 157.7 mV